BEFORE THE PUNJAB STATE ELECTRICITY REGULATORY COMMISSION, CHANDIGARH

File No.
Case No.
IN THE MATTER OF:

FILING OF AGGREGATE REVENUE REQUIREMETN (ARR) AND TARIFF PETITION FOR THE FINANCIAL YEAR 2015-16 UNDER REGULATION 13 OF THE PUNJAB STATE ELECTRICITY REGULATORY COMMISSION (TERMS AND CONDITIONS FOR DETERMINATION OF TARIFF) REGLATIONS, 2005.

AND

IN THE MATTER OF:

Punjab State Power Corporation Limited, The Mall, Patiala

Affidavit verifying facts contained in the petition enclosed.

I, Er. Tirlok Singh S/O Sh. Manohar Singh aged about 57 years, having my office at Shed No.-4, Shakti Vihar, PSPCL, Patiala do solemnly affirm and declare as follows:-

a) That I am the Chief Engineer/ARR&TR of Punjab State Power Corporation Limited, the petitioner in the above matter and am duly authorized by the Corporation to make affidavit in this behalf.

b) That I solemnly affirm.

i) That the contents of the submission for filing Aggregate Revenue Requirement and Tariff Petition for the year 2015-16 for Electricity Business of PSPCL are true to the best of my knowledge and nothing has been concealed therein.

ii) that the statements and facts incorporated in this petition are based on the information collected from concerned offices of the Corporation and believe them to be true.

Deponent
(Er. Tirlok Singh)

I, solemnly affirm at Patiala on 26.11.2014 that the contents of the above affidavit are true to the best of my knowledge & belief and nothing has been concealed therein.

Deponent
(Er. Tirlok Singh)

NOTARY SUKHPAL SINGH RATTAN Distt. Courts PATIALA (Pb.) Regd. No.6192 GOVT. OF INDIA

Signature/Thumb Attested
NOTARY PUBLIC
GOVT. OF INDIA

26 NOV 2014

The Contents of this Affidavit document have been read over to the deponent He/She has accepted it true & correct. Notary has no concern with the contents of the documents in any way only Signature/Thumb has been Attested.

Punjab State Power Corporation Ltd.

Aggregate Revenue Requirement & Tariff Petition

For FY 2015-16

Volume – I

Main Text and Formats

Submitted to

Hon'ble Punjab State Electricity Regulatory Commission
Chandigarh

Submitted by:

PUNJAB STATE POWER CORPORATION LIMITED
The Mall, Patiala – 147001
November 2014

Before

The Punjab State Electricity Regulatory Commission, Chandigarh

Filing Number:_____

Case Number:_____

IN THE MATTER OF:	Filing of the "Aggregate Revenue Requirement (ARR) & Determination of Tariff" Petition for the financial year 2015-16under Section 62 and 86 of the Electricity Act, 2003 read with the relevant regulations (including its amendments) and guidelines of the Commission for the Electricity business of Punjab State Power Corporation Limited
	AND
IN THE MATTER OF:	Punjab State Power Corporation Limited (hereinafter referred to as "PSPCL") The Mall, Patiala – 147001 – The Petitioner

The applicant respectfully submits as hereunder: -

A. The Punjab State Power Corporation Limited(hereinafter referred to as PSPCL) is one of the "Successor Company" duly constituted under Companies Act, 1956 (on 16 April,2010 Registration No: U40109PB2010SGC033813 - after restructuring of Punjab State Electricity Board (PSEB) by Government of Punjab vide notification dated 16 April,2010 no; 1/9/08-FB(PR)/196 known as "Punjab Power sector reforms Transfer Scheme" ("Transfer Scheme").

B. As per the transfer scheme the erstwhile Punjab State Electricity Board (the predecessor) has been unbundled into two corporate entities i.e POWERCOM and TRANSCO. The POWERCOM has been named as Punjab State Power Corporation Limited (PSPCL) and the TRANSCO has been named as Punjab State Transmission Company Limited (PSTCL).

C. As per the Transfer Scheme, the Government of Punjab has segregated the "transmission business of erstwhile Punjab State Electricity Board". It is reproduced as under

"The transmission undertaking shall comprise of all assets, liabilities and proceedings, belonging to the Punjab State Electricity Board, concerning the transmission of electricity and the State Load Dispatch Centre (SLDC) function."

Hence, the PSPCL is left with the Distribution, Generation and allied activities of the

erstwhile PSEB. As per the "The Punjab State Electricity Regulatory Commission (Terms and Condition for Determination of Tariff) Regulation 2005, [Chapter –I ((3) (k))] PSPCL should be considered as the integrated utility as it is currently engaged in multiple functions namely Generation, Trading and Distribution of electricity.

D. First Amendment in Transfer Scheme notified by Government of Punjab:

On 24 December 2012, Government of Punjab amended the Transfer Scheme vide notification number 1/4/04EB (PR)/620 known as Punjab Power Sector Reforms Transfer (First Amendment) Scheme, 2012.

Following are the salient features of the aforesaid amendments:

i) As per the transfer scheme, the funding of the Terminal Benefit Trusts in respect of pension, gratuity and leave encashment of the personnel, shall be a charge on the tariff of Powercom and Transco, respectively, on yearly basis, as may be decided by the Punjab State Electricity Regulatory Commission.

ii) The Terminal Benefit Trusts in respect of pension, gratuity and leave encashment, shall be progressively funded by the Powercom and Transco, respectively, as decided by the Punjab State Electricity Regulatory Commission, in the ratio of 88.64:11.36, over a period of 15 Financial Years commencing from 1 April, 2014. The terminal benefits liability accruing during the period of progressive funding, and thereafter, shall be shared in the same ratio by both corporations. Thus, funding shall continue even after the absorption of personnel in Transco and the trust shall be administered jointly by the said Powercom and Transco.

iii) It is also mentioned that the actual amount of pension; gratuity and leave encashment paid / to be paid on and with effect from 16 April, 2010 to 31 March, 2014, shall be shared by the Powercom and Transco, in the ratio of 88.64:11.36 on yearly basis.

iv) The General Provident Fund Trust, shall be funded by Powercom and Transcom both, as per the apportionment made in the opening balance sheet, on and with effect from the 16thApril, 2010, and the same shall be funded over a period of ten years commencing on and with effect from the 1st April 2013, along with interest as applicable.

v) Also provided that for the period commencing from 16April 2010 to 31March 2013, the Powercom and Transco shall be liable to pay interest on the apportioned General Provident Fund liability, at the rate as applicable for the respective financial years.

vi) The Powercom and Transco, shall be liable to pay Interest, as applicable to General Provident Fund from time to time, on the net accruals (or monthly basis) of the General Provident Fund amount on and with effect from the 16April 2010, to the date of issuance of this notification, and thereafter all the General Provident Fund matters, shall be settled

through trust.

vii) Until otherwise directed by the State Government, the Powercom and Transco shall maintain common Trust for pension, gratuity and other terminal benefit liabilities and General Provident Fund, instead of individual trusts for each of the companies and all the contributions shall be made to such Trusts in the aforesaid manner.

viii) The Government of Punjab notified the final opening balance sheet for Powercom and Transco as on the 16April 2010.

E. Based on the opening balance sheet notified by the Government of Punjab vide the Amendment in Transfer scheme and the provisions of Regulation 13 of the PSERC (Terms and Conditions for Determination of Tariff) Regulations, 2005 and in compliance with the directives of the Hon'ble Commission on the matter, PSPCL filed Petition for approval of ARR and Determination of Tariff for FY2014-15, revised ARR estimate for FY 2013-14 and truing up for FY 2010-11, FY 2011-12 based on audited accounts. Further, Hon'ble Commission issued the Order in the matter on 22 August, 2014 and determined the tariff for FY 2014-15.

F. Further, the Hon'ble Commission vide Order dated 22 August, 2014 decided to undertake the true-up for FY 2012-13 alongwith ARR Petition for FY 2015-16 when the audited annual accounts for FY 2012-13 are available. In compliance with the directions of the Hon'ble Commission, PSPCL is filing the present Petition for approval of ARR and Determination of Tariff for FY 2015-16, revised ARR estimate for FY 2014-15 and audited data for FY 2012-13 for final truing up.

Prayers to the Commission:

The Petitioner respectfully prays that the Hon'ble Commission may:

a) Consider the submissions and approve the final true up of expenses for FY 2012-13 and Revised Estimates for FY 2014-15;

b) Approve to consider the true up for FY 2013-14 when the audited annual accounts for the year are available;

c) Approve the Aggregate Revenue Requirement for FY 2015-16;

d) Treat the filing as complete in view of substantial compliance as also the specific requests for waivers with justification placed on record;

e) Examine the proposal submitted by the petitioner for a favorable dispensation as detailed in the enclosed proposal;

f) Condone any inadvertent omissions/errors/shortcomings and permit PSPCL to add/change/modify/alter this filing and make further submissions as may be required at a future date;

g) Pass such further order, as the Hon'ble Commission may deem fit and proper keeping in view the facts and circumstances of the case.

BY THE APPLICANT THROUGH
Er. Tirlok Singh
Chief Engineer/ ARR & TR
Punjab State Power Corporation Ltd.

Patiala
Dated: November, 2014

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1. INTRODUCTION

1.1. Background

1.1.1. The current petition has been prepared in accordance with the following Acts/ Policies/ Regulations:

a) The Electricity Act, 2003;

b) Provisions of National Electricity Policy;

c) Provisions of National Tariff Policy;

d) Punjab State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2005 as amended from time to time (herein after referred as "PSERC Tariff Regulations");

e) Punjab Power Sector Reforms Transfer Scheme (Transfer Scheme) and as amended from time to time

1.2. Sections in this Petition

1.2.1. **Final True up for FY 2012-13:** The Petitioner in its ARR petition for the FY 2014-15 had submitted the 'Provisional True-up' for FY 2012-13. However under the Regulation 9 of PSERC Tariff Regulations, True-up can be undertaken only after Audited accounts of the year are made available. In view of this the Commission in its Tariff Order dated 22 August, 2014 decided to undertake the True up for the FY 2012-13 when the audited accounts are available. In this section, the Petitioner has submitted the true up based on the actual expenses and income as per the audited annual accounts for FY 2012-13 and has also presented its submissions regarding certain critical aspects influencing the true-up expenses for FY 2012-13. Further, Petitioner also states that the CAG Audit report for the same period is still awaited which will be submitted along with the Petition, if received or will be made available well before the finalization of the tariff Order for FY 2015-16.

1.2.2. **Review of ARR for FY 2014-15 and Projection of ARR of FY 2015-16:** In this section, the Petitioner has submitted the revised estimates for 2014-15 for various heads of expenditures based on the half year actual data and the projections for next half of FY 2014-15. Also, the Petitioner has submitted the projections of expenses and the determination of revenue requirement for FY 2015-16 in order to determine the tariff for said year. This section comprises of several sub-sections describing the basis and forecasts for FY 2015-16.

1.2.3. The Petitioner would also like to respectfully submit that since the annual accounts for FY 2013-14 are not finalized; it is not submitting the Petition for the approval of provisional true up of ARR for FY 2013-14. The Regulation 9 of PSERC (Terms and Conditions for Determination of Tariff) Regulations, 2005 states as under:

"Regulation 9 - "REVIEW AND TRUING UP"... "After audited accounts of a year are made available, the Commission shall undertake similar exercise as above with reference to the final actual figures as per the audited accounts. ***This exercise with reference to audited accounts shall be called Truing Up."*** *(emphasis added)*

Thus, PSPCL respectfully submits to the Hon'ble Commission that the truing up exercise for FY 2013-14 may be undertaken by the Hon'ble Commission only after the finalization of audited annual accounts.

1.2.4. The objectives of the Petition are as under:

a) Seeking the approval of the Hon'ble Commission for the final true-up for FY 2012-13 as detailed in this petition. Audited Annual Accounts of PSPCL for the year ended 31 March, 2013 are attached as Volume III.

b) Seeking approval of the revised estimates for the FY 2014-15;

c) Seeking the approval of the Hon'ble Commission for the expenses that PSPCL expects to incur in FY 2015-16;

d) Providing the status of compliance of directives issued by the Hon'ble Commission from time to time and seeking relaxation on a rational basis in cases where even after the best and sincere efforts of PSPCL compliance could not be ensured;

e) Seeking appropriate tariff increase for meeting the cumulative revenue gap proposed as may be felt necessary by the Hon'ble Commission.

1.2.5. PSPCL has made genuine efforts for compiling all relevant information relating to the tariff petition as required by the regulations issued by the Hon'ble Commission. Further, every effort has been made to ensure that information provided is accurate and free from material errors. However, there may be certain deficiencies owing to the limitations in the information system of the Petitioner. Hence, PSPCL prays to the Hon'ble Commission that the information provided be accepted for the current filing and at the same time PSPCL assures that it is taking strong measures to improve its management information system as elaborated in subsequent chapters of this Petition.

SECTION – I

FINAL TRUE-UP FOR FY 2012-13

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2. FINAL TRUE-UP FOR FY 2012-13

2.1. Background

2.1.1. PSPCL presents its submissions for the purpose of final true-up for the FY 2012-13 as per audited annual accounts for the year.

2.1.2. The Petitioner in its ARR petition for the FY 2014-15 had submitted the 'Provisional True-up' for FY 2012-13. However under the Regulation 9 of PSERC Tariff Regulations, true-up can be undertaken only after audited annual accounts of the FY 2012-13 are made available. In view of this, the Commission in its Tariff Order of FY 2014-15 dated 22 August, 2014 decided to undertake the True up for the FY 2012-13 along with ARR Petition of FY 2015-16, when the audited annual accounts will be available.

2.1.3. In this section, the Petitioner has submitted the True up based on the actual expenses and income as per the audited annual accounts for FY 2012-13. The Petitioner has also presented its submissions regarding certain critical aspects influencing the true-up expenses for FY 2012-13.Further, Petitioner also states that the CAG Audit report for the same period is still awaited which will be submitted along with the Petition, if received or will be made available well before the finalization of the tariff Order for FY 2015-16.

2.1.4. In light of the above, PSPCL submits the final true-up based on the audited annual accounts for FY 2012-13 and request the Hon'ble Commission to carry out the final true-up of expenses submitted in the petition & formats and allow final true-up of expenses as prayed in this petition.

2.1.5. PSPCL submits that as per the duties of Statutory Auditors laid down under section 227 of Companies Act, 1956 as amended from time to time, auditing of energy sales, generation and power purchase figures is over and above scope of Statutory audit. These figures taken in the ARR are already approved by the Whole Time Directors (WTDs) of the Company and also these figures are duly signed by the Chief Engineer/ARR & TR who is duly authorized by the corporation for preparing the ARR petition and disclosing the information to the Hon'ble Commission. Further, the ARR has been duly approved by the WTDs. PSPCL further submitted that as the figures of ARR are duly approved by the WTDs, which indicate that the figures of energy sales, generation and power purchase are also approved by the WTDs.

2.2. Energy Sales

2.2.1. The actual sales for the FY 2012-13 vis-à-vis the sales approved by the

Commission in its ARR/ Tariff Order for FY 2012-13 and review exercise in the ARR/Tariff Order for FY 2012-13 is as summarized below:

Table 1: True-up Energy Sales for FY 2012-13 (MU)

Sr. No.	Category	Proposed by PSPCL for FY 2012-13	Approved in TO for FY 2012-13	RE Submitted during determination of ARR for FY 2013-14	Approved in Review (TO for FY 2013-14)	Actual as per Accounts
1	Domestic	10082	9642	9536	9535	9504
2	Commercial (NRS)	3126	2838	2902	2902	2790
3	Industrial					
(a)	Small Supply	939	891	917	917	903
(b)	Medium Supply	1918	1815	1852	1853	1834
(c)	Large Supply	7856	7856	9864	9864	9563
(d)	*Total*	10713	10562	12633	12634	12300
4	Street Lighting	*129*	135	146	146	148
5	Bulk Supply	576	552	591	*592*	570
6	Railway Traction	156	184	140	139	135
7	Total Metered Sales (except AP) within State	24781	23913	25948	25948	25447
8	AP Consumption	11922	11003	11456	10687	10794
9	Total Sale Within State	36703	34916	37404	36635	36242
10	Sales to Outside State	111	0	113	53	100
11	Sales to Common Pool Consumers	305	305	305	305	309
12	Total Sales (9+10+11)	37119	35221	37822	36993	36650

2.2.2. On the overall, the metered sales within the State for the FY 2012-13 has been at 25447.25 MU which is lower by 1.93%r with respect to 25948 MU approved for the metered consumers by the Hon'ble Commission in the Tariff Order for FY 2013-14.

2.2.3. It is submitted that the sales especially in the industrial large supply category have been lower by 3.05% than the approved values in review exercise. From the above table it can also be seen that overall industrial consumption has decreased by 2.64%. One of the reasons for this reduction in industrial consumption is significant purchase of power by such large establishments/ industries from various other sources (including electricity exchange) under open access. The other metered categories which have contributed to the lower than approved sales during FY 2012-13 are commercial (NRS), bulk supply and railway traction categories.

2.2.4. Total actual sales (including sale to outside state and common pool consumers) for FY 2012-13 is lower by around 0.92% (i.e from 36993 MU to 36650 MU) than that approved by the Hon'ble Commission in the review exercise but the same is higher by 4.06% than the approved energy sales in tariff Order for FY 2012-13.

2.2.5. The AP sale during FY 2012-13 has been at 10,794 MU which is slightly higher than the Hon'ble Commission approved figure of 10687 MU in the tariff Order for FY 2013-14.

2.2.6. Actual outside state sale for FY 2012-13 is 100 MU which is higher than that approved by the Hon'ble Commission in tariff Order for FY 2013-14. The bifurcation of actual outside state sales during FY 2012-13 of 100 MU has been summarized below:

Table 2: Sale to Outside state during FY 2012-13

Sr. No.	GENERATING STATION	For FY 2012-13
1	Sale to other States	45
2	Shanan Royalty	55
3	**Total Outside State Sale**	**100**

2.2.7. PSPCL prays to the Hon'ble Commission to consider the actual sales of 36650 excluding share from RSD to HP for final truing up for FY 2012-13.

2.2.8. The breakup of the H1 and H2 actual sales for the metered and AP sales within the State for FY 2012-13 has been summarized in the following table.

Table 3: Break-up of the Energy Sales for FY 2012-13 (MU)

Sr. No.	Category	FY 2012-13	
		H1	H2
1	Domestic	5070.4	4433.45
2	Commercial (NRS)	1501.96	1288.34
3	Industrial		
(a)	Small Supply	453.16	449.93
(b)	Medium Supply	908.2	925.46
(c)	Large Supply	4837.01	4725.94
(d)	Total (Industrial)	6198.37	*6101.33*
4	Street Lighting	64.89	83.39
5	Bulk Supply	289.93	280.34
6	Railway Traction	69.29	65.56
7	Total Metered Sales (except AP) within State	13194.84	12252.41
8	AP Consumption	7649.08	3145.19
9	TOTAL	20843.92	15397.6

2.3. AP Consumption

2.3.1. PSPCL submits that Hon'ble Commission has determined AP consumption for FY 2012-13 in Tariff Order by applying 5% growth rate on revised estimate of FY 2011-12. Further, Hon'ble Commission during the revise estimate of FY 2012-13 has determined the AP consumption based on the month-wise energy pumped in AP feeders. In this Petition, PSPCL has submitted the AP consumption based on sample metered. The actual AP consumption as recorded for the FY 2012-13 is marginally higher by 107.27 MU than that approved by the Hon'ble Commission against the revised estimates proposed by the PSPCL along with the ARR for the FY 2013-14.

2.3.2. PSPCL further submits that it has already been complying with the directives of the Hon'ble Commission with effect from October 2010. Data has been supplied on a monthly basis for the following:

a. Division-wise consumption recorded by sample meters
b. AP Sample meters study data
c. Detail of Increase/Decrease in AP load having sample meters
d. Detail of AP sample meters with excess consumption than normal
e. Zone wise detail of divisions having highest AP factor

2.3.3. In the Tariff Order for FY 2012-13, based on the methodology adopted for AP consumption, the Commission directed PSPCL to increase sample size of AP consumers to 10%. PSPCL submits that as on March 2013, sample size of AP meters is 109516 no. i.e. 9.29%. However, all new AP tube well connections under priority scheme will be released by providing meters.

2.3.4. Further, the PSPCL has also strived hard to achieve the directive of the Hon'ble Commission to restrict the percentage of faulty meters to 10% of the total installed.

2.3.5. As regards the mandate of 100% metering of all consumers including AP, the Commission in meeting on September 2011 had emphasized the need for 100% metering and had advised the utility to prepare a plan to implement the mandate. Further, the Commission has directed in the Tariff Order for FY 2012-13 as under:

> *"The pilot project to measure AP consumption of each AP consumer through AMR system undertaken in Ajitgarh (Mohali) circle of PSPCL may be got implemented on lease/rental basis covering installation, maintenance and up keep of AMR meters. In addition this project may also include installation, maintenance and up keep of LT capacitors at each AP consumer's end on lease/rental basis. This may prove to be a least cost and efficient solution to the 100% AP metering and improving AP power factor.*

The utility is advised to furnish a plan to the Commission for implementing 100% metering and AP power factor correction within two months of this Tariff Order''

2.3.6. In compliance of the above directives, PSPCL humbly submits that pilot project has been completed by installing 52 meters on Mouly feeder in Mohali circle. The pilot project highlighted /projected the problem of damage/ burning of meters as well as stealing of meters. It is anticipated that situation may be more serious in remote belts for meters installed on AP consumers for AMR on the basis of the experience of Mouly feeders.

2.3.7. PSPCL submits that Hon'ble Commission in tariff Order for FY 2013-14 has changed methodology for AP consumption. PSPCL submits that the Hon'ble Commission has been disallowing the actual sales for AP consumers on the grounds change in methodology for deriving AP consumption since tariff Order for FY 2013-14. However, in light of the aforesaid submissions, it may be observed that PSPCL is in close compliance to most of the directives of the Hon'ble Commission regarding the implementation of metering to Agriculture consumers.

2.3.8. PSPCL submits that disapproval of AP sales ultimately results in huge disallowance in the power purchase cost. It is only the fifth year of PSPCLs functioning as a corporate entity, however, the ongoing legacy of disallowances in AP sales as prevalent in the erstwhile PSEB era are still being continued for the PSPCL. PSPCL believes that the whole agenda for introducing the transfer scheme and carrying out the reform process through unbundling was to bring in more transparencies and accountability in the subsequently formed entities. It is therefore essential that such newly created entities be provided with the necessary handholding support so that they have enough funds to meet the stipulated targets.

2.3.9. PSPCL submits that since its incorporation, it is aggressively pursuing the directives issued by the Hon'ble Commission within the overall budgetary constraints. The financial constraints are largely on account of the huge disallowances in actual expenses. The Electricity Act, 2003 suggests that the SERC should take the public interest into consideration while approving the tariff of the utilities. The PSPCL prays to the Hon'ble Commission to balance the public interest vis-à-vis the financial viability of the utility in the long-term interest of the consumers.

2.3.10. Continuation of such disallowance regime may lead PSPCL to the same financial crisis as prevalent in erstwhile PSEB. PSPCL submits that the National Tariff Policy suggests that in case the performance of the utilities is below the desired levels, then a suitable trajectory should be suggested by the Hon'ble Commission to bring the performance to the desired levels. In this case, PSPCL being a newly

incorporated entity, it is prayed that a suitable time frame be provided to it for meeting the desired performance levels and only then impose any disallowances/ penalties, if required.

2.3.11. Further, the PSPCL humbly submits that the AP pumped energy data was submitted in February 2013 as per the requirement of PSERC for monitoring purpose. The segregation of AP feeders was not complete and was still in process. In such circumstances, determining the AP consumption on the basis of pumped energy into the feeders for retrospective years does not give an accurate assessment of the AP consumption.

2.3.12. In the true-up for FY 2012-13 the actual AP consumption is slightly more than sample meter consumption approved by the Commission. The principal once adopted in tariff Order cannot be altered during truing up proceedings. The Hon'ble ATE has also ruled the same in its Judgment dated 4 December 2007 in Appeal No. 100 of 2007. The relevant extract is as under:

"28. We have heard contentions of the rival parties. Basic issue that has to be decided is: whether or not the Commission was correct in carrying out the truing up of revenue requirements and revenues of KPTCL for the tariff period 2000-01 to 2005-06. Invariably, the projections at the beginning of the year and actual expenditure and revenue received differ due to one reason or the other. Therefore, truing up is necessary. ... ...
It is made clear that truing up stage is not an opportunity for the Commission to rethink de novo on the basic principles, premises and issues involved in the initial projections of revenue requirements of the licensee." *(emphasis added)*

2.3.13. The AP consumption has been taken based on sample meters as AP consumption based on pumped meter not a trusted method of taking the consumption. It is fact that there is always some unauthorised shifting of AP load from AP feeders to nearby 24 hour supply feeder in order to have access to day time supply and extended hours of supply. Further, the computation of AP consumption on pumped energy involves assumptions with respect to losses of Agriculture feeder and contribution of AP consumption on mixed load feeders and any unreasonable assumption shall affect the consumption pattern adversely to PSPCL. Further, it is already proven fact for working out final output on the basis reverse computation only is not prudent method of computation. It is further added that this principle calculation is not being applied by any of the SERCs. Further, there is hardly any State except one or two which has 100% metering of Agriculture consumers and wherever it is existing also 100% readings of the same have never been ensured and accordingly insistence of PSERC to adopt pumped energy methodology may kindly be not applied.

2.3.14. Furthermore, the criteria of calculating AP consumption as adopted by Hon'ble Commission based on pumped energy is also not correct due to following reasons:

1. Hon'ble Commission is wrongly taking AP consumption of Kandi area mixed feeders as 30% of the total consumption whereas PSPCL has calculated the same as 45% of the total consumption as attached in Volume II of this Petition. PSPCL has supplied detailed calculations to this effect to PSERC vide its Memo No. 2944/CC/DTR-121/Vol.11/TR-II dated 23 December, 2013.
2. Hon'ble Commission had assumed the losses of AP feeders by deducting 2.5% losses of transmission level and 15% of the distribution losses as sub-transmission level losses which is not based on the facts and in fact the losses of AP feeders no where more than 8.5% to 9% as there is not question of any commercial loss and rather the pumped energy being recorded is lesser to the extent there is unauthorised tapping for urban pattern supply feeders by AP consumers.

2.3.15. In light of the above, PSPCL prays the Hon'ble Commission to approve the AP sales as submitted in the Petition.

2.4. Transmission and Distribution (T&D) Losses

2.4.1. The actual value of the T&D losses for FY 2012-13 arrived at in accordance with the actual energy sales, own generation and energy purchase is 16.77%. The actual loss is lower than approved loss level of 18.00%, with an over achievement to the extent of 1.23% in comparison to the target given by Hon'ble Commission for the year.

2.4.2. The Hon'ble Commission approved the transmission loss of 2.5% for PSTCL for FY 2012-13 in revised estimates. Accordingly, PSPCL has achieved the distribution loss (66 kV and below) of 14.27% as against the approved target of 15.90% in revised estimates.

2.4.3. PSPCL making concerted efforts to reduce and control the losses and is already recognized at par with some of the efficient utilities in the country. PSPCL has been able to restrict transmission and distribution losses at levels below the approved loss level. The loss reduction achieved is because of various loss reduction measures initiated by the PSPCL. This is an indication of the significant technical and operational efficiency efforts initiated by the PSPCL to reduce losses in the LT networks/ consumer categories.

Table 4: Approved Vs Actual T&D Losses for FY 2012-13

Sr. No	Category	FY 2012-13
1	Overall approved loss reduction trajectory of PSEB	18.00%
2	Actual Loss level (including Intra-state transmission losses)	16.77%

2.4.4. An analysis of the methodology for consideration of actual losses for erstwhile PSPCL's last Tariff Order suggests that the Hon'ble Commission disallows the sales pertaining to AP consumption and adds such disallowed sales to the T&D losses. The combined impact of both disallowance in AP consumption and T & D losses being higher (after reworking by Hon'ble Commission) is passed on as an ultimate disallowance in the power purchase cost. In view of the same it is prayed that the actual AP sales is in accordance with audited annual accounts of the PSPCL be approved for the final truing up for the year.

2.4.5. PSPCL further submits that Hon'ble Commission has fixed the trajectory of reduction of the T&D losses considering the AP consumption on the basis of sample meter reading. However, the approach of approving the T&D losses based on AP pumped energy consumption itself is contrary to Hon'ble Commission's trajectory of reduction in T&D losses as without revising the trajectory the same has proved detrimental to PSPCL.

2.4.6. PSPCL has already taken initiatives to reduce T&D losses and has been making capital investment in achieving the target. Details of these plans are discussed in enclosed compliance report for directives given by Hon'ble Commission apart from furnishing of regular status of these initiatives to them.

2.4.7. In light of the above PSPCL prays to the Hon'ble Commission to approve the T&D losses as proposed at 16.77% as per the actual for the year.

2.5. PSPCL's Own Generation

Gross Generation

2.5.1. PSPCL's actual thermal generation for the FY 2012-13 is as indicated in the table below:

Table 5: Gross and Net Generation for FY 2012-13 (MU)

Sr. No.		Projected in FY 2012-13 Petition		Approved in TO for FY2012-13		RE proposed in FY2013-14 petition		Approved in FY 2013-14 TO		Actual as per the accounts for FY 2012-13	
	Stations	*Gross*	*Net*	*Gross*	*Net*	*Gross*	*Net*	*Gross*	*Net*	*Gross*	*Net*
1	GNDTP	2815	2505	2552	2271	1784	1588	1782	1586	1632	1452
2	GGSSTP	9300	8509	9863	9025	9678	8856	9593	8778	9167	8399
3	GHTP	6989	6360	7577	6933	7350	6745	7402	6773	7215	6643
	Total	19104	17374	19992	18229	18812	17189	18777	17137	18014	16494

2.5.2. PSPCL submits that it has considered the generation of 145 MU during the trial run of Unit -3 of GNDTP, Bathinda. However, the same has not been considered in the computation of fuel cost as expenses are chargeable to capital expenditure and the revenue earned for sale of generation (net) during trial run is to be treated as reduction in Capital Expenditure.

2.5.3. PSPCL submits that its generating plants are operating as part of integrated grid and abide by the rules and regulations framed by CERC and PSERC to ensure the safety of the grid. In this view, to manage the frequency-load balance, PSPCL has to follow the instructions from Punjab State Load Despatch Centre (PSLDC). In FY 2012-13, PSPCL has suffered loss of generation because of backing down of its generation on instructions received from PSLDC even though it was available for generation. The details of same are as under:

Table 6: Loss of generation due to backing down for FY 2012-13 (MU)

Sr. No.	Generating station	Gross Generation approved in TO for FY2012-13 (MU)	Gross generation as per the accounts for FY 2012-13 (MU)	Loss of Generation due to backing down instructions from SLDC (MU)	Total Gross generation including loss of generation due to backing down (MU)
1	GNDTP	2552	1632	383	2015
2	GGSSTP	9863	9167	1155	10322
3	GHTP	7577	7215	492	7707
	Total	**19992**	**18014**	**2030**	**20044**

2.5.4. PSPCL humbly requests the Hon'ble Commission to consider the loss of generation due to backing down instructions of PSLDC for assessing the performance of generating plants.

2.5.5. The details of actual unit wise generation and Plant Availability factor (PAF) (%) of different thermal station for FY 2012-13 is summarized in following tables:

Table 7: GHTP unit wise generation and PAF for FY 2012-13

Unit	Gross Generation (MU)	PAF (%)
(Unit 1)	**1648**	93.21
(Unit 2)	1470	89.06
(Unit 3)	1984	93.33
(Unit 4)	2113	98.88
TOTAL	**7215**	**93.84**

Table 8: GNDTP unit wise generation and PAF for FY 2012-13

Unit	Gross Generation (MUs)	PAF
(Unit 1)	610	86.06%
(Unit 2)	636	85.97%
(Unit 3)	385	88.73%
(Unit 4)	0	0.00%
TOTAL	**1632**	**86.42%**

Table 9: GGSSTP unit wise generation and PAF for FY 2012-13

Unit	Gross Generation (MUs)	PAF
(Unit 1)	1288	84.70
(Unit 2)	1680	97.17

Unit	Gross Generation (MUs)	PAF
(Unit 3)	1340	84.49
(Unit 4)	1747	99.06
(Unit 5)	1441	89.61
(Unit 6)	1670	97.65
TOTAL	**9167**	**92.11**

2.5.6. As can be seen from above, the PSPCL has achieved higher plant availability than the normative target of 85% for the plant GGSSTP, GHTP and GNDTP. Further, in case of GNDTP, the overall plant availability of GNDTP has been computed after taking into consideration of effective capacity of the plant as renovation and modernization of Unit 3 and Unit 4 was planned in FY 2012-13.PSPCL submits that the Hon'ble Commission in Tariff Order of FY 2012-13 has also recognized the fact that because of R&M of Unit 3 and Unit 4, lower generation would be available from these units and approved the availability of 66.58%. After R&M, Unit 3 has achieved the COD on 7 December, 2012 and maintains the availability of 88.73% (computed based on 115 days i.e. from 7/12/12 to 31/03/13).

2.5.7. Further, PSPCL submits that Hon'ble ATE in its Judgment dated 3 March, 2009 in Appeal No. 96 of 2008 in case of UPRVUNL vs. UPERC & others held as under:

> *"9. When a plant is taken out for renovation and modernization, obviously the machine cannot be operated and has to necessarily remain out of service during the R&M work. In view of this, the Commission has rightly considered this period as "consequential impossibility of operation of such capacity". Having reached this right conclusion, the Commission could not have taken away the effect of this factual ground reality. Moreover, the Commission itself has amended its Regulation 16 "Norms of Operation" in which it has specified that, "the depreciation and interest on working capital in the annual capacity (in fixed) charges shall only be prorated to such effective capacity".*

In the above said Judgment, it is recognized that period of R&M activities shall be treated as consequential impossibility of operation. Accordingly, PSPCL has considered the effective capacity for computation of plant availability for GNDTP plant.

2.5.8. As regards the computation of plant availability in case of R&M activities, Hon'ble Commission has also precisely envisaged the situation and provided the provision of specifying separate norms for performance parameters in Regulation 36 of PSERC (Terms and conditions for determination of Generation, Transmission, Wheeling and Retail Supply tariff) regulations, 2014.

Generation Incentive

2.5.9. As per the Regulation 10 of the PSERC Tariff Regulations 2005, any gain or loss, as the case may be, with respect to excess or under recovery of norms and targets shall be retained/ borne by the licensee itself. Further, Regulation 20 and Regulation 37 of PSERC Tariff Regulations 2005 and as amended in 2009 states that while determining generation tariff, Commission shall be guided by Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 as amended from time to time.

2.5.10. The relevant extract of above mentioned Regulations is provided below:

Regulation 10: Excess or under recovery with respect to norms and targets

"1. The generating company or the licensee, as the case may be, shall retain the entire gain arising from over achievement of the norms laid down by the Commission in these Regulations or targets set by the Commission from time to time.

2. The generating company or the licensee, as the case may be, shall bear the entire losses on account of its failure to achieve the norms laid down by the Commission or targets set by the Commission from time to time."

Regulation 20: Cost of generation

"While determining the cost of generation of each thermal / gas / hydro electric generating stations located within the State, the Commission shall be guided, as far as feasible, by the principles and methodologies of CERC, as amended from time to time."

Regulation 37: Generation tariff

"The components of generation tariff shall be as laid down in the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 as applicable from time to time."

2.5.11. As can be seen from above, for the determination of generation tariff, PSERC is guided by the norms and principles as laid down in the CERC Tariff Regulations 2009. The Regulation 21 of the CERC Tariff Regulations 2009 states that the recovery of fixed charges inclusive of incentive payable shall be based on the Normative Annual Plant Availability Factor (NAPAF) for each station. The Regulation 26 (i) (a) of the above mentioned regulations provide that the NAPAF for all thermal generating stations shall be 85%. The relevant extract of CERC Regulations 2009 is summarized below:

Regulation 21: Computation and Payment of Capacity Charge and Energy Charge for Thermal Generating Stations

"...(2) The capacity charge (inclusive of incentive) payable to a thermal generating station for a calendar month shall be calculated in accordance with the following formulae:

(a) Generating stations in commercial operation for less than ten (10) years on 1st April of the financial year:

AFC x (NDM / NDY) x (0.5 + 0.5 x PAFM / NAPAF) (in Rupees);

Provided that in case the plant availability factor achieved during a financial year (PAFY) is less than 70%, the total capacity charge for the year shall be restricted to

AFC x (0.5 + 35 / NAPAF) x (PAFY / 70) (in Rupees).

(b) For generating stations in commercial operation for ten (10) years or more on 1st April of the year:

AFC x (NDM / NDY) x (PAFM / NAPAF) (in Rupees).

Where,

AFC = Annual fixed cost specified for the year, in Rupees.

NAPAF = Normative annual plant availability factor in percentage

NDM = Number of days in the month

NDY = Number of days in the year

PAFM = Plant availability factor achieved during the month, in percent:

PAFY = Plant availability factor achieved during the year, in percent "

Regulation 26 (i): Normative Annual Plant Availability Factor (NAPAF)

" (a) All thermal generating stations, except those covered under clauses (b), (c), (d), (e) & (f) - 85%"

2.5.12. As regards the generation incentive, the Hon'ble APTEL has also decided in the favour of PSPCL in its Judgment dated 18 October 2012 in PSPCL versus PSERC in the Appeal Nos. 7 of 2011, 46 of 2011 and 122 of 2011. The relevant extract of the said Judgment has been summarized on the following page:

"...However, for the purpose of tariff, ***the target plant availability as per the Central Commission's Regulations has to be considered****. It may be mentioned in this connection that in the case Punjab State Transmission Corporation vs. PSERC, it has been held that when the provisions of the Tariff Regulations of the Central Commission have been incorporated by reference in the Tariff Regulations of the State Commission, the same is required to be followed and cannot be ignored by the State Commission."(emphasis added)*

2.5.13. Further, Hon'ble ATE in its Judgment dated 11 September, 2014 in Appeal No.

174 of 2012 has reiterated the fact in Judgment dated 18 October, 2012 and directed as under:

> *"40.4. The State Commission is not justified in applying the provisions of Tariff Regulations for generation target availability for recovery of fixed charges and incentive. The said approach of the State Commission while deciding issue no. (vi) is illegal and ill-founded. We have decided issue no. (vi) in favour of the appellant as the same issue is covered by the earlier judgment of this Appellate Tribunal dated 18.10.2012 passed in Appeal No. 7 of 2011 & batch wherein it was held that when the provisions of the* ***Tariff Regulations of the Central Commission have been incorporated by reference in the Tariff Regulations of the State Commission, the same is required to be followed and cannot be ignored by the State Commission.*** *The State Commission has indicated that in the absence of segregated accounts for generation, the incentive cannot be worked out as per the Regulations for which we have given certain directions under paragraph 38. Accordingly, the State Commission shall examine the same issue afresh as per the directions given by this Appellate Tribunal in the aforesaid judgment dated 18.10.2012." (emphasis added)*

2.5.14. In view of the above Hon'ble ATE Judgment, PSPCL has already submitted the information of segregation of cost amongst various functions as per Audited accounts of FY 2012-13 vide letter No. 5423/TR-5/662 dated 13 November, 2014 and has also been attached in Volume II of this Petition. Accordingly PSPCL prays to the Hon'ble Commission that the generation incentive be determined on the basis of PSERC Tariff Regulations 2005 in conformity to the CERC Tariff regulations as mentioned in the State Regulations.

Auxiliary Consumption

2.5.15. The plant wise auxiliary consumption projected by the PSPCL during the determination of ARR for FY 2012-13, auxiliary consumption approved by the Hon'ble Commission in Tariff Order for FY 2012-13, revised figures projected by PSPCL in the ARR Petition for FY 2013-14, the figures approved against the RE projections along with the actual for the year are submitted as below:

Table 10: Auxiliary Consumption for FY 2012-13

Sr. No.	Stations	Projected in FY 2012-13 Petition	Approved in TO for FY 2012-13	RE proposed in FY 2013-14 petition	Approved in FY2013-14 TO	Actual for FY 2012-13
1	GNDTP	11.00%	11.00%	11.00%	11.00%	11.02%
2	GGSSTP	8.50%	8.50%	8.50%	8.50%	8.37%
3	GHTP	9.00%	8.50%	8.24 %	8.50%	7.93%

2.5.16. The Hon'ble Commission had revised the auxiliary consumption for FY 2012-13 for GHTP at 8.50% from 9% based on CERC regulations for the period 2009-10 to 2014-15 in the Tariff Order for FY 2012-13. PSPCL has restricted the auxiliary consumption of the GNDTP, GGSSTP and GHTP plant at 11.02%, 8.37% and 7.93% respectively, which are well within the values approved by the Hon'ble Commission.

2.5.17. It is submitted that PSPCL has taken initiatives to contain the Auxiliary Consumption within the prescribed limits. The results of the efforts are clearly visible in GNDTP, GHTP and GGSSTP units where the auxiliary consumption is lower than that approved by the Hon'ble Commission.

Further PSPCL would like to say that GNDTP, Bathinda is an old generating station whose units have already outlived their useful life of 25 years.

Table 11: Age details of GNDTP Plant

Sr. No.	Units	Capacity (MW)	COD	Age (Yrs)
1	U-1	110	22.09.74	36
2	U-2	110	19.09.75	35
3	U-3	110*	29.03.78*	34*
4	U-4	110*	31.01.79*	33*

**before R&M activities of Unit 3 and Unit 4 GNDTP plant*

a) Although R&M activities have been undertaken in some of the units, however, the same have not borne the desired results.

b) R&M activities were also undertaken in the neighboring state of Haryana wherein two agencies M/s Alstom and M/s BHEL were involved for the R&M of 110 MW Panipat Units-1 and 2. It needs to be appreciated that M/s BHEL had not taken any guarantee of the performance results post completion of the R&M activities in the units. Therefore, even after the R&M initiatives, the performances of these units have not been in line with the normative limits being approved by the Hon'ble Commission.

c) It needs to be appreciated that technology constraints in 110 MW units make it really difficult even for the Original Equipment Manufacturers (OEMs) to commit any guaranteed performance for the units.

d) As such, the auxiliary consumption remains more or less constant for the generating units; however, the auxiliary consumption appears to be slightly

higher i.e. 11.02% when compared to the Hon'ble Commission's approved figure of 11.00%.

e) In this regard, PSPCL also submits the relaxation provided by other SERCs based on the ground realities in the State Generating Companies in their respective states:

MSPCGL submitted that the Auxiliary Consumption for the first six months of FY 2009-10 for Paras was 15.00%, and projected Auxiliary Consumption of 13.38% for second half of the year, which is considerably higher than the approved auxiliary consumption of 9.70% in FY 2009-10, ***on account of the vintage of the stations and poor quality of coal.*** *MSPGCL further submitted that the capacity of Unit-2 has been derated w.e.f. April 2007 and therefore, the auxiliary consumption for the Unit has increased. The other factors that are responsible for such increase are the* ***partial loading due to inferior quantity of coal and supply of wet coal in the rainy season.*** *MSPGCL has projected the auxiliary consumption of 14.10% for FY 2009-10 and 13.38% for FY 2010-11. It is also observed that there has been a considerable increase in the auxiliary consumption as compared to previous year's 12.18%.*

The Commission in its Order dated March 5, 2010 in Case No. 16 of 2008 observed that the Auxiliary Consumption norm suggested by the independent agency (CPRI) for FY 2008-09 for some of the stations was substantially higher than the actual auxiliary consumption and hence, the Commission ***approved the Auxiliary Consumption norm for FY 2009-10 based on actual auxiliary consumption for FY 2008-09****. The Commission at this stage has not revised the auxiliary consumption norm for FY 2009-10. For FY 2010-11, the Commission has considered the norms suggested by CPRI."*

		FY 2009-10			FY 2010-11		
Station	MYT Order	MSPGCL	CPRI	Approved	MSPGCL	CPRI	Approved
Paras	9.70%	14.10%	12.18%	12.18%	13.38%	12.45%	12.45%

Excerpt from UPERC Order for UPRVUNL for FY 2008-09 for allowing relaxation in auxiliary consumption norms

In order dt.13.10.08, the Commission also observed that it was not averse to consider difficulty, if any, being experienced by the petitioner in achieving the operational norms at the time of determination of tariff. The Commission is aware of consumption of increased quantity of input due to high energy loss in auxiliaries in comparison to that on bench mark values, but petitioner's failure to carry out timely maintenance, which has actually led to higher auxiliary consumptions in the plants, can also not be ignored. The petitioner attributes the failure of maintenance to non-availability of adequate funds due to defaults in payment by the Respondents. In such situation, the Commission is of the view that impact of inefficiency in Obra-A, Obra- B, Harduaganj, Panki and Parichha should be shared by the Petitioner and the Respondents. Half of the increased auxiliary consumption above the benchmarks shall be borne by the Respondents for their failure in timely payment and the rest half shall be afforded by the petitioner for not being diligent in realising its revenue.

In view of the above decision, Auxiliary Consumption as approved by the Commission is given below:

Station	Auxiliary Consumption % (in Regulation)	Aux. consumption % (in Petition)	Aux. consumption % (Approved)
Obra A	10%	12%	11.0%
Obra B	9%	12%	10.5%
Panki	10%	12%	11.0%
Harduaganj	11%	12%	11.5%
Parichha	11%	12%	11.5%

2.5.18. It is further submitted that in light of Regulation 20 of PSERC Tariff Regulations 2005 and as amended from time to time states that while determining cost of generation, Commission shall be guided by Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 as amended from time to time. The Regulation 26 (iv) of CERC Tariff Regulations specify the norms for auxiliary consumption for all thermal generating stations shall be 8.50% except for those mentioned in the said regulations. However, GNDTP having sets of 110 MW/120MW can be compared with Tanda Thermal power station, for which CERC has determined auxiliary consumption to be 12%. Thus it can be seen that the actual auxiliary consumption for GNDTP station for FY 2012-13

being 11.02% is within the range of norm specified as provided in the state regulations benchmarked with CERC Tariff Regulations 2009.

2.5.19. Further, the Hon'ble APTEL in its Judgment dated 18 October 2012, held as follows:

> *"...It appears to us that the Commission is not oblivious of the provisions of the Central Electricity Regulatory Commission Regulations. It is established that the Central Electricity Regulatory Commission Tariff Regulations, 2009 has provided* ***auxiliary consumption at 12%.*** *If the circumstances applicable to Tanda Stations are applicable to and are not different from GNDTP units then there will be not too much of rationale in deviation from the Central Electricity Regulatory Commission norms." (emphasis added)*

2.5.20. From the above reference it can be seen that the norm for auxiliary consumption for GDNTP station of 110 MW/120 MW unit sets should be benchmarked with that applicable for Tanda station at 12% in accordance with the provisions of the State Regulations as linked with the CERC norms.

2.5.21. The actual auxiliary consumption for GNDTP for FY 2012-13 is 11.02% which is lower than norm of 12% as applicable to Tanda Central generating station. Thus, PSPCL prays to Hon'ble Commission to approve the actual auxiliary consumption for GNDTP at 11.02%.

2.6. Hydro Generation

2.6.1. The station wise actual generation from hydroelectric projects of the PSPCL for FY 2012-13 are compared with the previous submissions made to the Hon'ble Commission and the approvals thereon in the table provided below:

Table 12: Hydro Generation for FY 2012-13 (MU)

Sr. No.	Stations	Projected in FY 2012-13 Petition	Approved in TO for FY 2012-13	RE proposed in FY2013-14 petition	Approved in FY2013-14 TO	Actual as per accounts for FY 2012-13
1	Shanan	545.41	528	446	435	439
2	UBDC Stage I & II	378.43	368	327	325	319
3	RSD	1454.69	1360	1401	1386	1428
4	MHP	1112.37	1127	1289	1383	1421
5	ASHP	678.76	658	706	689	639
6	Micro Hydel	9.37	10	8	8	8
8	**Gross own Hydro Generation**	**4178.72**	**4051**	**4177**	**4226**	**4254**
9	Less: Auxiliary Consumption and Transformation Losses	155.17	149	42	34	41

Sr. No.	Stations	Projected in FY 2012-13 Petition	Approved in TO for FY 2012-13	RE proposed in FY2013-14 petition	Approved in FY2013-14 TO	Actual as per accounts for FY 2012-13
10	Less: HP share in RSD				64	61
11	Net Own Hydro Generation (8-9-10)	4023.55	3902	4135	4128	4152
12	PSPCL Share from BBMB excluding Common Pool	3904.83	3905	4074	3901	3836
13	BBMB Common Pool Share	305.43	305	305	305	309
14	Net share from BBMB (12+13)	4210.27	4210	4379	4206	4145
15	Total Net Hydro(11+14)	8233.82	8112	8514	8334	8297

2.6.2. It is submitted that the hydro generation from own sources has been 4254 MU as against 4226 MU approved for the FY 2012-13 in revised estimates.

2.6.3. PSPCL submits that the actual generation from own hydro plant is higher than the approved by the Hon'ble Commission in tariff Order for FY 2012-13, as can be seen from above.

2.6.4. PSPCL further submits that Hon'ble Commission in truing up of FY 2010-11 and FY 2011-12 in tariff Order of FY 2014-15 had approved disincentive corresponding lower generation of thermal stations. However, the same approach has not been adopted for passing on incentive for higher hydro generation than the target stipulated by the Hon'ble Commission. The approach adopted by the Hon'ble Commission for disincentive on energy charges is contrary to the CERC tariff Regulations. However, the CERC Tariff Regulations, 2014 has specified the incentive of 50 paise/kWh for higher generation than normative PLF of 85%.

2.6.5. Accordingly, PSPCL humbly prays to the Hon'ble Commission that the hydro generation incentive be determined based on the approach adopted by the Hon'ble Commission in tariff Order for FY 2014-15.

2.6.6. Further, the breakup of the stage 1 and stage 2 of the UBDC hydro plant generation is as follows:

Table 13: Hydro Generation for UBDC Stage 1 and 2 for FY 2012-13 (MU)

Stations	Generation (MU)
UBDC Stage 1	143
UBDC Stage 2	176
TOTAL	**319**

2.6.7. The following may be noted with respect to the hydro generation from PSPCL plants during the FY 2012-13:

a) The generation from Shanan HEP includes 55 MUs on account of royalty payable to Himachal Pradesh.

b) The station-wise auxiliary consumption for FY 2012-13- is as follows:

Table 14: Auxiliary Consumption of hydro plants for FY 2012-13 (MU)

Stations	Auxiliary Consumption
Shanan	7
UBDC	2
MHP	22
ASHP	5
RSD	5
TOTAL	**41**

2.6.8. PSPCL humbly prays the Hon'ble Commission that net hydro generation for FY 2012-13 be approved at 8297 MU as per the submission which includes net generation from BBMB of 3836 MU.

Table 15: Summary of energy availability from own generation & BBMB share

Energy Sources	Energy available (MU)
Net Thermal Generation	16494
Net own Hydel Generation	4152
Net Share from BBMB (including Common pool of 309 MU)	4145
Total	**24791**

2.7. Power Purchase

2.7.1. The proposed net power purchase during the filing of ARR petition for FY 2012-13 and Revised Estimates during the ARR petition filing for FY 2013-14 and the approvals accorded are compared with actual value of net power purchase made by the PSPCL for FY 2012-13 in the table provided below:

Table 16: Power Purchase for FY 2012-13 (MU)

Description	Projected in FY 2012-13 Petition	Approved in TO for FY 2012-13	RE proposed in FY2013-14 petition	Approved in FY2013-14 TO	Actual as per accounts FY 2012-13
Net Power Purchase	18,917	16544	19779	19564	19,161

2.7.2. It may be noted that the net power purchase requirement for the FY 2012-13 has been lower than the approved values in revised estimates due to reduction in T&D losses

2.8. Energy Balance

2.8.1. The proposed energy balance during the filing of ARR petition for FY 2012-13 and revised estimates during the ARR petition filing for FY 2012-13 and the approvals accorded are compared with the actual energy balance of the PSPCL for FY2012-13 in the table provided following table:

Table 17: Energy Balance for FY 2012-13 (MUs)

Sr. No.	Description	Projected in FY 2012-13 Petition	Approved in TO for FY 2012-13	RE proposed in FY2013-14 petition	Approved in FY2013-14 TO	Actual as per accounts FY 2012-13
	A) Energy Requirement					
1	Metered Sales	24781	23913	25948	25948	25447
2	Sales to AP Consumers	11922	11003	11456	10687	10794
3	Total Sales within the State	36703	34916	37404	36635	36242
4	T&D losses (%)	17.00%	18.00%	17.00%	18.00%	16.77%
5	T&D losses	7518	7664	7661	8042	7302
6	Sale to common pool of consumers	305	305	305	305	309
7	Outside State Sales	111	0	113	53	100
8	Net Requirement	44637	42885	45483	45035	43952
	B) Energy Available					
9	Own Gen. – Thermal	17375	18229	17189	17137	16494
10	Own Gen. – Hydro	4135	3902	4135	4128	4152
11	BBMB Share (Including Common Pool)	4210	4210	4379	4206	4145
12	Purchase (Net)	18917	16544	19779	19564	19161
13	Total Available	44637	42885	45482	45035	43952

2.8.2. For computing energy balance, PSPCL has not considered the RSD HP share in energy requirement and energy available as considered by the Hon'ble Commission in tariff Order for FY 2014-15.

2.8.3. It is submitted that the PSPCL has overachieved the T&D loss target for the FY 2012-13 by 1.23% by achieving a loss level of 16.77% as against the target of 18% given by the Hon'ble Commission for the year.

2.8.4. The PSPCL prays to the Hon'ble Commission to approve the actual energy

balance for the FY 2012-13 as shown above.

2.9. Fuel Cost

2.9.1. The values of actual generation parameters, which are the determinants of the fuel cost incurred by the PSPCL, for the FY 2012-13 are compared with those approved by the Hon'ble Commission in the tariff order for FY 2012-13.

Table 18: Comparison of Fuel Parameters (Approved Vs. Actual) for FY 2012-13

Sr. No.	Description	Approved in TO for FY 2012-13	Actual as per audited data
	Station Heat Rate (kcal/ kwh)		
1 (a)	GNDTP	2825	2820.91
2	GGSSTP	2500	2537.77
3	GHTP	2500	2324
	Specific Oil Consumption (ml/ kWh)		
1	GNDTP	1.00	3.55
2	GGSSTP	1.00	0.47
3	GHTP	1.00	0.27
	Coal transit loss (%)		
1	GNDTP	1.5	2.81
2	GGSSTP	1.5	-0.13
3	GHTP	1.5	2.28
	Price of Coal (Rs./ MT)		
1	GNDTP	3370	3277
2	GGSSTP	3546.44	3572.27
3	GHTP	3438	3365.67
	Price of Oil (Rs./ KL)		
1	GNDTP	48946	47565
2	GGSSTP	42389.52	42656.98
3	GHTP	43539	43553

2.9.2. PSPCL submits that the coal transit losses are higher than the approved by Hon'ble Commission for GNDTP and GHTP however, the losses are negative for GGSSTP. The coal transit losses for past three years are as under:

Table 19: Coal transit losses

Sr. No.	Description	FY 2010-11	FY 2011-12	FY 2012-13
1	GNDTP	-0.15	0.96	2.81
2	GGSSTP	1.14	0.79	-0.13
3	GHTP	1.33	1.46	2.28

2.9.3. From the above, it is observed that the coal transit losses are inconsistent for all three plants. PSPCL submits that the coal transit losses are not within the control of it and attributable to the following reasons:

a) Calibration of measuring instruments- Weighing of coal at two different locations having different calibration of weighing machines lead to an error more than permissible limits.
b) The transit loss occurred because of seasonal variation during the transportation of the coal which changes the moisture content of the coal during the transportation.
c) The transportation of coal happens through open wagon. As soon as the goods are loaded on the wagon, it becomes owner risk and railways disown the responsibility. It is subject to pilferages at all halts, which is beyond the control of railways.
d) During the unloading, small quantities of coal get stuck at the edges of the transport wagons due to moisture and remains undelivered to the plant, contributing to transit losses.

2.9.4. It should be noted from above comparison, that specific oil consumption for the FY 2012-13 are within the limits set by the Hon'ble Commission for GGSSTP and GHTP whereas for GNDTP actual oil consumption for FY 2012-13 is more than that approved by Hon'ble Commission.

2.9.5. Station heat rate for GGSSTP is more than approved by the Hon'ble Commission. However, in case of GNDTP, it is marginally lower than as approved by the Hon'ble Commission in tariff Order for FY 2013-14.

2.9.6. The PSPCL's thermal plant-wise weighted average calorific value of coal and oil for FY 2012-13 has been summarized in the following table.

Table 20: Weighted average calorific value of coal and oil for FY 2012-13

Stations	Weighted Average calorific value of coal approved in FY 2013-14 T.O (Kcal/litre)	Weighted Average calorific value of coal (Kcal/Kg)	Weighted Average calorific value of oil approved in FY 2013-14 (Kcal/litre)	Weighted Average calorific value of oil (Kcal/litre)
GNDTP	4078.00	4041.51	9532.00	9400.00
GGSSTP	4152.02	4053.00	9737.00	9700.00
GHTP	4027.38	4068.00	9506.00	9500.00

2.9.7. With regard to the deviation in technical parameters is concerned, PSPCL submits that the Hon'ble ATE has in the following judgments advised the relaxation of norms required to be done and also in the context of old generating station:

Judgment dated 31 July, 2009 in Appeal No. 42 & 43 of 2008, in the matter of Haryana Power Generation Company Limited v. Haryana Electricity Regulatory Commission. In the above decision, the issue that was raised was that the generating company had claimed the Station Heat Rate of 3450 kCal/kWh for its generating stations at Panipat Units 1 to 4, 2700 kCal/kWh for Panipat Units 5 & 6 and 4200 kCal/kWh for Faridabad Thermal Power Station based on their actual performance, vintage etc. The Hon'ble Tribunal was pleased to, inter-alia, hold as under:

> *"....The State Commission has to balance the interests of the consumers and the generators. If the targets given to the generating company are not achievable, no purpose would be served by setting such targets because such approach would adversely impact the financial position of the generator, which in turn would impact the investment in the electricity industry in the State. On the other hand, if the targets given are too liberal, the cost of power to end user would be higher, which would make the local industry and business uncompetitive. The Tariff Policy also lays emphasis on laying down standard which are achievable and encourage efficient operations. It is essential that the norms laid are not too liberal as to encourage inefficient operations, but at the same time are at least near to those achievable.*
>
> *17. Therefore under the circumstances, it is essential for the State Commission to arrange for a station-wise study to determine the SHR of the power plants of the appellant. The study may be conducted in a time bound manner. If the study indicates substantial variation (say more than 2-3%) than the benchmarks adopted by the State Commission, after adjusting for reasonable deterioration due to elapse of time, may be re-determined by the State Commission.*

Judgment dated 10 April, 2008 in Appeal no. 86 & 87 of 2007, in the matter of by Maharashtra State Power Generation Company Limited v. Maharashtra Electricity Regulatory Commission. Consider the claim of the generating company claiming a higher Station Heat Rate considering the age of the machines etc. the Hon'ble Tribunal, inter-alia, held as under:

> *"If the SHR allowed by the Commission is not achievable then the same could not be in anybody's interest; entity would suffer by not recovering its reasonable cost of supply of the electricity and the consumers would not get the right signal about the pricing of the product they would be using. Determining right price is also essential to send signals to the prospective developers/investors in the sector enabling them to take decision about the investment potential in the sector.*
>
> *Under the circumstance, we feel that the Commission either on its own or through the Appellant engage appropriate independent agency(ies), who can carry out a study in a time bound (preferably within three months) manner to reasonably assess the achievable SHR of the plants owned by the Appellant. Such agency may also be asked to suggest measures to improve the SHRs over a period of time."*

Judgment dated 23 November 2006 in the Appeal No. 129 of 2006, in the matter of Gujarat State Electricity Company Limited v. Gujarat Electricity Regulatory Commission. In the above judgment, the Hon'ble Tribunal while considering the claim of the generating company for allowing relaxed norms and parameters for old and vintage units as compared to net generating units who have not outlived their useful life, the Hon'ble Tribunal, inter-alia held as under:

> *"Point C: Whether the claim of station heat rate should be allowed uniformly? Nextly, the learned counsel for the appellant advanced arguments and contended that the first respondent Commission ought not to have fixed the station heat rate for the vintage generating stations at the same level as applicable to a newer generating station. The older generating stations, by the passage of time, station heat rate of such old generating stations would further fall and deteriorate. The same cannot be held to be a deficiency on the part of the appellant. The problem of higher station heat rate is common to all the generating stations throughout India, which factor has been taken note of by various Regulatory Commissions and the CEA, where the generators have been permitted realistic norms. In fact the CERC has allowed higher station heat rates, so also other regulatory Commissions approved higher station heat parameters. That being a decision, it is contended that there is neither reason nor rhyme for the first respondent to have acted differently."*
>
> *26. There is force in the submission made by the learned counsel for the appellant. Though, in the view of the first respondent Commission, the difference is very narrow but the cumulative effect of all the generating stations has a bearing which should not have been ignored by the first respondent Commission. The contention advanced in this respect deserves to be appreciated and sustained. Point C is answered as above and station heat rate has to be allowed considering the vintage and present condition of the station in view of the CEA recommendations and treatment given by CERC for similarly placed stations under its jurisdiction. We, therefore, order Point 'C' accordingly."*

2.9.8. In light of the above submissions, PSPCL requests the Commission to allow the technical performance of stations at relaxed levels.

2.9.9. The approved values of the fuel cost for the thermal plants of the PSPCL as in the Tariff Order for FY 2012-13 as compared with the actual for the period as shown in the table below:

Table 21: Comparison of Fuel Cost (Approved Vs. Actual) for FY 2012-13 (Rs Crore)

Sr. No.	Description	Approved in FY 2013-14 TO	Actual as per audited accounts
1 (a)	GNDTP Unit I & II	390.55	398.24
1 (b)	GNDTP Unit III & IV		
2	GGSSTP	2090.43	2063.85
3	GHTP	1611.97	1403.71
	Total	4092.95	3865.80

2.9.10. The actual fuel cost for the PSPCL, all thermal plants taken together, works out to Rs. 3865.80 Crore in comparison to Rs. 4092.95 Crore approved by the Hon'ble Commission.

2.9.11. Hon'ble Commission in tariff Order for FY 2013-14 has approved overall fuel cost of Rs. 2.20 per unit however, PSPCL has able to reduce the actual fuel cost to Rs.2.15 per unit for FY 2012-13. As per T.O for FY 2013-14 per unit fuel cost for GNDTP was approved at Rs. 2.39/ kwh reason being lower generation during a year and higher cost of fuel. This showed the efforts has been taken by the PSPCL to operate its generating plant in efficient manner.

2.9.12. PSPCL has considered the cost under the heads of Cost of water, lubricant & consumable stores and Station supplies of Rs. 17.07 Crore in the R&M expenses in accordance with philosophy adopted by the Commission in previous Orders. Also, the fuel expenses during the trail run of Unit 3 & 4 of GNDTP of Rs. 2.36 Crore has not been considered as the same was booked in the capital expenditure in FY 2012-13.

2.9.13. In light of the above submissions, PSPCL requests the Commission to allow the fuel cost of Rs. 3865.80 Crore as per audited accounts for the FY 2012-13.

2.10. Power Purchase Cost

2.10.1. The Hon'ble Commission in the Tariff Order for FY 2012-13 approved a gross power purchase quantum of 20432 MU at a total cost of Rs 7904.89Crore which includes transmission charges amounting to Rs. 830.01Crore payable to PSTCL. It is submitted that the PSPCL during FY 2012-13 has made actual gross power purchase of 19,086 MU at cost of Rs. 8049.10Crore including transmission and associated costs of Rs 830.01Crore payable to PSTCL as provided in the audited accounts for the year.

Table 22: Approved Vs. Actual Power Purchase for FY 2012-13

Description	Approved in FY 2013-14 TO		Provisional for FY 2012- 13	
	MU's	Rs. Crore	MU's	Rs. Crore
Power Purchase	19564	7074.88	19161	6630.97
Add: PGCIL/ Inter-state transmission charges				588.12
Sub-total	19564	**7074.88**	**19161**	**7219.09**
Add: PSTCL/ Wheeling charges within the state		830.01		830.01
Total	**19564**	**7904.89**	**19161**	**8049.10**

2.10.2. The source wise/ plant wise details of power purchase cost from various sources has been summarized in the following table.

Table 23: Source wise/plant wise/project wise details of power purchase of FY 2012-13

Sr. No	Source	Purchase (MU)	External losses (%)	Energy recd. by PSPCL (MU)	FC (Rs. Crore)	VC (Rs. Crore)	Others (Rs. Crore)	Total (Rs. Crore)
1	2	3	4	5	6	7	8	9
A	NTPC							
1	Anta (G/F)	183.00	3.65	176.32	30.19	51.72	0.23	82.14
2	Anta (R/F)	44.39	3.65	42.77	0.00	32.19	0.00	32.19
3	Anta (L/F)	0.00	3.65	0.00	0.00	0.00	0.00	0.00
4	Auraiya (G/F)	180.24	3.65	173.66	36.95	50.59	0.20	87.75
5	Auraiya (R/F)	77.41	3.65	74.59	0.00	67.43	0.00	67.43
6	Auraiya (L/F)	0.00	3.65	0.00	0.00	0.00	0.00	0.00
7	Dadri Gas (G/F)	415.76	3.65	400.59	68.61	117.30	0.00	185.91
8	Dadri Gas (R/F)	109.73	3.65	105.73	0.00	92.82	0.00	92.82
9	Dadri Gas (L/F)	0.03	3.65	0.02	0.00	0.02	0.35	0.37
10	Singrauli	1657.18	3.65	1596.68	86.22	174.30	0.78	261.31
11	Rihand-I	756.78	3.65	729.16	64.35	81.07	0.56	145.99
12	Rihand-II	883.78	3.65	851.52	81.82	96.85	0.21	178.88
13	Rihand-III	79.22	3.65	76.33	17.07	7.01	0.04	24.13
14	Unchahar-I	234.11	3.65	225.57	25.44	56.39	0.16	81.98
15	Unchahar-II	417.35	3.65	402.11	53.20	100.88	0.21	154.29
16	Unchahar-III	125.68	3.65	121.09	20.19	30.51	0.07	50.77
17	Farakka (ER)	111.84	3.65	107.75	10.69	26.16	0.53	37.38
18	Kahalgaon-I (ER)	298.92	3.65	288.01	33.38	61.99	0.94	96.31
19	Kahalgaon-II (ER)	653.05	3.65	629.21	93.10	128.90	0.59	222.59
20	NCTPS- 2C (DADRI II)	101.05	3.65	97.36	14.26	27.37	0.01	41.64
21	IGSTPS Jhajjar (NTPC JV)	22.84	3.65	22.00	8.58	7.74	-0.01	16.31
B	NHPC							
22	Bairasuil	329.26	3.65	317.24	30.53	26.63	0.29	57.45
23	Salal	872.14	3.65	840.31	42.09	41.25	94.57	177.91
24	Tanakpur	67.42	3.65	64.96	8.89	7.29	0.07	16.25
25	Chamera-I	249.02	3.65	239.93	17.52	22.64	0.13	40.30
26	Chamera-II	176.59	3.65	170.14	25.68	24.12	0.10	49.91
27	Uri	407.40	3.65	392.53	37.39	32.18	18.56	88.13
28	Dauli Ganga	136.87	3.65	131.88	20.35	19.50	0.09	39.94
29	Dulhasti	205.92	3.65	198.40	53.61	59.88	10.51	124.00
30	Sewa-II	46.70	3.65	45.00	11.56	10.11	0.95	22.62
31	Chamera-III	66.22	3.65	63.80	14.99	13.26	0.06	28.31
C	NPCIL							
32	NAPP	288.63	3.65	278.10	0.00	71.31	0.54	71.85

Sr. No	Source	Purchase (MU)	External losses (%)	Energy recd. by PSPCL (MU)	FC (Rs. Crore)	VC (Rs. Crore)	Others (Rs. Crore)	Total (Rs. Crore)
33	RAPP-3 &4	806.48	3.65	777.04	0.00	222.79	0.26	223.05
34	RAPP-5 & 6	403.81	3.65	389.07	0.00	138.02	0.02	138.04
D	**OTHER SOURCES (Central Sector)**							
35	NathpaJhakri HEP (SJVNL)	772.15	3.65	743.97	106.74	87.54	19.95	214.23
36	Tehri HEP (THDC)	272.98	3.65	263.02	52.43	68.25	6.40	127.07
37	Koteshwer HEP (THDC)	86.40	3.65	83.25	19.16	18.00	0.00	37.15
38	Durgapur TPS (DVC)	372.15	3.65	358.57	99.32	107.95	0.00	207.26
39	TRADERS (Short Term Power)	4558.23	3.65	4391.85	0.00	1729.42	0.00	1729.42
40	Open Access Chgs. of Traders for short term power		3.65	0.00	64.86	0.00	0.00	64.86
41	Beas Valley	257.35	3.65	247.96	0.00	106.54	0.00	106.54
V	**TRADERS/IPPs (Long Term Power)**							
42	Tala HEP (PTC)	91.14	3.65	87.81	0.00	18.41	0.00	18.41
43	Pragati-III Gas Plant Bawana (PPCL)	98.16	3.65	94.58	47.36	28.49	2.72	78.57
44	Mundra UMPP (CGPL)	1418.41	3.65	1366.64	139.11	212.52	-0.50	351.14
45	Mallana-II HEP (PTC)	169.87	3.65	163.67	0.00	61.66	0.00	61.66
46	Long Term POC (OA)Traders	0.00	3.65	0.00	0.00	0.00	11.32	11.32
47	NVVNL Bundled Power (NTPC Thermal Power + Solar power)	17.44	3.65	16.80	0.00	8.65	0.00	8.65
48	Long Term NRSE Purchase within Punjab	454.00	0.00	454.00	0.00	224.49	0.00	224.49
49	Short Term NRSE Purchase within Punjab	97.55	0.00	97.55	0.00	44.70	0.00	44.70
50	Net Banking with HPSEB,UPCL,J& K & thro. Traders	93.33	0.00	37.24	0.00	43.57	0.00	43.57
51	Open Access Chgs. of Banking	0.00	0.00	0.00	0.00	0.00	31.89	31.89

Sr. No	Source	Purchase (MU)	External losses (%)	Energy recd. by PSPCL (MU)	FC (Rs. Crore)	VC (Rs. Crore)	Others (Rs. Crore)	Total (Rs. Crore)
52	UI	651.34	0.00	651.34	0.00	284.58	0.00	284.58
53	Reactive Charges	0.00	0.00	0.00	0.00	3.49	0.00	3.49
54	UI (Open access)	-1.00	0.00	-1.00	0.00	-1.35	0.00	-1.35
55	**UI (Open access) import**	**75.23**		**75.23**		**0**	**0**	**0**
VI	**Other Charges**							
56	PGCIL	0.00	0.00	0.00	588.12	0.00	0.00	588.12
57	Purchase of RECs for FY 2012-13	0.00	0.00	0.00	0.00	45.08	0.00	45.08
58	Adjustment	0.00	0.00	0.00	0.00	0.00	0.00	0.28
59	**Total Power purchase**	19894	3.68	19161	2023.79	4992.21	202.81	7219.09

2.10.3. There is an increase in actual power purchase cost by 1.82% over the approved power purchase cost for FY 2012-13. The increase is mainly attributable to the increase in price of power from CGS and other sources due to the revision of the tariffs from the CGS plants in accordance with the revised regulations issued by the Hon'ble CERC for the period from FY 2009-10 to FY 2013-14. The same are beyond the control of the PSPCL and may be considered as force majeure events.

2.10.4. As regards the banking agreements with HPSEB, UPCL and J&K, PSPCL has purchased the net energy of 93.33 MU amounting to Rs. 43.57 Crore. Further, PSPCL for compliance of renewable purchase obligation has purchased Renewable Energy Certificates of Rs. 45.08 Crore.

2.10.5. It may also be noted that the intra-state transmission charges at Rs. 830.01crore which has been approved by the Hon'ble Commission for PSTCL for the FY 2012-13 has been considered in the power purchase cost. Accordingly, the PSPCL prays to the Hon'ble Commission to approve the cost of power purchase of Rs. 7219.09 Crore for FY 2012-13 as per audited annual accounts for the year.

2.11. Employee Cost

2.11.1. The Commission approved employee cost of Rs. 3536.59 Crore for FY 2012-13 as per revised estimates in Tariff Order for FY 2013-14. The actual employee expenses incurred during the period FY 2012-13 have been Rs. 3868.40 Crore as per the audited annual accounts. The break-up of actual employee cost for FY 2012-13 is summarized in the following table.

Table 24: Actual Employee Costs for FY 2012-13 (Rs Crore)

Sr. No.	Item	Amount (Actual)
1	Salaries & Allowances	
2	Basic Pay	1147.11
3	Overtime	10.40
4	Dearness Allowance	756.27
5	Fixed medical Allowance	30.28
6	Conveyance Allowance	38.41
7	Other Allowances	162.25
8	Bonus/ Generation Incentive	83.41
9	Medical Expenses Reimbursement	14.76
10	Total of Salaries & allowances	2242.89
11	**Terminal Benefits**	
12	Earned Leave Encashment	141.34
13	Gratuity (including arrear)	211.50
14	Workman's compensation	0.25
15	Arrear of Pay	210.07
16	Total Terminal Benefits	563.16
17	**Pension Payments**	
18	Basic Pension	0.00
19	Dearness pension	886.98
20	Dearness Allowance	0.00
21	Any other expense	102.98
22	Total Pension payments	989.96
23	**Total Expenses**	**3796.01**
24	Less: Amount capitalized	111.23
25	Net amount	3684.78
26	Prior Period*	0.00
27	Add: BBMB share	183.62
28	**Net Employee's Cost**	**3868.40**

Note: Employee Costs relating to Prior Period has been considered separately under Prior Period Expenses

2.11.2. PSPCL submits that the Hon'ble Commission in tariff Order of FY 2013-14 has approved the amount of arrears of pay revision of Rs. 211.82 Crore for FY 2012-13. PSPCL submits that it has paid the amount of arrears of pay revision of Rs. 210.07 Crore in FY 2012-13. PSPCL humbly request the Hon'ble Commission to approve the same.

2.11.3. PSPCL submits that the Hon'ble Commission has been disallowing the employee costs on the grounds that the erstwhile PSEB and PSPCL have not taken adequate steps to control the same. It was further pointed out by the Hon'ble Commission that overall productivity of the employees is not demonstrated by PSPCL.

2.11.4. In this regard, PSPCL submits that it has taken initiatives to reduce the employee cost as well increase the productivity and efforts taken by PSPCL have also been recognized by the Hon'ble Commission in tariff Order of FY 2013-14.

2.11.5. The PSPCL further submits to the Hon'ble Commission that it is a State Government owned entity and is liable to follow the statutory provisions of the rules and regulations as laid down by the State Government. Accordingly, any increase in employee cost due to revision in DA, arrears of pay, etc have to be borne by PSPCL and is beyond its control.

2.11.6. Further, PSPCL submits that it is not possible either to deny the payment of the employees cost or otherwise provide any less favorable terms and conditions to the employees. The Hon'ble Supreme Court in the case of West Bengal Electricity Regulatory Commission vs. CESC Ltd, (2002) 8 SCC 715 has held that the utility needs to comply with the lawful agreements entered into with the employees and the same cannot be avoided or wriggled out by the utility. Hon'ble Appellate Tribunal in the Judgment dated 18 October, 2012 and 11 September, 2014 has also considered the same aspect and directed the Hon'ble Commission to do so.

2.11.7. PSPCL prays the Hon'ble Commission that the employee cost for FY 2012-13 be approved as per audited annual accounts for the year.

2.12. Repair & Maintenance Expenses

2.12.1. The Hon'ble Commission had approved R&M expenses at Rs. 539.82 Crore for FY 2012-13 in the Tariff Order for FY 2013-14 based on normative basis

2.12.2. The actual R&M expenses for the FY 2012-13 are Rs 359.06 Crore as per the audited annual accounts for the year. The details of actual R&M cost for FY 2012-13 has been summarized in the following table.

Table 25: Actual Repair and Maintenance Expenses for FY 2012-13 (Rs. Crore)

Sr. No.	Item	Amount (Rs. Crore)
1	Plant& machinery	255.92
2	Building	11.28
3	Hydraulic works & civil works	6.80
4	Line cable & network	43.01
5	Vehicles	1.94
6	Furniture & fixtures	0.03
7	Office equipments	0.30
8	Operating expenses	17.07
9	Total	336.35

Sr. No.	Item	Amount (Rs. Crore)
10	Add: BBMB share	26.57
11	Total expenses	362.92
12	Less: R&M Expenses Capitalized	3.86
13	Net expenses	359.06
14	Add prior period*	0.00
15	R & M for asset addition during year	0.00
16	**Total expenses charged to revenue**	**359.06**

Note: Repair & Maintenance Expenses relating to Prior Period have been considered separately under Prior Period Expenses

2.12.3. PSPCL has also considered the fuel cost under the heads of Cost of water, lubricant & consumable stores and Station supplies of Rs. 17.07 Crore in the R&M expenses in accordance with the philosophy adopted by the Commission in previous Orders.

2.12.4. PSPCL submits that Regulation 28 of PSERC Tariff Regulations, 2005 allows the R&M expenses on normative basis only. However, Hon'ble Commission while determining the R&M expenses for FY 2011-12 in tariff Order of FY 2014-15 has approved the R&M expenses as per audited accounts. The Hon'ble Commission while approving the R&M expenses has taken an inconsistent approach, namely wherever, the actual is more than the normative, the normative is adopted and wherever the actual is less than the normative, being lesser, the actual is adopted. The methodology adopted of allowing the actual or normative whichever is less, is an incorrect methodology and contrary to concept of normative wherein the benefit for overachievement should remain with the utility and decision of Hon'ble ATE in the Judgment dated 18 October, 2012.

2.12.5. Hon'ble Commission at time of review of FY 2012-13 in its tariff Order of FY 2013-14 has recognized that the approach adopted for allowing R&M expenses is not correct. The relevant extract of the Order is as under:

"3.11.2 ... ...

In the previous years, the Commission had allowed actual or normative expenses whichever are less holding that normative expenses were the maximum allowable expenses and could not be allowed over and above the claim. However, Hon'ble APTEL in its judgment dated 18.10.2012 passed in petition nos.7, 46 and 122 of 2011 filed by PSPCL against the Tariff Orders for FY 2009-10, FY 2010-11 and FY 2011-12 had observed that the ***PSERC Tariff Regulations provide for allowing R&M and A&G expenses on normative basis and not on normative or actual, whichever is less. " (emphasis added)***

2.12.6. In view of the above, PSPCL submits R&M expenses computed on the base R&M expenses for FY 2011-12 which was determined on normative basis as under:

Table 26: Repair and Maintenance Expenses on normative basis for FY 2012-13 (Rs. Crore)

Sr. No.	Item	Amount (Rs. Crore)
1	Base R&M Expenses for FY 2011-12	458.28
2	WPI (%)	7.36%
3	R&M expenses applying WPI	492.01
4	R&M expenses on assets additions during the year	12.14
5	**Total R&M Expenses for FY 2012-13**	**504.15**

2.12.7. PSPCL humbly request the Hon'ble Commission to approve the above R&M expenses of Rs. 504.15 Crore for FY 2012-13 as the benefit for overachievement should remain with the utility (PSPCL).

2.13. Administrative & General Expenses

2.13.1. The Hon'ble Commission had approved A&G expenses at Rs. 133.06 Cr for FY 2012-13 in the Tariff Order for FY 2013-14. The actual A&G expenses for the FY 2012-13 are Rs. 112.73 Cr as per the audited annual accounts for the year. The details of the actual A&G expenses for FY 2012-13 is summarized below:

Table 27: Actual Administrative & General Expenses for FY 2012-13 (Rs. Cr)

Sr. No.	Item	Amount
1	Rent Rates & taxes	4.04
2	Insurance	0.64
3	Telephone, postage & Telegram	4.81
4	Consultancy Fee	0.30
5	Technical Fee	0.00
6	Other Professional Charges	1.83
7	Conveyance & Travelling	26.19
8	Electricity & Water	14.86
9	Other	58.80
10	Freight	8.51
11	Other Material related expenses	10.52
12	Total Expenses	130.50
13	Add: BBMB share	2.23
14	Total Expenses	132.73
15	Less: Capitalised	20.00
16	Net Expenditure	112.73
17	Add Prior Period*	0.00
18	A&G for Asset Addition During the Year	0.00
19	**Total**	**112.73**

Note: Administrative & General Expenses relating to Prior Period have been considered separately under Prior Period Expenses

2.13.2. PSPCL submits that Regulation 28 of PSERC Tariff Regulations, 2005 allows the A&G expenses on normative basis only. However, Hon'ble Commission while determining the A&G expenses for FY 2011-12 in tariff Order of FY 2014-15 has approved the A&G expenses as per audited accounts. The Hon'ble Commission while approving the A&G expenses has taken an inconsistent approach, namely wherever, the actual is more than the normative, the normative is adopted and wherever the actual is less than the normative, being lesser, the actual is adopted. The methodology adopted of allowing the actual or normative whichever is less, is an incorrect methodology and contrary to concept of normative wherein the benefit for overachievement should remain with the utility and decision of Hon'ble ATE in the Judgment dated 18 October, 2012.

2.13.3. Hon'ble Commission at time of review of FY 2012-13 in its tariff Order of FY 2013-14 has recognized that the approach adopted for allowing A&G expenses is not correct. The relevant extract of the Order is as under:

> *"3.12.2 ... ...*
> *In the previous years, the Commission had allowed actual or normative expenses whichever are less holding that normative expenses were the maximum allowable expenses and could not be allowed over and above the claim. However, Hon'ble APTEL in its judgment dated 18.10.2012 passed in petition nos.7, 46 and 122 of 2011 filed by PSPCL against the Tariff Orders for FY 2009-10, FY 2010-11 and FY 2011-12 had observed that the* ***PSERC Tariff Regulations provide for allowing R&M and A&G expenses on normative basis and not on normative or actual, whichever is less. " (emphasis added)***

2.13.4. In view of the above, PSPCL submits the A&G expenses computed on the base A&G expenses for FY 2011-12 which was determined on normative basis as under:

Table 28: Administration and General Expenses on normative basis for FY 2012-13 (Rs. Crore)

Sr. No.	Item	Amount (Rs. Crore)
1	Base A&G Expenses for FY 2011-12	105.40
2	WPI (%)	7.36%
3	A&G expenses applying WPI	113.16
4	A&G expenses on asset addition during the year	2.79
5	Licence fees, fees for determination of tariff	8.83
6	**Total A&G Expenses for FY 2012-13**	**124.78**

2.13.5. As per Regulation 28(2)(b) of the PSERC Tariff Regulations, 2005 as amended from time to time, PSPCL has considered expenditure on account of licence fee, initial or renewal, fee for determination of tariff and audit fee, over and above the

normative A&G expenses.

2.13.6. PSPCL humbly request the Hon'ble Commission to approve the above A&G expenses for FY 2012-13.

2.14. Depreciation

2.14.1. The Hon'ble Commission had approved depreciation charges at Rs. 768 Core for FY 2012-13 in the Tariff Order for FY 2013-14. However, the actual depreciation cost for the FY 2012-13 as per the audited annual accounts is slightly higher at Rs. 796.32 Crore. The function-wise detail of the assets as on 1 April 2012 and the depreciation charged during the year is summarized in the table below:

Table 29: Depreciation Charges for FY 2012-13 (Rs. Crore)

Sr. No.	Item	Assets as on 01.04.2012	Depreciation for FY 2012-13
1	Thermal	12444.96	178.07
2	Hydel	10781.36	236.88
3	**Total Generation**	**23006.32**	**414.95**
4	Distribution	14885.40	369.42
5	Others	1324.17	11.95
6	**Total**	**39215.89**	**796.32**

Note: Depreciation Charges relating to Prior Period has been considered separately under Prior Period Expenses.

2.14.2. The asset-wise details Gross Fixed Asset and Net Fixed Asset as on 31 March 2013 and the depreciation charged during the year for PSPCL as per the audited annual accounts for FY 2012-13 has been summarized below:

Table 30: Asset-wise bifurcation of Asset base and depreciation charged

Sr. No.	Asset Name	Gross Fixed assets as on 31st March, 2013	Depreciation charged during the FY 2012-13	Net Fixed Assets as on 31st March, 2013
1	Land and land rights	18924.20		18924.81
2	Buildings	1677.83	42.05	1690.01
3	Hydraulic Works	4365.33	210.53	4360.52
4	Other Civil Works	94.43	3.57	94.56
5	Plant and Machinery	8504.31	324.72	9673.98
6	Lines Cable and Network	5519.39	210.29	6262.20
7	Vehicles	25.25	0.44	25.91
8	Furniture and Fixtures	14.29	0.57	18.96
9	Office Equipments	43.54	4.18	47.49
10	**Total**	**39168.57**	**796.34**	**41098.45**
11	Capital expenditure resulting in Assets not belonging to Corp.	3.41	0.06	3.41

Sr. No.	Asset Name	Gross Fixed assets as on 31st March, 2013	Depreciation charged during the FY 2012-13	Net Fixed Assets as on 31st March, 2013
12	Spare Units/ Service Units	7.28	0.05	7.28
13	Capital Spares at Generating Stations	36.63	1.38	42.22
14	**Total**	47.32	1.49	52.92
15	**Grand Total**	**39215.89**	**797.83**	**41151.36**
16	**Less: Capitalization**		1.50	
17	**Grand total**		**796.32**	

2.14.3. The PSPCL prays to the Hon'ble Commission to approve the Depreciation Charges for FY 2012-13 as per audited accounts as proposed above.

2.15. Interest & Finance Charges

2.15.1. The Hon'ble Commission had approved interest and finance charges at Rs. 1760.58 Crore for FY 2012-13 in the Tariff Order for FY 2013-14. Whereas, the interest and finance charges for the FY 2012-13 are Rs. 2429.79 Crore as per the audited annual accounts for the year.

Interest on Loans (other than WC and GoP Loans)

2.15.2. The Hon'ble Commission had approved an interest of Rs. 777.14Crore on long-term loans (excluding Working Capital and GoP Loans) for FY 2012-13 in the Tariff Order for FY 2013-14 against the proposed value of Rs. 916.48Crore by the PSPCL. The PSPCL now submits that the interest on the long-term debt taken by PSPCL for the FY 2012-13 is Rs. 1203.69Crore. The details of loans other than Working Capital and GoP loans and the interest accrued thereon for the FY 2012-13 is compared with the values approved by the Hon'ble Commission in table below:

Table 31: Interest on Loans for FY 2012-13 (Rs. Crore)

Sr. No.	Particulars	Balance as on 01/04/12	Receipts During FY 2012-13	Repayments During FY 2012-13	Closing Balance 31/03/13	Interest For FY 2012-13
1	As per data furnished in ARR Petition for FY 2012-13 (other than WCL and GoP Loans)	7911.02	1440.26	866.19	8485.09	916.48
2	As approved by the Commission for FY 2012-13 in tariff Order for FY 2013-14	6859.68	1050.08	866.19	7043.57	777.14
3	**Actual Now Being Submitted by PSPCL**	**10308.32**	**864.72**	**882.40**	**10290.64**	**894.54**

2.15.3. The increase in the opening balance of loan was primarily because of fact that short term loans and medium term loans outstanding as on 16 April, 2010 were repaid and new loan for a longer period were raised in subsequent year as per statutory notification of Government of Punjab.

2.15.4. In view of the above, it is submitted that the interest on loans, other than working capital and GoP loans as per the audited annual accounts for FY 2012-13 at Rs.894.54 Crore be approved by the Hon'ble Commission.

2.15.5. Further, PSPCL has also paid interest amounting to Rs. 23.27Crore on State Government loans during FY 2012-13 as per the audited annual accounts for the year and same is proposed to be approved by the Hon'ble Commission.

Interest on Short-term loans

2.15.6. PSPCL is dependent on short-term loans for meeting its working capital requirements. The interest on short-term borrowings for the FY 2012-13 is Rs. 1340.55 Crore as per the audited annual accounts for the year.

2.15.7. PSPCL submits that the Hon'ble Commission has approved the interest on working capital of Rs. 383.84 Crore on normative basis for FY 2012-13 in the Tariff Order for FY 2013-14 as per the Regulation 30 of the PSERC Tariff Regulations. The working capital requirement was assessed at Rs. 3414.93Crorefor FY 2012-13.

2.15.8. PSPCL further submits that the short-term borrowings by the PSPCL are higher than the normative working capital requirements as determined by the Hon'ble Commission due to the following reasons:

a) Regulatory disallowances on account of high employee costs;
b) Regulatory disallowances in fuel cost and power purchase cost;
c) Regulatory disallowances in interest & finance charges on accounts of assessed diversion of funds;
d) Non-refund of interest payment by the GoP leading to cash flow issues further leading to increased dependence on short-term borrowings.

2.15.9. PSPCL further submits that it has been under a severe financial crunch and required to take loans and advances to meet its deficit revenue requirements and meeting its statutory payments. PSPCL is not in position to meet its costs and expenditure from the tariff. PSPCL has a total working capital loan of about Rs. 10819.65 Crore as on 1 April, 2012. The working capital requirement computed on the normative basis is not sufficient to meet the requirement, hence the interest charges paid by PSPCL on the working capital loans need to be allowed.

2.15.10. The position of short-term loans availed by the PSPCL and the interest accrued

thereon as per the audited annual accounts for FY 2012-13 has been summarized in the following table.

Table 32: Interest on Short-term Loans for FY 2012-13 (Rs. Cr)

Particulars	Balance as on 01/04/12	Receipts During FY 2012-13	Repayments During FY 2012-13	Closing Balance 31/03/13	Interest For FY 2012-13
Working Capital Loan	10819.65	9197.82	8176.04	11841.43	1340.55

2.15.11. In view of these considerations, PSPCL humbly request the Hon'ble Commission to approve the Interest on working capital loan as per audited accounts.

Interest on GP Funds

2.15.12. The interest on GP funds for FY 2012-13 is at Rs. 181.18Croreas per the audited annual accounts for the year. The interest on GPF is compared with the values previously approved by the Hon'ble Commission in the table provided below:

Table 33: Interest on GPF: Approved Vs. Actual (Rs. Crore)

Description	Proposed as in Petition for FY14	Approved in FY 2013-14 TO	Proposed as per audited annual Accounts
Interest on GPF	185	195	181.18

2.15.13. The PSPCL prays to the Hon'ble Commission to approve the interest on GPF as per the audited annual accounts as proposed above.

Finance Charges

2.15.14. PSPCL has incurred finance charges other finance charges totaling Rs. 155.95 Crore during the FY 2012-13 as per the audited Annual Accounts for the year, which includes payment made towards guarantee fees of Rs. 155.95 Crore.

Table 34: Finance Charges: Approved Vs Actual (Rs. Crore)

Sr. No.	Description	Proposed as in Petition for FY14	Approved in TO for FY 2013-14	Proposed as per audited annual accounts
1	Finance Charges	170	81.51	155.95

2.15.15. PSPCL submits that the increase in the guarantee fees as against the approved figure of Rs. 88.8 Crore is primarily on account of the fact that by virtue of the statutory notification of Government of Punjab, short term loans and medium term loans outstanding as on 16 April, 2010 were repaid and new loan for a longer period were raised which attracted the guarantee fee of 2%. As the loans have been converted into long term loans, PSPCL has no control over the guarantee fees.

2.15.16. The PSPCL humbly prays to the Hon'ble Commission to approve the finance and

other charges at Rs. 155.95 Crore as per the audited annual accounts for the year for final truing-up for the year.

Interest on Consumer Security Deposit

2.15.17. PSPCL submits that interest is payable to the consumers on the security deposits as per PSERC (Electricity Supply Code and Related Matters) Regulations, 2007. The interest on Consumer Security Deposits for the FY 2012-13 as per the audited Annual Accounts for the year is at Rs. 126.22 Crore. The same is compared with the past approvals below:

Table 35: Interest on Consumer Security Deposit: Approved Vs. Actual (Rs. Crore)

Description	Proposed as in Petition for FY14	Approved in TO for FY 2013-14	Actuals per audited annual accounts
Interest on Consumer Security Deposit	100	100	126.22

2.15.18. The interest on Consumer Security Deposit is as per the audited annual accounts of the PSPCL for FY 2012-13. It is prayed to the Hon'ble Commission that the amount as per audited annual accounts be approved for final truing up for the year.

Capitalization of Interest & Finance Charges

2.15.19. The capitalization of interest and finance charges for FY 2012-13 as per the audited Annual Accounts for the year is at Rs. 295.65 Crore. The same is compared with the past approvals below:

Table 36: Capitalization of Interest: Approved Vs. Actual (Rs. Crore)

Sr. No.	Description	Proposed as in Petition for FY14	Approved in FY 2013-14 TO	Actualas per audited annual accounts
1	Capitalization of Interest	66.37	72.61	295.65

2.15.20. The capitalization of the interest is as per the audited Annual Accounts of the PSPCL and it is prayed to the Hon'ble Commission that same be approved now.

2.15.21. The overall interest and finance charges being proposed for FY 2012-13 as per the audited annual accounts for the year are summarized below:

Table 37: Interest &Finance Charges, FY 2012-13 (Rs. Crore)

Sr. No.	Description	Proposed as per audited annual accounts
1	Interest on Long term Loans (Non-SLR, LIC, REC,PFC, CSS, Commercial bank))	894.54
2	Interest on GOP Loans	23.27
3	Interest on Short-term Loans	1340.55

Sr. No.	Description	Proposed as per audited annual accounts
4	Interest on GP Funds	181.18
5	Guarantee fees)	155.95
6	Interest on Consumer Security Deposit	126.22
7	Others bank charges and interest charges	3.73
8	*Less: Capitalization of Interest*	*295.65*
9	**Total**	**2429.79**

Note: Interest & Finance Charges relating to Prior Period has been considered separately under Prior Period Expenses

2.15.22. PSPCL humbly prays the Hon'ble Commission that the total Interest & Finance Charges for the FY 2012-13 at Rs. 2429.79 Crore as per actual, in accordance with the audited annual accounts for the year be approved by the Hon'ble Commission.

2.16. Other Debits, Extraordinary Items

2.16.1. The actual expenditure incurred under the head Other Debits & Extraordinary Items during FY 2012-13 as per the audited annual accounts for the year has been summarized in table below:

Table 38: Other Debits & Extraordinary Items for FY 2012-13 (Rs. Cr)

Sr. No.	Description	Amount
1	Materials cost variance	0.00
2	Bad & Doubtful Debts Written Off/ Provided for	7.81
3	Miscellaneous losses and write offs	7.75
4	Extraordinary debits	0.04
5	Loss on sale of Assets-Plant & Machinery	3.21
6	**Total**	**18.81**

2.16.2. The PSPCL proposes Rs. 18.81 Crore as per the audited annual accounts against Other Debits and Extraordinary Items and it is prayed to the Hon'ble Commission that the same be approved for the purpose of final true-up for FY 2012-13.

2.17. Prior Period Income/ Expenses

2.17.1. Prior Period Items are defined as those items which arise on account of retrospective changes in the basis of accounting for previous years, short or excess provision made, waiver of any liability relating to revenue expenses of past years is being treated as prior period income and vice-versa. As per the audited annual accounts for FY 2012-13, there is a net Prior Period Expense of Rs. 43.25 Crore, the break-up of which is elaborated in the table below:

Table 39: Prior period Income/Expenses for FY 2012-13 (Rs. Crore)

Sr. No.	Description	Amount
1	Income relating to previous year	
a)	Sale of Power	1.76
b)	Fuel Relating Gains	3.86
c)	Excess provision for depreciation	7.05
d)	Excess provision for Interest & Finance charges	8.93
e)	Other excess provision	1.10
f)	Other income	13.56
g)	Interest income for prior periods	0.00
	Sub-total (1)	**36.26**
2	Prior Period Expenses/ Losses	
a)	Purchase of Power	48.15
b)	Operating expenses	1.02
c)	Employee Costs	9.20
d)	Depreciation un-provided in previous years	20.86
e)	Interest & Finance Charges	0.19
f)	Administrative Expenses	0.14
g)	Freight & other purchase related expenses	-0.04
h)	**Sub-total**	**79.51**
i)	Net prior period Credit/ (Charges)	(43.25)

2.17.2. PSPCL humbly submits that it has claimed Rs. 43.25 Crore as prior period expenses for FY 2012-13. It mainly comprises of purchase of power amounting to Rs. 48.15Crore, prior period depreciation un-provided in previous years of Rs. 20.86 Crore and employee expense of Rs 9.20 Crore .

2.17.3. PSPCL humbly prays to Hon'ble Commission to approve net prior period charges of Rs. 43.25 Crore for purpose of final truing-up for FY 2012-13 as per audited annual accounts.

2.18. Non-tariff Income

2.18.1. The break-up actual other income (Non-tariff income) of the PSPCL for the FY 2012-13 as per the audited annual accounts for the year has been provided in the following table.

Table 40: Other Income for FY 2012-13 (Rs. Cr)

Sr. No.	Description	Amount
1	Meter/service rent	93.28
2	Late payment surcharge	199.42
4	Misc. receipts	218.88

Sr. No.	Description	Amount
5	Misc. charges (except PLEC)	35.05
6	Wheeling charges	337.94
7	Interest on staff loans & advance	85.73
8	Income from trading	37.65
9	Income staff welfare activities	0.05
10	Excess on verification	0.00
11	Investments & bank balances	64.99
12	Gain on sale of asset	0.02
13	**Total income**	1073.01
14	Add: BBMB Income	**5.17**
15	**Total non tariff income**	**1078.18**
16	Less: Late Payment Surcharge	199.42
17	**Net Non Tariff Income**	**878.76**

2.18.2. The meter rent and services mentioned in the above table does not include the meter rent and services charges of Rs. 19 Crore of DS consumers and Rs. 9 Crore of Agriculture consumers received through the subsidy from the Government of Punjab.

2.18.3. PSPCL prays to the Hon'ble Commission to not to consider the amount against the Late Payment Surcharge as a part of the Non-Tariff Income for the purpose of truing-up for FY 2012-13. Further, PSPCL submits that the interest on working capital is allowed on normative basis which is lower and does not include the actual interest which PSPCL has to fund on account of late payment. Thus, when the late payments are received from the consumers, the loans taken to fund the gap and the delay in the receipt in payment is to be account and the same is not allowed in the revenue requirements. However, when the consumer pays the late payment surcharge for the delay in the payment, instead of the same being to the income to set off the costs incurred by PSPCL, the late payment surcharge is included in the non-tariff income to reduce the revenue requirements. There is no compensation to the PSPCL on account of interest accrued on delayed payments against bills issued to the consumer. Accordingly, considering the Late Payment Surcharge as Non-Tariff/ Other Income adversely impacts the cash flow position of the PSPCL.

2.18.4. Hon'ble ATE in Judgment dated October 4, 2007 in Appeal No. 223 of 2006 in the matter of M.P. Electricity Consumers' Society C/o AIMO (MPSEB), v/s Madhya Pradesh Poorva/Madhya/Paschim Kshetra Vidyut Vitaran Companies, Madhya Pradesh Electricity Regulatory Commission, Govt. of Madhya Pradesh through Principal Secretary has held that the delayed surcharge revenue shall not be considered. The relevant extract of Judgment in as under:.

"13. On a consideration of contentions of all parties, we are inclined to agree with the decision of the Commission to not include delayed surcharge revenue in the ARR in view of the fact that the working capital amount has been reduced to the bare minimum, 100% collection is not happening as of now, and therefore, to meet its cash requirements, the Discoms will have to borrow from Banks to compensate for the outstanding payments from consumers."

2.18.5. Several other SERCs and utilities also follow the same approach with respect to income from late payment surcharge. The excerpts from relevant regulations/ orders has been summarized below:

State	Clause No	Relevant extract
Madhya Pradesh State Regulatory Commission	Clause No 2.42 of Terms and Conditions for determination of tariff for supply and wheeling of electricity and methods and principles for fixation of charges Regulation 2009	The late payment surcharge shall not be considered as income for the purpose of determination of gap between Annual Revenue Requirement and Tariff and Other Income.
Madhya Pradesh	APTEL Judgment against Appeal No. 223 of 2006	On a consideration of contentions of all parties, we are inclined to agree with the decision of the Commission to not include delayed surcharge revenue in the ARR in view of the fact that the working capital amount has been reduced to the bare minimum, 100% collection is not happening as of now, and therefore, to meet its cash requirements, the Discoms will have to borrow from Banks to compensate for the outstanding payments from consumers.
Delhi Electricity Regulatory Commission	Clause No. 5.35 of Terms and Conditions for determination of wheeling tariff and retail supply tariff Regulation 2011	All incomes being incidental to electricity business and derived by the Licensee from sources, including but not limited to profit derived from disposal of assets, rents, net late payment surcharge (late payment surcharge less financing cost of late payment surcharge), meter rent (if any), income from investments, income on investment of consumer security deposit and miscellaneous receipts from the consumers shall constitute Non-Tariff Income of the Licensee:
NDPL, New Delhi	APTEL Appeal No 153 of 2009	Commission: As regards the delayed payment surcharge collected by the Petitioner during the year, the Commission is of the opinion that there is a financing cost associated with the delayed payment surcharge. Therefore, while computing the delayed payment surcharge, the Commission has deducted the carrying cost of financing the same @ 9% per annum. APTEL Judgment: The financing cost of outstanding dues, i.e. the entire principal amount, should be allowed and it should not be limited to late payment surcharge amount alone. While fixing the interest rate, the State Commission should have considered the

State	Clause No	Relevant extract
		prevalent SBI prime lending rate.
Bihar Electricity Regulatory Commission	Tariff Order for FY 2011-12	BSEB submitted that the DPS for delayed or non-payment of dues by sundry debtors for sale of energy has been treated as accrued to the extent of certainty of its realization. Accordingly only 5% of the total DPS charge has been considered as realizable from the consumer during the year. However, the total amount (i.e. 100%) of DPS has been shown as recoverable from consumers in consumer ledger maintained at field accounting unit whereas 95% of the same will be taken into accounts in the year of its realization. Commission's View: The Commission agrees with the methodology adopted by BSEB to compute non-tariff income. At the same time, the Commission feels that it is necessary to adjust some components of non-tariff income based on recent developments in the sector which do appropriately reflect the past trend. Accordingly the Hon'ble BERC has approved Late payment surcharge (on basis of Collection) as proposed by BSEB.

In view of the above it is prayed that the Late Payment Surcharge may not be considered by the Hon'ble Commission for determining the Revenue Gap for each of the years under consideration.

2.19. Subsidy

2.19.1. As per the Tariff Order for FY 2012-13 the total subsidy receivable from the State Government for the FY 2012-13 was Rs. 5511 Crore while the PSPCL has actually received only Rs. 5059.4 CroreHowever, the actual subsidy requirement against sale of power to DS SC Consumers, DS Non-SC BPL and AP Consumers is at Rs 5581.3 Crore for the FY 2012-13.

2.19.2. The computation of subsidy receivable during the year has been summarized in the following table:

Table 41: Revenue/ Tariff Subsidy Receivable FY 2012-13 (Rs. Cr)

Sr. No.	Description	No of Consumers	Consumption (MU)	Revenue Required			Revenue actually receivable from consumers (Rs Cr)	Amount of subsidy due from GOP (Rs Cr)	Amount of subsidy received from GOP (Rs Cr)	Amount of subsidy received from GOP excess (+)/short (-) (Rs Cr)
				Energy Charges (Rs Cr)	Meter rental & service charges (Rs Cr)	Total (Rs Cr)				
1	AP Consumers	1191407	10779.0	4597.3	9.0	4606.3	0.0	4606.3		
2	Scheduled Castes DS Consumers	1072767	1305.4	567.8	18.2	585.9	0.0	585.9		
3	Non- SC BPL DS Consumers	73357	70.6	30.2	1.3	31.5	0.0	31.5		
4	Subsidy payable on account of waiver of bill of DS consumers of flood affected villages			357.6.		357.6	0.0	357.6	5059.4	-521.9
	Total	2337531	12155.0	5552.8	28.5	5581.3	0.0	5581.3	5059.4	-521.9

2.19.3. The total amount of revenue subsidy received during FY 2012-13 is Rs. 5059.4 Crore against the total subsidy receivable of Rs. 5581.3 Crore for the year leading to a short of Rs. 521.9 Crore in receipt of subsidy.

2.20. Return on Equity

2.20.1. The Hon'ble Commission has approved a return on equity for FY 2012-13 at the rate of 15.5% worked out at Rs. 942.62 Cr on an equity base of Rs. 6081.43 Cr.

2.20.2. PSPCL submits that it is facing immense cash crunch due to untimely subsidy payments from the GoP and huge disallowances against actual expenses being incurred by it. In order to achieve the desired operational and financial outcomes/ efficiencies that the Hon'ble Commission has directed the PSPCL to achieve, it is essential for the PSPCL to make necessary investments in the Generation as well as the Distribution business on a year on year basis.

2.20.3. The equity base as on 31 March, 2012 as per the audited annual accounts for FY 2012-13 is Rs. 6081.43 Cr. Accordingly, PSPCL proposes application of a rate of 15.5% (net) on the equity base for computation of RoE. The RoE proposed by PSPCL and approved by Hon'ble Commission in accordance with the above is provided in the table below:

Table 42: Proposed Vs. Approved Return on Equity for FY 2012-13 (Rs. Cr)

Description	Approved	Proposed	Remarks
Return on Equity	942.62	942.62	Calculated based on 15.50% rate on Government equity holding of Rs 6081.43 Cr. Additions of assets would be funded through debts

2.20.4. The PSPCL prays to the Hon'ble Commission to reconsider its approach on allowing Return on Equity to the PSPCL and approve the same at the proposed value of Rs. 942.62 Crore as shown in the table above.

2.21. Revenue from sale of power

2.21.1. The Hon'ble Commission had revised the revenue from sale of power for the FY 2012-13 at Rs. 19329.38 Crore in the Tariff Order for FY 2013-14. The revenue from sale of power for the FY 2012-13 as per the audited annual accounts is at Rs. 18725.63 Crore (including Rs. 5225.82 Crore subsidy receivable on accrual basis) for the year. The category wise comparison of approved vs. actual revenues and sales for the year are compared in the table provided below:

Table 43: Approved Vs. Actual Revenues for FY 2012-13 (Sales in MU, Amount in Rs. Crore)

Sr. No.	Description	Approved in tariff Order FY 2013-14		Actual as per account	
		Sale	Amount	Sale	Amount
1	Domestic	9535	4573.61	9503.86	3926.27
2	Non-Residential Supply	2902	1749.91	2790.29	1646.34
3	Public Lighting	146	88.04	148.28	103.22
4	Industrial Consumers				
a)	Small Power	917	467.67	903.10	432.28
b)	Medium Supply	1853	1039.53	1833.66	979.24
c)	Large Supply including PLEC	9864	5533.7	9562.94	5313.14
5	Bulk Supply & Grid Supply				
a)	HT	36.5	21.43		
b)	LT	555.5	310.53		
	Sub-total	*592*	*331.96*	*570.27*	*318.94*
6	Railway Traction	139	83.82	134.85	71.19
7	Common Pool	305	125	309	134.97
8	Outside State	53	4.87	53.00	16.70

Sr.	Description	Approved in tariff Order FY 2013-14		Actual as per account	
9	AP	10687	4467.17	10794.27	12.50
10	Theft Detection		0		49.85
11	Add: PLEC, MMC etc.		512.34		495.17
12	Grand Total	36993	18977.62	36603.52	13499.81
13	Add: Fuel Cost Adjustment		351.76		0*
14	Add: Subsidy receivable. During FY 2012-13 as per audited accounts		0		5225.82
15	Total revenue		19329.38		18725.62

Note: * includes subsidy receivable during FY 2012-13 as approved by the Commission,

2.21.2. The breakup of the total revenue for the year 2012-13 into energy charges, MMC (Monthly Minimum Charge), Peak Load Exemption charges and theft is as under:

Table 44: Breakup of the Revenue for FY 2012-13 (Rs. Crore)

Category	Energy charges*	MMC	PLEC	Theft charges	Total
Domestic	4545.82	51.18	0	28.32	4625.32
Non-residential	1647.66	126.44	0	3.84	1777.94
Small power	432.31	33.76	0	1.02	467.09
Medium supply	985.36	62.68	0	0.67	1048.71
Large supply	5350.45	36.24	172.19	8.94	5567.82
Public lighting	103.22	0.54	0	0	103.76
Bulk & Grid Supply	320.77	0.29	0	0.13	321.19
Railway traction	71.45	11.85	0	0	83.3
Sales within the state	13457.04	322.98	172.19	42.92	13995.13
Agriculture	4618.51	0	0	6.93	4625.44
Common Pool	134.97	0	0	0	134.97
Outside state	16.70	0	0	0	16.70
Total	**18227.22**	**322.98**	**172.19**	**49.85**	18772.24**

Note: * Includes revenue recovered from FCA charges during the year, **excludes Rs. 46.62 Crore on account of power factor surcharge/incentive

2.21.3. The PSPCL prays to the Hon'ble Commission to approve the revenue from sale of power as submitted.

2.22. True-up of ARR for FY 2012-13

2.22.1. Summary of the item wise submissions and variations therein with respect to the previously approved values are provided in the table below:

Table 45: Approved Vs. Actual ARR for FY 2012-13 (Rs. Crore)

Sr. No.	Description	Approved in TO of FY 2013-14	Audited annual accounts
1	Cost of fuel	4092.95	3865.80
2	Cost of Power Purchase	7074.88	7219.09
3	Employee Cost	3536.59	3868.40
4	R&M Expenses	539.82	504.15
5	Admin & General Expenses	133.06	124.78
6	Depreciation	768.00	796.32
7	Interest Charges	1760.58	2429.79
8	Return on Equity	942.62	942.62
9	Transmission Charges Payable to PSTCL	830.01	830.01
10	Charges Payable to GoP on Power from RSD	10.50	0.00
11	Other Debits, Extraordinary Items, FBT Etc.	0.00	18.81
12	Prior Period Expenses	0.00	43.25
13	**Total Revenue Requirement**	**19689.01**	**20643.01**
15	Less: Non-tariff income	1005.30	878.76
16	**Net Revenue Requirement**	**18683.71**	**19764.21**
17	Less Revenue from Existing Tariff (including subsidy from GoP)	19329.38	18725.62
18	**Gap: Surplus (-)/ Deficit (+) for FY 2012-13**	**645.67**	**1038.63**
21	Add: Cumulative Gap upto FY 2011-12	1656.16	1946.31
22	Add: Carrying cost on Gap	0	363.68
21	**Total Cumulative Gap upto FY 2012-13**	**1010.49**	**3348.62**

Note: * Normative expenditure paid under this head during FY 2012-13 is included in R&M cost & A&G expense for the period.

2.23. Carrying Cost of Gaps

2.23.1. As summarized in Section I of this tariff petition, the carrying cost on approved regulatory asset is a legitimate cost of the utility and can be recovered till such regulatory assets are not fully liquidated through appropriate tariff adjustment.

2.23.2. It is further submitted that the Hon'ble APTEL in its Judgment dated 18 October 2012, held that there is no justification for restricting the recovery of such costs to a period of 2 years. The relevant extract of the Judgment is provided below:

"11.5 on the basis of the above findings of the Tribunal we decided as under:

i) When the utility gives its projected expenditure under a head in the ARR, the Commission either accepts it or decides a lower expenditure. However, if in the true up of the ARR subsequently the Commission finds that the expenditure which was denied/ reduced earlier under that head needs to be approved then carrying cost may be allowed for such additional expenditure under that particular head which was denied earlier.

ii) The utility is entitled to carrying cost on his claim of legitimate expenditure if the expenditure is:

a) accepted but recovery is deferred e.g. interest on regulatory assets,

b) claim not approved within a reasonable time, and

c) disallowed by Commission but subsequently allowed by Superior Authority"

2.23.3. The carrying cost for FY 2012-13 has been calculated as per the provisions of PSERC Tariff Regulations amended in 2009 i.e. at the rate of interest of 14.75% per annum as per State Bank Advance Rate as on April 1, 2012 on the accumulated gap till the year and for half year for the revenue gap during the year.

2.23.4. The carrying cost for FY 2012-13 detailed in the table below.

Table 46: Carrying Cost in Revenue Gap for FY 2012-13 (Rs. Cr)

Sr. No.	Details	Amount
1	Opening Revenue Gap	1946.31
2	Revenue Gap for the Year	1038.63
3	Total Revenue Gap (1+2)	2984.94
4	*Rate of Interest*	14.75%
5	Carrying Cost on Opening Revenue Gap (for 12 months)	287.08
6	Carrying Cost on Revenue Gap for the year (for 6 months)	76.60
7	Total Carrying Cost in Revenue Gap (5+6)	363.68

2.23.5. PSPCL prays the Hon'ble Commission to allow the carrying cost on the cumulative gap.

2.24. Revenue Gap

2.24.1. PSPCL has computed a revenue gap at Rs.1038.63 Crore for FY 2012-13. Considering the Gap upto FY 2011-12 amounting to Rs. 1946.31 Crore and carrying cost on the same, the total Gap upto FY 2012-13 amounts to Rs.3348.62 Crore.

2.24.2. The PSPCL prays to the Hon'ble Commission to approve the revenue gap along with the carrying cost upto FY 2012.

SECTION–III

PROVISIONAL TRUE UP FOR FY 2013-14

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3. PROVISIONAL TRUE UP FOR FY 2013-14

3.1. Background

3.1.1. The Hon'ble Commission had approved the ARR and Tariff for FY 2013-14 in its Tariff Order dated 10 April, 2013, which was based on the costs and revenue estimated by PSPCL. PSPCL in its ARR petition for FY 2014-15 had submitted the revised estimates of costs and revenue pertaining to Generation, Trading and Distribution functions for FY 2013-14. The Commission considered it appropriate and fair to re-visit and review the approvals granted by it for the Generation and Distribution functions in the Tariff Order for FY 2014-15and approved the revised ARR for FY 2013-14 in the Review.

3.2. Provisional True up for FY 2013-14

3.2.1. As the Hon'ble Commission in previous Tariff Order for FY 2013-14 had decided not to undertake provisional true up for PSPCL for FY 2012-13 on grounds of non-availability of audited annual accounts for the year, PSPCL now prays that the truing up of costs and revenue for FY 2013-14 may be undertaken by the Hon'ble Commission after the finalization of the Audited Accounts for the year.

It has been further intimated that the audit of accounts for FY 2013-14 is under process. The True up of costs and revenue for FY 2013-14 will be submitted as soon as the audited accounts for FY 2013-14 are available.

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SECTION–IV

REVISED ESTIMATE FOR FY 2014-15& PROJECTIONS FOR FY 2015-16

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4. SALES PROJECTION FOR FY 2014-15& FY 2015-16

4.1. Metered sales (other than Agriculture)

Revised estimate of metered energy Sale for FY 2014-15

4.1.1. The energy sales to metered categories for FY 2014-15 has been re-estimated on the following basis:

a) Actual figures of first 6 months (April 2014 to September 2014)

b) For the next six months (October 2014 to March 2015) category wise half yearly CAGR of the second half year for the period FY 2010-11 to FY 2013-14 has been calculated.

Table 47: Three year CAGR for second half of FY 2010-11 to FY 2013-14

Sr. No.	Consumer Category	3 year CAGR for second half of the financial year
1	Domestic	8.37%
2	Commercial (NRS)	6.06%
3	Industrial	
(a)	*Small Supply*	1.73%
(b)	*Medium Supply*	2.26%
(c)	*Large Supply*	9.80%
4	Street Lighting	7.51%
5	Bulk Supply	4.84%
6	Railway Traction	0.85%

c) This category wise CAGR rates have been applied to the corresponding actual category wise sales figures of the second half of FY 2013-14 to arrive at metered sales projections for each category for the second half year in FY 2014-15.

Projection for metered energy Sale for FY 2015-16

4.1.2. The energy sales to metered consumer categories for FY 2015-16 has been estimated on the actual energy sales data of FY 2010-11 to FY 2013-14. PSPCL has adopted the same methodology as approved by the Hon'ble Commission in past tariff Orders.

4.1.3. The metered energy sales figures for FY 2015-16 have been projected based on 3 year category-wise annual CAGR from FY 2010-11 to FY 2013-14. The 3 year Compounded Annual Growth Rate (CAGR) for the category wise metered sales is depicted in the table given below:

Table 48: Three Years CAGR for Metered Categories-(FY 2010-11 to FY 2013-14)

Sr. No.	Category	3 Year CAGR (FY2010-11-FY2013-14)
1	Domestic	8.93%
2	Commercial	6.86%
3	Industrial Supply (Small Power)	2.57%
4	Industrial Supply (Medium Power)	2.53%
5	Industrial Supply (Large Power)	4.73%
6	Public Lighting	8.84%
7	Bulk Supply	4.78%
8	Railway Traction	-0.13%

4.1.4. The category-wise CAGR thus calculated has been applied on revised estimates of FY 2014-15 metered sales figures of respective categories to arrive at the category wise metered energy sales projection for FY 2015-16.

4.1.5. The table given below summarizes the actual metered sales (MU) figures of FY 2013-14, revised estimates of metered sales for FY 2014-15 and the projections for FY 2015-16:

Table 49: Projections for Metered sales – FY 2013-14 (Actual), FY 2014-15 (RE) and FY 2015-16 (Proj.)

Sr. No.	Metered Energy Sales (MU)	FY 2013-14 (Actual)	FY 2014-15 (RE.)	FY 2015-16 (Proj.)	% YoY Growth (FY 2014-15)	% YoY Growth (FY 2015-16)
1	Domestic	10559.20	11489.48	12515.67	8.81%	8.93%
2	Commercial	3016.41	3245.58	3468.21	7.60%	6.86%
3	Industrial Supply					
a	*Small Power*	906.53	923.50	947.27	1.87%	2.57%
b	*Medium Supply*	1907.95	1942.65	1991.86	1.82%	2.53%
c	*Large Supply*	9807.05	11251.83	11783.76	14.73%	4.73%
4	Public Lighting	170.21	186.88	203.41	9.79%	8.84%
5	Bulk Supply	603.95	633.35	663.63	4.87%	4.78%
6	Railway Traction	143.45	152.75	152.56	6.48%	-0.13%
7	**Total Metered Sales**	**27114.75**	**29826.01**	**31726.36**	**10.00%**	**6.27%**

4.2. Agricultural Consumption

Revised estimate of Agriculture consumption for FY 2014-15:

4.2.1. The Agricultural consumption for FY 2014-15 has been re-estimated on the following basis:

a) Actual consumption of first 6 months (April 2014 to September 2014) i.e. 8213 MU. PSPCL submits that it is observed that the agriculture consumption for first half of FY 2014-15 has been increased to 8213 MU over the consumption of 7738 MU for first half of FY 2013-14 which showed the considerable growth of 6.14%. Hence, the agriculture consumption for FY 2015-16 has to be projected by applying the

considerate growth rate for justifying the increasing trend of agriculture consumption.

b) For the next six months (October 2014 to March 2015) sales has been projected by increasing actual sales of H2 of FY 2013-14 by 5%. Actual sale for second half of FY 2013-14 was 2494 MU. Therefore, agricultural consumption for the second half of FY 2014-15 has been projected at 2619 MU.

c) The AP consumption has been enhanced at rate of 5% as per principles adopted in past and restricted the same as per CAGR (approach adopted by the Hon'ble Commission in Tariff Order of FY 2014-15) cannot be relied upon as the AP consumption is dependant upon following factors:
   i. Motor sizes which has increased over the years in State of Punjab due to receding of water levels.
   ii. Increase in no. of tubewells leading to increase in total agriculture load.
   iii. Mainly dependent upon the metrological factors.

d) The AP consumption has been taken based on sample meters as AP consumption based on pumped meter not a trusted method of taking the consumption. It is fact that there is always some unauthorised shifting of AP load from AP feeders to nearby 24 hour supply feeder in order to have access to day time supply and extended hours of supply. Further, the computation of AP consumption on pumped energy involves assumptions with respect to losses of Agriculture feeder and contribution of AP consumption on mixed load feeders and any unreasonable assumption shall affect the consumption pattern adversely to PSPCL. Further, it is already proven fact for working out final output on the basis reverse computation only is not prudent method of computation. It is further added that this principle calculation is not being applied by any of the SERCs. Further, there is hardly any State except one or two which has 100% metering of Agriculture consumers and wherever it is existing also 100% readings of the same have never been ensured and accordingly insistence of PSERC to adopt pumped energy methodology may kindly be not applied.

e) Furthermore, the criteria of calculating AP consumption as adopted by Hon'ble Commission based on pumped energy is also not correct due to following reasons:
   i. Hon'ble Commission is wrongly taking AP consumption of Kandi area mixed feeders as 30% of the total consumption whereas PSPCL has calculated the same as 45% of the total consumption as attached in Volume II of this Petition. PSPCL has supplied detailed calculations to this effect to PSERC vide its Memo No. 2944/CC/DTR-121/Vol.11/TR-II dated 23 December, 2013.
   ii. Hon'ble Commission had assumed the losses of AP feeders by deducting 2.5% losses of transmission level and 15% of the distribution losses as sub-transmission level losses which is not based on the facts and in fact the losses of AP feeders no where more than 8.5% to 9% as there is not question of any

commercial loss and rather the pumped energy being recorded is lesser to the extent there is unauthorised tapping for urban pattern supply feeders by AP consumers.

f) In view of the above, escalation of 5% for projections of AP consumption is quite justified as the same is always subjected to true up.

Projection of Agriculture Consumption for FY 2015-16

4.2.2. PSPCL submits that while estimating the revised sales for FY 2014-15, it is observed that the agriculture consumption for first half of FY 2014-15 has been increased to 8213 MU over the consumption of 7738 MU for first half of FY 2013-14 which showed the considerable growth of 6.14%. Hence, the agriculture consumption for FY 2015-16 has to be projected by applying the considerate growth rate for justifying the increasing trend of agriculture consumption. Further, PSPCL has considered growth in agricultural consumption for the FY 2015-16 by 5% over the revised sales for the FY 2014-15 and accordingly the Agriculture consumption is projected for FY 2015-16 at 11374 MU (growth of 5% over 10832MU revised estimated sales for FY 2014-15).

4.2.3. The table below shows the actual/projections of agriculture consumption:

Table 50: Agricultural consumption (MU)

Sr. No.	Unmetered Energy Sales (MU)	FY 2013-14 (Actual)	FY 2014-15 (RE)	FY 2015-16 (Proj.)	% Growth (FY 2014-15)	% Growth (FY 2015-16)
1	Agriculture Consumption	10232	10832	11374	5.87%	5.00%

4.2.4. Hon'ble Commission may kindly consider the above submissions while deciding on the agricultural consumption for the period.

4.3. Total Energy Sales

4.3.1. The Sales to common pool consumers for FY 2014-15 and FY 2015-16 has been projected based on the actual figures of sales to common pool consumers for FY 2013-14 and envisaged changes due to other provisions.

4.3.2. The approach and assumptions adopted for estimating/projecting the sales for various categories of consumers has been discussed above. In view of the same, it is submitted that the Hon'ble Commission may approve the projected sales for FY 2014-15 and FY 2015-16.

4.3.3. The following table summarizes the consolidated sales for FY 2013-14, FY 2014-15 and FY 2015-16.

Table 51: Total energy sales (MU)

Description	FY 2013-14 (Actual)	FY 2014-15 (RE)	FY 2015-16 (Proj.)
Metered Sale	27115	29826	31726
AP sales	10232	10832	11374
Total sales within state	37347	40658	43100
Sales outside state	174	73	54
Sales to common pool consumers	303	309	312
Total	37824	41041	43466

5. POWER PURCHASE AND FUEL COST FOR FY 2014-15& FY 2015-16

5.1. Own Generation – Thermal Generating Stations

5.1.1. This chapter discusses the parameters for actual generation for FY 2013-14, revised estimates for FY 2014-15 and the projections for FY 2015-16.

5.1.2. Power availability from State's own thermal generating stations, namely, GNDTP, Bathinda, GGSSTP, Ropar and GHTP, Lehra Mohabbat for FY 2014-15 & FY 2015-16 has been projected on the basis of various parameters such as plant load factor, gross generation and auxiliary consumption. Various aspects of Generation & cost relating to the units have been discussed below.

Plant Availability

5.1.3. PSPCL submits that actual Plant availability factor for H1 of FY 2014-15 is as under:

Table 52: Plant availability for (MU)

Sr. No.	Description	FY 2014-15 (H1)
1	GNDTP	90.46%
2	GGSSTP	94.05%
3	GHTP	95.78%

5.1.4. The actual availability of GNDTP Bathinda during the current year is estimated based on schedule of operation for the period. The actual plant availability for GNDTP for H1 of FY 2014-15 is considered for effective capacity in operation. After R&M, Unit 4 was synchronized on oil on 23 June, 2014 and COD was made on 27 September 2014. The plant availability of the GNDTP is considered for H2 of FY 2014-15 and FY 2015-16 based on the maintenance/overhauling schedule as prescribed in the formats.

5.1.5. The plant availability of GHTP, Lehra Mohabbat and GGSSTP, Roopnagar for the second half of FY 2014-15 and for the FY 2015-16 are estimated based on the actual plant availability figures attained till H1 of FY 2014-15 and the planned maintenance schedule. The details of overhauling schedule are provided in the prescribed formats.

5.1.6. PSPCL has undertaken consistent & regular maintenance apart from timely renovation & overhaul of its Units to sustain the generation from each of these three power plants for the year 2015-16 at the target output level set by the CEA. Plant availability of GGSSTP Roopnagar & GHTP Lehra Mohabbat for H1 of FY 2014-15 is above 85%.

5.1.7. Plant availability for the H2 of FY 2014-15 is also estimated to be above 85% for the plants except GNDTP Bathinda. In case of GNDTP, Bathinda, estimated plant availability is marginally lower (84.79%). Plant availability during FY 2015-16 for the plants has been proposed to be above 85%.

Auxiliary Consumption

5.1.8. The auxiliary consumption for the ensuing year for plants has been projected based on the normative parameters as 11% for GNDTP and 8.5% for GGSSTP and GHTP plant.

5.1.9. PSPCL submits that Hon'ble ATE in its Judgment dated 18 October, 2012 held as follows:

> *"...It appears to us that the Commission is not oblivious of the provisions of the Central Electricity Regulatory Commission Regulations. It is established that the Central Electricity Regulatory Commission Tariff Regulations, 2009 has provided* ***auxiliary consumption at 12%.*** *If the circumstances applicable to Tanda Stations are applicable to and are not different from GNDTP units then there will be not too much of rationale in deviation from the Central Electricity Regulatory Commission norms." (emphasis added)*

5.1.10. From the above reference it can be seen that the norm for auxiliary consumption for GDNTP station of 110 MW/120 MW unit sets should be benchmarked with that applicable for Tanda station at 12% in accordance with the provisions of the State Regulations as linked with the CERC norms.

5.1.11. PSPCL submits that in this Petition it has considered auxiliary consumption at 11% for convenience of computation as considered by Hon'ble Commission in past tariff Orders. PSPCL humbly prays to Hon'ble Commission to approve the actual auxiliary consumption for GNDTP at 12% as per norms applicable to Tanda Central generating station.

Station Heat rate

5.1.12. For GNDTP, Hon'ble Commission has approved Station heat rate of 2750 kcal/kwh for FY 2014-15 based on CERC norms for Tanda TPS (after its R&M), as specified in CERC Tariff Regulations, 2014. PSPCL has achieved the Station heat rate of 2756.55 kcal/kwh for H1 of FY 2014-15. In order to maintain the Station heat rate as per CERC norms, PSPCL has considered the Station heat rate of 2744.58 kcal/kwh for H2 of FY 2014-15. Further, Station heat rate of 2750 kcal/kwh is considered for FY 2015-16.

5.1.13. For GHTP, Hon'ble Commission has approved different Station heat rate as 2450 kcal/kwh

for Unit 1 & 2 and 2428 kcal/kwh for Unit 3 & 4. PSPCL submits that the approach adopted by the Hon'ble Commission for stipulating different Station heat rate for Units is not prudent. The Station heat rate needs to be assessed station wise as some energy from the particular unit such as FO tank heating is used for common services of GHTP units. Also, the heat rate increases with aging of the units. Also, heat rate is prone to increase during the backing down of units. Accordingly, PSPCL has considered the heat rate of 2438 kcal/kwh for H2 of FY 2014-15 and for FY 2015-16 and submits that Hon'ble Commission may consider to allow Station Heat rate of 2450 kcal/kWh for GHTP whole as a station.

5.1.14. For GGSSTP, the Hon'ble Commission has approved the Station heat rate of 2450 kcal/kwh based on the CERC norms specified in CERC Tariff regulations, 2014. The actual Station heat rate achieved in H1 of FY 2014-15 at 2674.75 kcal/kWh which is quite higher than the approved figure. Considering the actual performance of Stations, PSPCL has considered the Station heat rate of 2595.26 kcal/kwh for H2 of FY 2014-15 and 2544.20 for FY 2015-16.

Price of Coal and Oil

5.1.15. Further, the weighted average price and calorific value for coal and oil is estimated to remain same as actual for first half of FY 2014-15. Any variation in fuel price and GCV is pass through as per the recovery of energy and capacity charges provided in Fuel cost adjustment in line with PSERC (Conduct of business) Regulations, 2005 as amended from time to time.

Transit Loss

5.1.16. Although the transit losses for all plants in H1 of 2014-15 are negative. From past trends, it is observed that the coal transit losses are inconsistent for all three plants. PSPCL submits that the coal transit losses are not within the control of it and attributable to the following reasons:

a) Calibration of measuring instruments- Weighing of coal at two different locations having different calibration of weighing machines lead to an error more than permissible limits.
b) The transit loss occurred because of seasonal variation during the transportation of the coal which changes the moisture content of the coal during the transportation.
c) The transportation of coal happens through open wagon. As soon as the goods are loaded on the wagon, it becomes owner risk and railways disown the responsibility. It is subject to pilferages at all halts, which is beyond the control of railways.
d) During the unloading, small quantities of coal get stuck at the edges of the transport wagons due to moisture and remains undelivered to the plant, contributing to transit losses.

5.1.17. Hence, PSPCL has considered the normative transit losses of 1.5% for GNDTP and 1% for GHTP and GGSSTP for estimating the fuel cost.

Imported Coal Blending for GGSSTP and GHTP

5.1.18. At present, the requirement of coal for the PSPCL plants sourced partially from PSPCL's captive mine i.e. Pachwara (Central) coal block and from CIL subsidiaries.

5.1.19. M/s Panem Coal Mines Ltd. is supplying coal to PSPCL thermal power stations from Pachwara (Central) mine of PSPCL since March 2006 as per Coal Purchase Agreement dated 30 August, 2006. After December-2012, the coal supplies from Panem Coal mines to thermal power stations became irregular. From 1 April, 2014 to 31 August, 2014, M/s Panem on an average has supplied 2.5 rakes per day against linkage of 5 rakes per day.

5.1.20. PSPCL has a dedicated coal washery set up by M/s Monnet Daniels Coal Washeries Pvt. Ltd. on BOO basis for supplying raw coal after washing exclusively to PSPCL thermal power stations. However, linkage materialization from M/s Monnet has been poor since inception of washery and was just 41% in 2013-14 and is 43% in 2014-15 upto August. M/s Monnet is emphasizing that the non-availability of adequate quality coal with CCL is resulting into less lifting of raw coal and consequential despatch of washed coal to PSPCL.

5.1.21. The continuous short supplies vis-à-vis requirement of PSPCL thermal power stations from M/s Panem Coal Mines and M/s Monnet has resulted into depletion in coal stocks at PSPCL thermal power stations. Such critical coal stock lead to the decrease in the generation against the generation approved by the Hon'ble Commission.

5.1.22. In view of this, to meet the required generation, PSPCL has to arrange the additional supplies coal supplies. For such additional coal supply, PSPCL has considered the option of importing the coal.

5.1.23. PSPCL has considered the option of high GCV imported coal (having GCV about 6300 Kcal/Kg) to meet with the coal requirement of PSPCL thermal power stations for a period of FY 2015-16. The high GCV imported coal shall have to be used after blending with indigenous coal in the ratio 82:18 (82 indigenous and 18 imported). GNDTP Bathinda has shown its inability to use imported coal after blending with indigenous coal due to practical constraints. Hence, imported coal blending is considered for GGSSTP and GHTP plant. The transit loss of 0.2% has been considered for imported coal as per CERC Tariff Regulations, 2014. The landed price of the imported coal is assumed at Rs. 9300/MT.

5.1.24. The various performance parameters considered by PSPCL for revised estimates of H2 of FY 2014-15 and FY 2015-16 are summarized as under:

Table 53: Performance parameters for H2 of FY 2014-15 and FY 2015-16

Sr. No.	Description	H1 of FY 2014-15 (Actual)	H2 of FY 2014-15 (Revised estimates)	FY 2015-16 (Projections)
	Station Heat Rate (kcal/ kwh)			
1	GNDTP	2756.55	2744.78	2750
2	GHTP	2425.64	2438	2438
3	GGSSTP	2674.75	2595.26	2544.20
	Specific Oil Consumption (ml/ kWh)			
4	GNDTP	2.42	1.5	1.5
5	GHTP	0.70	0.50	0.50
6	GGSSTP	0.73	0.80	1.00
	Gross calorific value of domestic coal (kcal/kg)			
7	GNDTP	4131.06	4100	4100
8	GHTP	3944	3860	3860
9	GGSSTP	3805	3750	3700
	Calorific value of Oil (kcal/kg)			
10	GNDTP	9400	9400	9400
11	GHTP	9500	9500	9500
12	GGSSTP	9700	9700	9700
	Transit Loss			
13	GNDTP	-1.41	1.5	1..5
14	GHTP	-0.94	1	1
15	GGSSTP	-0.46	1	1

5.1.25. With regard to the deviation in technical parameters is concerned, PSPCL submits that the Hon'ble ATE has in the following judgments advised the relaxation of norms required to be done and also in the context of old generating station:

Judgment dated 31 July, 2009 in Appeal No. 42 & 43 of 2008, in the matter of Haryana Power Generation Company Limited v. Haryana Electricity Regulatory Commission. In the above decision, the issue that was raised was that the generating company had claimed the Station Heat Rate of 3450 kCal/kWh for its generating stations at Panipat Units 1 to 4, 2700 kCal/kWh for Panipat Units 5 & 6 and 4200 kCal/kWh for Faridabad Thermal Power Station based on their actual performance, vintage etc. The Hon'ble Tribunal was pleased to, inter-alia, hold as under:

"....The State Commission has to balance the interests of the consumers and the generators. If the targets given to the generating company are not achievable, no purpose would be served by setting such targets because such approach would adversely impact the financial position of the generator, which in turn would impact the investment in the electricity industry in the State. On the other hand, if the targets given are too liberal, the cost of power to end user would be higher, which would make the local industry and business uncompetitive. The Tariff Policy also lays emphasis on laying down standard which are achievable and encourage efficient operations. It is essential that the norms

laid are not too liberal as to encourage inefficient operations, but at the same time are at least near to those achievable.

17. Therefore under the circumstances, it is essential for the State Commission to arrange for a station-wise study to determine the SHR of the power plants of the appellant. The study may be conducted in a time bound manner. If the study indicates substantial variation (say more than 2-3%) than the benchmarks adopted by the State Commission, after adjusting for reasonable deterioration due to elapse of time, may be re-determined by the State Commission.

Judgment dated 10 April, 2008 in Appeal no. 86 & 87 of 2007, in the matter of by Maharashtra State Power Generation Company Limited v. Maharashtra Electricity Regulatory Commission. Consider the claim of the generating company claiming a higher Station Heat Rate considering the age of the machines etc. the Hon'ble Tribunal, inter-alia, held as under:

"If the SHR allowed by the Commission is not achievable then the same could not be in anybody's interest; entity would suffer by not recovering its reasonable cost of supply of the electricity and the consumers would not get the right signal about the pricing of the product they would be using. Determining right price is also essential to send signals to the prospective developers/investors in the sector enabling them to take decision about the investment potential in the sector.

Under the circumstance, we feel that the Commission either on its own or through the Appellant engage appropriate independent agency(ies), who can carry out a study in a time bound (preferably within three months) manner to reasonably assess the achievable SHR of the plants owned by the Appellant. Such agency may also be asked to suggest measures to improve the SHRs over a period of time."

Judgment dated 23 November 2006 in the Appeal No. 129 of 2006, in the matter of Gujarat State Electricity Company Limited v. Gujarat Electricity Regulatory Commission. In the above judgment, the Hon'ble Tribunal while considering the claim of the generating company for allowing relaxed norms and parameters for old and vintage units as compared to net generating units who have not outlived their useful life, the Hon'ble Tribunal, inter-alia held as under:

"Point C: Whether the claim of station heat rate should be allowed uniformly? Nextly, the learned counsel for the appellant advanced arguments and contended that the first respondent Commission ought not to have fixed the station heat rate for the vintage generating stations at the same level as applicable to a newer generating station. The older generating stations, by the passage of time, station heat rate of such old generating stations would further fall and deteriorate. The same cannot be held to be a deficiency on the part of the appellant. The problem of higher station heat rate is common to all the generating stations throughout India, which factor has been taken note of by various Regulatory Commissions and the CEA, where the generators have been permitted realistic norms. In fact the CERC has allowed higher station heat rates, so also other regulatory Commissions approved higher station heat parameters. That being a decision, it is contended that there is neither reason nor rhyme for the first respondent to have acted differently."

26. There is force in the submission made by the learned counsel for the appellant. Though, in the view of the first respondent Commission, the difference is very narrow but

the cumulative effect of all the generating stations has a bearing which should not have been ignored by the first respondent Commission. The contention advanced in this respect deserves to be appreciated and sustained. Point C is answered as above and station heat rate has to be allowed considering the vintage and present condition of the station in view of the CEA recommendations and treatment given by CERC for similarly placed stations under its jurisdiction. We, therefore, order Point 'C' accordingly."

5.1.26. In light of the above submissions, PSPCL requests the Commission to allow the technical performance of stations at relaxed levels.

Guru Nanak Dev Thermal Plant, Bathinda

Table 54:Calculation of Variable Cost of Generation for GNDTP, Bathinda

Sr. No.	Item	Unit	FY 2013-14 (Actual)	FY 2014-15 H1 (Actual)	FY 2014-15 H2 (Proj.)	FY 2015-16 (Proj.)
1	Installed Capacity	MW	450	460	460	460
2	PLF	%	41.49	51.21	63.21	65.48
3	Plant Availability	%	63.95	68.03	84.79	88.94
4	Gross Generation	MU	1635.46	1012.69	1270.00	2646.00
5	Auxiliary Consumption					
	(i)	MU	183.01	111.42	139.70	291.06
	(ii)	%	11.19	11.00	11.00	11.00
6	Net Generation	MU	1452.45	901.27	1130.30	2354.94
7	Station Heat Rate	Kcal/kwh	2760.48	2756.55	2744.78	2750.00
8	Specific Oil Consumption	ml/kwh	1.58	2.42	1.50	1.50
9	Calorific Value of Oil	Kcal/Litre	9400.00	9400.00	9400.00	9400.00
10	Calorific Value of Coal (Weighted Average)	Kcal/Kg	4144.71	4131.06	4100.00	4100.00
11	Overall heat content	GCal	4514655.91	2791543.69	3485870.60	7276500.00
12	Heat from oil	GCal	24326.82	23080.78	17907.00	37308.60
13	Heat from coal	GCal	4490329.08	2768462.91	3467963.60	7239191.40
14	Total Oil Consumption	KL	2587.96	2455.40	1905.00	3969.00
15	Coal Transit Loss	%	2.72	-1.41	1.50	1.50
16	Total Coal Consumption excluding transit loss	Tonnes	1083388.00	670158.00	845844.78	1765656.44
17	Quantity of PANAM coal	Tonnes	708159.00	356070.00	600000.00	1200000.00
18	Quantity of coal other than PANAM coal	Tonnes	375229.00	314088.00	245844.78	565656.44
19	Quantity of coal other than PANAM coal including transit loss	Tonnes	385720.60	309659.36	249532.45	574141.29
20	Total Quantity of coal required	Tonnes	1093879.60	665729.36	849532.45	1774141.29
21	Price of Coal	Rs./Tonne	3600.00	3745.67	3745.67	3745.67

Sr. No.	Item	Unit	FY 2013-14 (Actual)	FY 2014-15 H1 (Actual)	FY 2014-15 H2 (Proj.)	FY 2015-16 (Proj.)
22	Price of Oil	Rs./KL	51782.00	50774.17	50774.17	50774.17
23	Total Coal Cost	Rs. Crores	393.80	249.36	318.21	664.53
24	Total Oil Cost	Rs. Crores	13.40	12.47	9.67	20.15
25	Total Fuel Cost	Rs. Crores	407.20	261.83	327.88	684.69

GHTP LehraMohabbat

Table 55: Calculation of Variable Cost of Generation for GHTP LehraMohabbat

Sr. No.	Item	Unit	FY 2013-14 (Actual)	FY 2014-15 H1 (RE for Sep 14)	FY 2014-15 H2 (Proj.)	FY 2015-16 (Proj.)
1	Installed Capacity	MW	920	920	920	920
2	PLF	%	82.70	68.91	78.91	89.03
3	Plant Availability	%	97.30	95.78	85.30	96.50
4	Gross Generation	MU	6664.94	2784.28	3171.00	7195.00
5	Auxiliary Consumption					
	(i)	MU	547.52	242.47	269.54	611.58
	(ii)	%	8.21	8.71	8.50	8.50
6	Net Generation	MU	6117.43	2541.81	2901.47	6583.43
7	Station Heat Rate	Kcal/kwh	2396.00	2425.64	2438.00	2438.00
8	Specific Oil Consumption	ml/kwh	0.32	0.70	0.50	0.50
9	Calorific Value of Oil	Kcal/Litre	9500.00	9500.00	9500.00	9500.00
10	Calorific Value of Coal (Weighted Average)	Kcal/Kg	4068.00	3944.00	3860.00	4299.20
11	Overall heat content	GCal	15971964.35	6753653.09	7603899.45	17541410.00
12	Heat from oil	GCal	20567.50	18610.50	15062.25	34176.25
13	Heat from coal	GCal	15951396.85	6735042.59	7588837.20	17507233.75
14	Total Oil Consumption	KL	2165.00	1959.00	1585.50	3597.50
15	Coal Transit Loss	%	0.94	-0.46	1.00	1.00
16	Total Coal Consumption excluding transit loss	Tonnes	3921189	1707668.00	1966020.00	3339210.01
17	Quantity of PANAM coal	Tonnes	2610513	724589.00	0.00	0.00
18	Quantity of coal other than PANAM coal	Tonnes	1310676	983079.00	1966020.00	3339210.01
19	Quantity of coal other than PANAM coal including transit loss	Tonnes	1323455	986188.00	1985878.79	3372939.40
20	Quantity of Imported coal excluding transit loss	Tonnes	0	0	0	732997.32
21	Transit loss on imported coal	%	0	0	0	0.20
22	Quantity of imported coal with transit loss	Tonnes	0	0	0	734466.25
23	Total Quantity of coal	Tonnes	3933968.00	1710777.00	1985878.79	4107405.66

Sr. No.	Item	Unit	FY 2013-14 (Actual)	FY 2014-15 H1 (RE for Sep 14)	FY 2014-15 H2 (Proj.)	FY 2015-16 (Proj.)
	required					
24	Price of Domestic Coal	Rs./Tonne	3651.00	3801.66	3801.66	3801.66
25	Price of Imported Coal					9300.00
26	Price of Oil	Rs./KL	49485.00	55581.00	55581.00	55581.00
27	Total cost of domestic coal	Rs. Crores	0	0	0	1282.28
28	Total cost of imported coal	Rs. Crores	0	0	0	683.05
29	Total Coal Cost	Rs. Crores	1436.34	650.38	754.96	1965.33
30	Total Oil Cost	Rs. Crores	10.71	10.89	8.81	20.00
31	Total Fuel Cost	Rs. Crores	1447.05	661.27	763.78	1985.33

GGSSTP Roopnagar

Table 56: Calculation of Variable Cost of Generation for GGSSTP Roopnagar

Sr. No.	Item	Unit	FY 2013-14 (Actual)	FY 2014-15 H1 (Actual)	FY 2014-15 H2 (Proj.)	FY 2015-16 (Proj.)
1	Installed Capacity	MW	1260	1260	1260	1260
2	PLF	%	72.53	72.63	75.53	77.70
3	Plant Availability	%	89.84	94.05	88.67	90.52
4	Gross Generation	MU	8005.87	4019.53	4157.00	8600.00
5	Auxiliary Consumption					
	(i)	MU	675.68	335.33	353.35	731.00
	(ii)	%	8.44	8.34	8.50	8.50
6	Net Generation	MU	7330.19	3684.20	3803.66	7869.00
7	Station Heat Rate	Kcal/kwh	2575.31	2674.75	2595.26	2544.20
8	Specific Oil Consumption	ml/kwh	0.72	0.73	0.80	1.00
9	Calorific Value of Oil	Kcal/Litre	9700.00	9700.00	9700.00	9700.00
10	Calorific Value of Coal (Weighted Average)	Kcal/Kg	4100.00	3805.00	3750.00	4209.00
11	Overall heat content	GCal	20617586.73	10751212.03	10788495.82	21880120.00
12	Heat from oil	GCal	56045.73	28531.78	32258.32	83420.00
13	Heat from coal	GCal	20561541.00	10722680.25	10756237.50	21796700.00
14	Total Oil Consumption	KL	5777.91	2941.42	3325.60	8600.00
15	Coal Transit Loss	%	-0.01	-0.94	1.00	1.00
16	Total Coal Consumption excluding transit loss	Tonnes	5015010.00	2818050.00	2868330.00	4246446.66
17	Quantity of PANAM coal	Tonnes	2529993.00	942976.00	0.00	0.00

Sr. No.	Item	Unit	FY 2013-14 (Actual)	FY 2014-15 H1 (Actual)	FY 2014-15 H2 (Proj.)	FY 2015-16 (Proj.)
18	Quantity of coal other than PANAM coal	Tonnes	2485017.00	1875074.00	2868330.00	4246446.66
19	Quantity of coal other than PANAM coal including transit loss	Tonnes	2484768.52	1857612.44	2897303.03	4289340.06
20	Quantity of Imported coal excluding transit loss	Tonnes	0	0	0	932146.83
21	Transit loss on imported coal	%	0	0	0	0.20
22	Quantity of imported coal with transit loss	Tonnes	0	0	0	934014.86
23	Total Quantity of coal required	Tonnes	5014761.52	2800588.44	2897303.03	5223354.92
24	Price of Domestic Coal	Rs./Tonne	4060.63	4147.92	4147.92	4147.92
25	Price of Imported Coal	Rs./Tonne	0	0	0	9300.00
26	Price of Oil	Rs./KL	47916.29	49148.03	49148.03	49148.03
27	Total cost of domestic coal	Rs. Crores	0	0	0	1779.18
28	Total cost of imported coal	Rs. Crores	0	0	0	868.63
29	Total Coal Cost	Rs. Crores	2036.31	1168.90	1189.76	2647.82
30	Total Oil Cost	Rs. Crores	27.69	14.46	16.34	42.27
31	Total Fuel Cost	Rs. Crores	2064.00	1183.36	1206.11	2690.09

Table 57 Summary of Fuel Cost

Generating Stations	FY 2013-14 (Prov.)	FY 2014-15 (RE)	FY 2015-16(Proj.)
GNDTP, Bathinda	407.20	589.71	684.69
GHTP, Lehra Mohabbat	1447.05	1425.04	1985.33
GGSSTP, Roopnagar	2064.00	2389.47	2690.09
Total	3918.25	4404.22	5360.11

Own Generation - Hydel Stations

5.1.27. Availability from own Hydel plants for FY 2014-15 has been re-estimated on the basis of the actual generation figures for H1 and the revised generation target estimated for the respective Hydel plants for the H2. The availability projections for the H2 of FY 2014-15 are based on last three years average for FY 2011-12 to FY 2013-14 for the corresponding months while the projections for the FY 2015-16 are based on average of last three years i.e., FY 2011-12 to FY 2013-14.

5.1.28. The total available Hydel Generation and units generated from each source is provided in the table below. Royalty to HP from Shanan and Share to HP from RSD for FY 2014-15(H2) & FY 2015-16 has been taken as average for the last three years i.e., FY 2011-12 to 2013-14.

5.1.29. Projected energy from BBMB has been taken as average of the energy for the last three years

due to the reduction in share of Punjab from BBMB.

5.1.30. The auxiliary losses in the plants have been calculated based on the average of the historical data.

Table 58: Own Generation from Hydel sources

Sr. No.	HYDEL STATION	FY 2013-14 (Provisional)	FY 2014-15 (H1 - Actual)	FY 2014-15 (H2 - RE)	FY 2014-15 (Total)	FY 2015-16 (Proj)
1	Shanan HEP	356	371	113	484	525
2	UBDC Hydel Project	362	248	113	361	369
3	Mukerian Hydel Project (MHP)-Stage I	1247	475	653	1128	1000
4	MHP-Stage II	-	-	-	-	67
5	Anandpur Sahib Hydel Project	735	415	286	701	720
6	Ranjit Sagar Project	1576	1391	483	1891	1523
7	Micro Hydel Projects	11	5	3	8	9
8	**Total**	**4286**	**2904**	**1669**	**4573**	**4213**
9	Aux Consumption (MU) & Transformation Losses (MU)	36	21	5	26	12
10	Less: HP Share in RSD	68	63	25	88	66
11	**Total own generation (8-9-10)**	**4182**	**2820**	**1639**	**4459**	**4135**
12	PSPCL share from BBMB					
a)	PSEB/PSPCL Share excluding Common Pool Share (Net)	4377	2383	1629	4012	4107
b)	Common Pool Share (Net)	303	154	155	309	312
13	Net share from BBMB	4680	2537	1784	4321	4419
14	**Total hydro availability (Net))Own + BBMB) (MU) (11+13)**	**8862**	**5357**	**3423**	**8780**	**8554**

5.2. Power Purchase

5.2.1. Demand of power is met by procurement of power from central generating stations and other external sources apart from state's own Generation. The major sources from which PSPCL procures Power are:

a) Central Generating Stations viz. NTPC, NHPC, NPC, SJVNL and THDC
b) Traders
c) Co-Generation Plants
d) Banking Arrangements

Assessment of Availability

5.2.2. In order to optimize the cost of power procured PSPCL has scheduled it's procurement from various CGSs on the merit order principles. Following factors have been considered for deciding the procurement/generation schedule:

i. Load profiles during various seasons;
ii. Technical constraints;
iii. Avoidable costs after giving due consideration to contractual obligations.

5.2.3. The power purchase expenses as determined through such optimal merit order dispatch after due consideration for contractual obligations and technical constraints, have been proposed for approval.

5.2.4. The Merit Order of a process indicates the order in which power from various available sources shall be utilized. In the process, sources of power have been considered in ascending merit order of variable cost. Sources of power with the lowest variable cost/ unit have been scheduled to be procured first (base load) and those with the highest cost/unit at last (peak load). Sources with equal merit order have been considered together in proportion to their available capacity.

5.2.5. In addition to the availability from own Thermal and hydel generation, PSPCL also procures power from CGS, PTC, NVVNL (NTPC Vidyut Vyapar Nigam Limited) and other sources to meet its energy requirement.

5.2.6. The state of Punjab receives fixed allocated share from Central Generating Stations (CGSs) based on its allocation from respective stations. Moreover, Punjab also receives a quantum of power from the unallocated share in various CGSs at different intervals during a year. Furthermore, State of Punjab is also purchasing the power from Independent Power Producers (IPPs) including Talwandi Sabo, Rajpura TPS (NPL), Goindwal Sahib, etc. The projected energy from all Central Thermal Generating stations with allocated share to PSPCL for the FY 2014-15 (H2) and FY 2015-16 has been taken same as the energy for the previous year i.e. FY 2013-14 and from Central Hydro Generating Stations with allocated share to PSPCL for the FY 2014-15 (H2) and FY 2015-16 has been based upon the average of the energy for the last three years i.e. FY 2011-12 to FY 2013-14.

5.2.7. Projected Energy from the NEW projects has been calculated in accordance to the CEA regulations / Designed Energy as mentioned in the Power Purchase Agreement (PPA). The following new power stations have been considered operative as per the dates indicated against each:

Table 59: New Power Plants considered for projections

Sr. No.	Name of the Plant	Plant Capacity (MW)	PSPCL Share Gross (MW)	Commissioning Schedule
1	Koldam HEP (NTPC)	4x200=800 MW	111	Mar-15 (Unit 1), Apr-15 (Unit 2), May-15 (Unit 3), Jun-15 (Unit 4),
2	Sasan Ultra Mega TPS (Reliance)	3960 MW (6 Unit)	558.36	(Unit-1 to 4) Already Commissioned
				Unit 5 – Oct 2014 (already synchronised)
				Unit-6- Dec 2014
3	Rampur HEP (BHEL)	6x68.7=412 MW	42	Unit-6 – Sept 2014 (already commissioned)
4	Talwandi Sabo TPS	3x660 = 1980MW	1860	Unit-1 (Already Commissioned)

Sr. No.	Name of the Plant	Plant Capacity (MW)	PSPCL Share Gross (MW)	Commissioning Schedule
	(Sterlite)			Unit-2- (Jan 2015), Unit-3 -(March 2015)
5	Mukerian Hydel Project Stage-II	9x2 = 18 MW	18	June 2015
6	GVK Goindwal Sahib	2*270=540 MW	540	Unit-1 April-2015, Unit-2 Sept-2015

5.2.8. The above commissioning schedule has been taken as per the commitments received from concerned generating company/ concerned authority and energy availability has been projected accordingly in spite of the slippages in the commissioning as no firm schedule is available.

5.2.9. In case of upcoming private power plants in Punjab, the energy availability has been projected based on date of commissioning, availability based on stabilization period and normative plant load factor. The following table summarizes the monthly projections of power available from IPPs in Punjab during FY 2014-15 and FY 2015-16.

Table 60: Monthly projected power available from IPPs in Punjab during FY 2014-15 & FY 2015-16

STATION	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
FY 2014-15													
Talwandi Sabo TPS	0	0	0	0	0	0	0	88	183	365	330	548	**1514**
Rajpura TPS	0	0	0	0	0	0	835	808	835	835	754	835	**4901**
FY 2015-16													
Talwandi Sabo TPS	689	712	689	712	712	689	712	689	712	712	643	712	**8388**
Rajpura TPS	808	835	808	835	835	808	835	808	835	835	754	835	**9829**
Goindwal Sahib TPS	94	97	94	97	97	187	193	187	193	193	175	193	**1798**

5.2.10. The above generation has been worked out as per the assumption taken as below:

Particulars	FY 2014-15 (H2)		FY 2015-16		
	Talwandi Sobo TPS	Rajpura TPS	Talwandi Sobo TPS	Rajpura TPS	Gondiwal Sahib TPS
Installed Capacity (MW)	1980	1400	1980	1400	540
PSPCL Share (MW)	1860	1380	1860	1380	540
Plant Load Factor (%)	80%	85%	80%	85%	80%
Availability Factor (%)	50%	100%	65%	100%	65%
Generation Available (MU)	1514	4901	8388	9829	1798

5.2.11. These assumptions has been made keeping in view the performance of the plants during the current year and also keeping in view the technology used by various plants and other parameters applicable to these plants.

5.2.12. However it should be noted that during FY 2013-14 (H2) and FY 2014-15, PSPCL is projected to have surplus energy available from tied up sources from CGS and the upcoming IPPs in Punjab. In order to manage demand and maintain energy balance, the surplus energy during H2 period of FY 2014-15 and FY 2015-16 has been surrendered. Surrendering has been done as per the Merit Order of power purchase from existing thermal and gas plants. Merit order is based upon the variable rates of September 2014 for H2 period of FY 2014-15 and the projected variable rates assumed for FY 2015-16. After surrender of energy, only variable charges have been reduced and fixed/other charges are assumed same. Accordingly, the surplus power available from IPPs has also been surrendered as per merit order schedule.

5.2.13. Further, as per the directions of the PSERC regarding the Short term power Purchase plan for the FY 2015-16, PSPCL submits that as per the current estimates being projected in ARR, there is no deficit for short term procurement. In case, any requirement is assessed it will be procured on day-to-day basis. Thus no separate short term purchase plan for FY 2015-16 is prepared.

5.2.14. The quantum of projected gross energy purchased from various sources for FY 2014-15 and FY 2015-16 along with the actual energy available from all sources during FY 2013-14 is provided in the following table:

Table 61: Net Power Purchase for FY 2013-14, FY 2014-15 & FY 2015-16 (MU)

Sr. No.	Source	FY 2013-14 (Actuals)	FY 2014-15 (RE)	FY 2015-16 (Proj.)
I	NTPC			
1	Anta (G/F)	240.26	123.12	0.00
2	Anta (R/F)	0.80	2.12	0.00
3	Anta (L/F)	0.00	0.00	0.00
4	Auraiya (G/F)	184.74	87.28	0.00
5	Auraiya (R/F)	2.38	6.11	0.00
6	Auraiya (L/F)	0.00	0.00	0.00
7	Dadri Gas (G/F)	440.40	158.59	0.00
8	Dadri Gas (R/F)	3.47	7.90	0.00
9	Dadri Gas (L/F)	0.00	0.00	0.00
10	Singrauli	1571.48	1540.37	1571.63
11	Rihand-I	779.74	741.54	771.99
12	Rihand-II	725.10	776.49	679.45
13	Rihand-III	311.47	515.13	384.80
14	Unchahar-I	217.26	140.73	0.00
15	Unchahar-II	421.34	382.44	196.76
16	Unchahar-III	119.26	131.47	61.06
17	Farakka (ER)	136.60	64.43	0.00
18	Kahalgaon-I (ER)	288.57	148.14	0.00
19	Kahalgaon-II (ER)	708.31	337.83	0.00

Sr. No.	Source	FY 2013-14 (Actuals)	FY 2014-15 (RE)	FY 2015-16 (Proj.)
20	NCTPS- 2C (DADRI II)	69.61	110.50	0.00
21	IGSTPS Jhajjar (NTPC JV)	119.05	122.54	0.00
22	Koldam HEP	0.00	3.82	387.78
II	NHPC			
23	Bairasuil	282.55	328.69	311.97
24	Salal	834.95	867.47	852.91
25	Tanakpur	54.95	52.25	57.79
26	Chamera-I	230.74	242.38	239.66
27	Chamera-II	179.81	186.43	179.02
28	Uri	335.21	377.11	84.45
29	Dauli Ganga	30.58	82.40	368.71
30	Dulhasti	224.59	217.09	80.53
31	Sewa-II	50.74	57.02	212.57
32	Chamera-III	97.50	96.63	50.62
33	Uri-II	29.90	134.26	88.58
34	Parbati-III	0.00	83.71	174.86
III	NPCIL			
35	NAPP	314.37	314.16	316.05
36	RAPP-3 &4	801.84	809.70	783.00
37	RAPP-5 & 6	449.51	410.56	436.00
IV	OTHER SOURCES (Central Sector)			
38	Nathpa Jhakri HEP (SJVNL)	827.57	806.27	796.67
39	Rajpura HEP (SJVNL)	0.00	117.11	104.59
40	Tehri HEP (THDC)	373.61	270.27	312.84
41	Koteshwer HEP (THDC)	119.72	94.58	100.53
42	Durgapur TPS (DVC)	1087.98	773.34	588.34
43	TRADERS (Short Term Power)	3358.08	3323.15	0.00
44	Open Access Chgs. of Traders for short term power			
V	TRADERS/IPPs (Long Term Power)	0.00	0.00	0.00
45	Tala HEP (PTC)	103.23	96.62	95.23
46	Pragati Gas Plant Bawana (PPCL)	50.18	0	0
47	Pragati-III Gas Plant Bawana (PPCL)	0.00	88.38	0.00
48	Mundra UMPP (CGPL)	2841.10	2719.41	2730.86
49	Mallana-II HEP (PTC)	268.43	218.49	224.47
50	NVVNL Bundled Power (NTPC Thermal Power + Solar power)	154.37	207.64	206.21
51	Sasan UMPP (RPL)	364.37	2466.48	3034.24

Sr. No.	Source	FY 2013-14 (Actuals)	FY 2014-15 (RE)	FY 2015-16 (Proj.)
52	Talwandi Sabo TPS (Sterlite)	0	1057.74	6502.48
53	NPL Rajpura TPS (L & T)	474.65	3502.38	1287.48
54	GVK TPS	0	0	761.00
55	Long Term NRSE Purchase within Punjab	610.57	847.77	1360.35
56	Short Term NRSE Purchase within Punjab	4.50	0.00	0.00
57	Beas Valley NRSE Short Term(PTC)	44.59	0.00	0.00
58	Net Banking with HPSEB,UPCL,J & K & thro. Traders	716.41	-1053.00	-81.58
59	Banking Premium	0.00	0.00	0.00
60	UI	-55.05	134.89	0.00
61	Reactive Charges	0.00	0.00	0.00
62	PGCIL	0.00	0.00	0.00
63	Mercadoz	0.00	0.00	0.00
64	Open Access Intra state UI Import	48.20	0.00	0.00
65	Purchase of RECs for FY 2013-14	0.00	0.00	0.00
66	Total Power purchase	21650	25332	26314

5.2.15. The inter-state losses for the FY 2013-14 & H1 of FY 2014-15 are as per actual data. Inter-state losses for H2 of FY 2014-15 & for FY 2015-16 have been taken as same percentage of actual Inter-state losses to the gross power import for the period H2 of FY 2013-14 (H2) & for FY 2013-14, respectively.

5.3. Energy Balance and Transmission & Distribution Loss Projection

5.3.1. PSPCL has worked out the T&D losses occurring in its network on the basis of actual power purchase and sales data available for the FY 2013-14, revised estimates of sales and power purchase for FY 2014-15 and projections for the FY 2015-16.

5.3.2. The transmission & distribution losses for the FY 2015-16 have been projected after considering the expected improvement in system as a result of planned capital works for Distribution loss reduction programs.

5.3.3. An analysis of the methodology for consideration of actual losses for erstwhile PSPCL's last Tariff Order suggests that the Hon'ble Commission disallows the sales pertaining to AP consumption and adds such disallowed sales to the T&D losses. The combined impact of both disallowance in AP consumption and T & D losses being higher (after reworking by Hon'ble Commission) is passed on as an ultimate disallowance in the power purchase cost. In view of the same it is prayed that the actual AP sales is in accordance with audited annual

accounts of the PSPCL be approved for the final truing up for the year.

5.3.4. PSPCL further submits that Hon'ble Commission has fixed the trajectory of reduction of the T&D losses considering the AP consumption on the basis of sample meter reading. However, the approach of approving the T&D losses based on AP pumped energy consumption itself is contrary to Hon'ble Commission's trajectory of reduction in T&D losses as without revising the trajectory the same has proved detrimental to PSPCL.

5.3.5. It is submitted that PSPCL has been taking steps to reduce the distribution loss through various loss reduction and network planning initiatives. Considering the geographical spread of the service area and consumer base of PSPCL, loss level of 16.89% has been achieved during FY 2013-14. It is indicative of the efficient performance of the PSPCL. Efforts to reduce losses below these levels would require huge investments and appropriate cost benefit analysis is essential as return in the form of loss reduction may not justify the investments in certain cases.

5.3.6. PSPCL has already achieve the T&D loss level of 16.89% which includes transmission loss of 2.50%. PSPCL's the distribution loss level of 14.39% (excluding 2.5% of transmission loss) has already been at stagnancy and at this stage, it is important to maintain the current loss level as further reduction would be difficult.

5.3.7. It is further submitted that driven by the targets and directives given by the Hon'ble Commission, the PSPCL is making concerted efforts to reduce and control the losses and is already recognized at par with some of the efficient utilities of the Country.

5.3.8. In view of the above it is prayed that the T&D loss level of 16.50% and 16.00% as projected for the FY 2014-15 and FY 2015-16, respectively be approved for the purpose of determination of ARR.

5.3.9. Also, in view of the existing loss level of 16.89% already achieved by the PSPCL during FY 2013-14, the proposed improvements in the FY 2014-15 and FY 2015-16 are justifiable since the PSPCL would still comply/ overachieve the regulatory loss targets given for the respective years.

5.3.10. In view of the above, the energy balance for the year FY 2013-14 (actual), FY 2014-15 (revised estimates) and for FY 2015-16 (projected) are shown in the following table:

Table 62: Proposed Energy Balance for FY 2013-14, FY 2014-15 and FY 2015-16(MU)

Sl. No.	Description	FY 2013-14 (Actual)	FY 2014-15 (RE)	FY 2015-16 (Proj.)
A)	**ENERGY REQUIREMENT**			
1	Energy sales to metered category within the State	27115	29826	31726
2	Energy sales to AP	10232	10832	11374
3	Total sales within the State	37347	40658	43100

Sl. No.	Description	FY 2013-14 (Actual)	FY 2014-15 (RE)	FY 2015-16 (Proj.)
4	T&D losses			
a)	%	16.89%	16.50%	16.00%
b)	MU	7588	8035	8210
5	*Sub-total*	44935	48693	51310
6	Sales to common pool consumers	303	309	312
7	Outside state sales			
a)	*Sale through power exchange*	121	20	0
b)	*Add: Royality to HP from Shannan (MU)*	53	53	54
8	Total Sales to outside states (a+b)	174	73	54
9	**Total energy requirement**	**45412**	**49075**	**51676**
B)	**ENERGY AVAILABILITY**			
10	Thermal	14900	14963	16807
11	Hydro (including share from BBMB and Common Pool)	8862	8780	8554
12	Purchase net	21650	25332	26314
13	**Total Available(10+11+12)**	**45412**	**49075**	**51676**

5.4. Power Purchase Cost

5.4.1. The power purchase cost for each station is estimated as per the capacity charges and the variable charges for the respective station.

5.4.2. The power purchase bills for the month of September, 2014 have been attached as Volume IV for the kind reference of the Hon'ble Commission.

Basis of fixation of Annual Fixed Charges:

5.4.3. PSPCL has scheduled it's power procurement plan based on merit order principles, capacity charges payable on the basis of allocated share and contractual obligations have been considered in-spite of the fact that power procurement from various sources has been regulated on the basis of load demand vis-a vis per unit cost from the generating sources.

5.4.4. PSPCL submits that the Central Electricity Regulatory Commission has notified CERC (Terms and conditions of tariff) Regulations, 2014 for the period of FY 2014-15 to FY 2018-19 on 21 February, 2014. CERC has not issued tariff Orders for Central Generating Stations for the said period, however, CERC has issued provisional tariff Orders for some stations and final tariff Orders for some other stations for ther period from FY 2008-09 to FY 2013-14. As per CERC Tariff Regulations, the generating company or the transmission licensee are allowed to recover the shortfall or refund the excess Annual Fixed Charge on account of Return on Equity due to change in applicable Minimum Alternatc/Corporate Income Tax Rate of the respective financial year directly without making any application before the CERC. Further Annual Fixed Charge with respect to the tax rate applicable to the generating

company or the transmission licensee, as the case may be shall be trued up by CERC along with the tariff Petition filed for the next tariff period. Accordingly, the revised AFC's as calculated by various central sector generators and charged in their bills for FY 2012-13, FY 2013-14 ,FY 2014-15 and FY 2015-16 have been considered. AFC's for FY 2015-16 for various plants have been assumed same as applicable in FY 2014-15.

5.4.5. As the tariff Orders for the period from FY 2014-15 to FY 2018-19 are not available, the generating entity wise present status of CERC Orders regarding tariff for various central sector plants is as follows:

a) **NTPC** - CERC has issued final tariff orders for all plants, except for Rihand-III and IGSTPS Jhajjar (a NTPC JV company). For Rihand-III and IGSTPS Jhajjar; provisional tariff Order issued by CERC is applicable.
b) **NHPC**- CERC has issued final tariff Orders for all plants, except for Chamera–III Hydro Electric Project. For Chamera-III HEP& Parbati -III provisional tariff Order issued by CERC is applicable.
c) **Nathpa Jhakeri HEP, Tehri HEP, Koteshwar HEP**- For these Central sector plants, final Orders for tariff period of FY 2008-09 to FY 2013-14 are yet to be issued by CERC. Therefore generators are raising the bills as per provisional tariff Order. After award of final Orders, generators shall claim the arrear amount.
d) **Durgapur TPS (DVC)**- For Durgapur TPS, DVC is provisionally raising the bills, as final CERC tariff Order is yet to be issued.
e) **Pragati-III Gas plant (PPCL)**- For Pragati-III Gas plant, PPCL is provisionally raising the bills, as final CERC tariff Order is yet to be issued.
f) **CGPL Mundra UMPP**-For the time being the payment is being made as per original tariff Order. Further, the said compensatory tariff decided by CERC has been challenged before Hon'ble Supreme Court and matter is subjudice.
g) **NPCIL** -Tariff for NAPP/RAPP plants are governed by the guidelines of Department of Atomic Energy.

5.4.6. **Basis of fixation of transmission charges:** Long term inter-state transmission charges recovered by PGCIL are being charged as per PoC (Point of connection) methodology w.e.f. 1.7.2011. During FY 2012-13 and FY 2013-14, CERC was notifying slab rates of transmission charges valid for 6 months. From 1.4.2013, CERC is notifying slab rates of transmission charges valid for 3 months. PGCIL charges for FY 2015-16 have been worked out based on applicable slab rates for FY 2013-14.

Intra-state transmission charges payable to PSTCL FY 2013-14 is assumed as per provisional accounts for the year. For FY 2014-15, the approved intra-state transmission charges for PSTCL have been considered and charges for FY 2015-16 has been projected after considering an increase of 4% p.a. on transmission charges for FY 2014-15.

5.4.7. **Import and Export of Power Under Banking Arrangement:** Under the new accounting procedure implemented from 1 April, 2009, only the net import/ export of power under banking arrangement is being accounted for in power purchase. The power purchase data for

banking during the FY 2012-13, 2013-14 & 2014-15 have been shown accordingly. The per unit cost assigned to banking (import/export) for FY 2012-13 is 466.81 Ps/unit and for FY 2013-14 is 323.61 Ps/unit and revised estimates for FY 2014-15 is 342 Ps/unit. Cost of banking for year 2015-16 is assumed same as that for FY 2014-15 i.e. 342 Ps/unit.

5.4.8. **Assumptions for projections for second half of 2014-15:**

a) The power purchase cost for first half of FY 2014-15 i.e. upto September 2014 has been taken on actual basis except the water usage charges for NHPC stations (Salal,Uri, Dulhasti & Sewa-II). These charges for the period April, 2014 to September, 2014 are assumed same as actually paid for the period April, 2013 to September, 2013, as bills are yet to be received. For Uri –II rate of water charges paid for Oct-2013 to Mar-2014 have been assumed same for H1 2014-15.

b) Variable charges (VC) for all plants already supplying power under long term contracts have been assumed same as actual for the month of September 2014. The AFC for existing central sector plants has been assumed same as in H1.

c) The AFC for existing central sector plants has been assumed same as in H1. As the fixed charges (FC) for Central sector plants depend upon the AFC, percentage share and plant availability factor, they have been assumed same as that in H1 period. The water usage charges for NHPC stations are assumed same as format-7 (April-2014 to Sep-14,H1) the per unit rate of water charges for plants Salal, Uri, Dulhasti & Sewa-II have been calculated on the basis of previous year rates of FY 2013-14. The water charges for each of these plants have been calculated by taking actual energy of H1 period of 2014-15. For Uri-II plant, the per unit rate has been assumed on the basis of per unit calculation of previous year rates of H2 (2013-14) & income tax charges for Nathpa Jhakeri HEP (2nd, 3rd & 4th quarter of 2013-14) and Tehri HEP have been assumed same as billed in H1 period.

d) PGCIL charges have been assumed same as actual billed during H1 period.

e) Banking- Cost of banking for H2 is assumed same as that for H1 i.e. 342 Ps/unit. Open access charges for banking (export) has been assumed at 12 Ps/Unit .

f) For new hydro plants Rampur HEP of SJVNL & Koldam HEP, unit energy charges have been assumed as 394.00 Ps/ Unit. Further, the energy of Rampur HEP is being scheduled but due to absence of tariff Order the bills are not being raised by SJVNL. Hence the energy actually scheduled by Rampur in H1 (2014-15) has been taken in H2 (2014-15).

g) Rate of energy from Tala HEP is 202 Ps/Unit same as that of H1 (2014-15). Further, Rate of energy from Malana-II HEP has been taken as 363 Ps/Unit as per provisional tariff allowed by PSERC same as that of H1(2014-15).

h) For Sasan UMPP, second year tariff of variable price of 57.66Ps/Unit and fixed charges of 12.92 Ps/Unit has been considered.

i) For Mundra UMPP, variable rates equal to 144.31 Ps/Unit for the month of September 2014 has been. Fixed charges are assumed pro-rata to those billed in H1 period. The variable rate of 145.30 Ps./unit has been considered for H2 of FY 2014-15.

j) **For IPPs in Punjab :-**

a. For NPL, Rajpura, Variable rates of September 2014 is 247.96 ps/unit & the same variable rate of 247.96 Ps/Unit have been considered for H2 of FY 2014-15.

b. For Talwandi Saboo, Variable rates of July 2014 is 211.81 ps/unit (as the plant had run only for few days in July and has not run otherswise in H1) & the same variable rate of 211.81 Ps/Unit have been considered for H2 of FY 2014-15.

k) Energy rates of NRSE power and power through NVVNL has been assumed same as average rate of H1 period.

l) The surplus energy during H2 period has been surrendered. Surrendering has been done as per the merit order of power purchase from existing thermal and gas plants. Merit order is based upon the variable rates of September 2014. After surrender of energy, only variable charges have been reduced and fixed/other charges are assumed same.

5.4.9. Assumptions for projections for FY 2015-16

a) Variable charges for all thermal, gas and nuclear plants already supplying power under long term contracts have been assumed 5% higher than actual variable charges for the month of September 2014. For existing hydro plants, variable charges are based upon the applicable AFC.

b) The AFC for existing central sector plants for FY 2015-16 has been assumed same as applicable for FY 2014-15. The fixed charges (FC) for all existing Central sector plants have been calculated based upon the AFC, past three-year average entitlement and past three years plant availability. The water usage charges for NHPC stations are assumed same as per unit rate of water charges for FY 2013-14 and income tax charges for Nathpa Jhakeri HEP and Tehri HEP has been assumed same as that for FY 2013-14.

c) PGCIL charges have been calculated based upon the PoC slab rates of FY 2013-14. The existing as well as upcoming interstate plants have been considered.

d) Banking - Cost of banking for FY 2015-16 has been assumed same as that of FY 2014-15 i.e. 342 Ps/unit.

e) For new hydro plants of Rampur HEP of SJVNL the energy charges have been assumed as 394.00 Ps/ Unit. Further, energy rate of Tala HEP is assumed at 202 Ps/Unit. The rate of energy from Malana-II HEP has been taken as 363 Ps/Unit as per provisional tariff allowed by PSERC.

f) For Sasan UMPP, third year tariff of variable charges of 114.8 Ps/Unit is considered and FC are calculated on the basis of PAFY has been considered.

g) For Mundra UMPP & Pragati Bawana, variable charges are assumed to equal to 5% higher than month of September 2014 and fixed charges are assumed pro-rata to those calculated for FY 2014-15.

h) **For IPPs in Punjab-**

a. For NPL, Rajpura TPS, variable charges of September 2014 has been escalated by 5% i.e. 260.36 Ps/unit & fixed charges are calculated as per schedule 11 rate i.e.136.17 Ps/unit taking NAPF as 85% have been considered.
b. For Talwandi Sabo, variable charges of H2 (14-15) has been escalated by 5% i.e. 222.40 Ps/Unit & fixed charges are calculated as per PPA Schedule 11 rate been assumed.
c. For GVK TPS the energy charges has been assumed same as that of previous (ARR 2014-15) as 253 paise/Unit and fixed charges has been assumed as 164 paise/unit.

i) Energy rates of NRSE power and Bundle power thro. NVVNL has been assumed 5% higher than that of FY 2014-15.

j) The surplus energy during FY 2015-16 has been surrendered. Surrendering has been done as per the merit order of power purchase from existing thermal and gas plants. Merit order is based upon the variable rates assumed for FY 2015-16. After surrender of energy, only variable charges have been reduced and fixed / other charges are assumed same.

5.5. Renewable Purchase Obligation (RPO)

5.5.1. The total amount proposed by PSPCL to comply with the RPO targets for FY 2014-15 has been revised to Rs. 442.49 Crore towards long term NRSE purchase and Rs. 98 Crore towards purchase of RECs. However PSPCL submits that as per PSERC (Renewable Purchase Obligation and its compliance) Regulations, 2011 following targets for RPO

compliance were specified for FY 2011-12 to FY 2014-15.

Table 63 RPO targets

Year	Total	Solar	Non Solar
2011-12	2.4	0.03	2.37
2012-13	2.9	0.07	2.83
2013-14	3.5	0.13	3.37
2014-15	4.0	0.19	3.81

5.5.2. Further PSPCL submits that there is no such target specified in the Regulations for FY 2015-16. Further, PSPCL has proposed Rs. 741.48 Crore towards long term NRSE purchase within Punjab knowing the importance of green energy. The above cost includes purchase of RECs and excludes cost of generation from micro hydel generating stations. This cost for RPO is included in power purchase cost.

5.5.3. PSPCL further submits that it has estimated the shortfall in non-solar RE purchase of 1934 MU and surplus of solar RE purchase of 390.88 MU at the end of FY 2015-16. PSPCL submits that it has considered the long-term NRSE purchase only in FY 2015-16. Further, for meeting the estimated shortfall, it will purchase short term RE energy and RECs as available during FY 2015-16 for fulfilling the requirements.

5.6. Net Power Purchase Cost

5.6.1. Based on above, the actual power purchase cost for FY 2013-14 (as per provisional accounts), the revised estimates for FY 2014-15 and projections for FY 2015-16 have been summarized in following table:

Table 64: Power purchase cost for FY 2013-14, FY 2014-15 and FY 2015-16 (Rs Crore)

Sl. No.	Description	FY 2013-14 (Actual)	FY 2014-15(RE)	FY 2015-16 (Proj)
1	Power purchase cost	8367.34	10380	10677.74
2	Inter-state transmission charges	729.58	854.31	810.38
3	*Sub-total*	9096.92	11233.83	11488.12
4	Intra-state transmission & wheeling charges	1269.64	895.66	931.08
5	**Total**	**10366.56**	**12129.49**	**12419.20**

5.6.2. The above cost has been worked out excluding the adjustment of variable costs for IPPs pertaining to washing, extra transportation, additional cost of fuel due to blending as price of imported coal is till to be approved by Hon'ble Commission, etc. However, PSPCL request the Hon'ble Commission that the same shall be payable as pass through only after the resolving of issues by the Competent Authority.

5.6.3. Further, as per decision of Hon'ble Supreme Court of India, the surcharge of Rs. 295 per MT on the coal mined from the Pachawara (Central) Coal block is payable and the total implication of the same with respect to the coal mined from Pachwara mines since 2006 works out to be Rs. 1503 Crore. PSPCL further submits that the actual impact of the same shall be claimed as pass through as and when the same is paid and the manner in which the same is paid.

5.6.4. It is prayed that total power purchase cost for the FY 2014-15 & FY 2015-16 may be approved as projected by the PSPCL.

6. CAPITAL EXPENDITURE FOR FY 2014-15 & FY 2015-16

6.1. Capital Expenditure

Generation

6.1.1. The capital expenditure for Renovation and modernization activities of the thermal power plants for FY 2013-14, FY 2014-15 & FY 2015-16 in the Power Generation function has been summarized in the table given below:

Table 65: Capital Expenditure planned for Generation Function (Rs. Cr)

Sr. No.	Parameters	2013-14 (Prov.)	2014-15 (RE)	2015-16 (Proj.)
I	**Hydro Electric Projects**			
1	R&M of BBMB power house & Bhakra left bank & Dehar PH	7.58	57.00	80.00
2	R&M of HEP's of PSPCL	48.62	131.31	266.00
4	Mukerian HEP – II	19.87	37.83	35.00
5	R&M of Other Hydel projects (RSD, Shanan power House, MHP Stage I, ASHP, UBDC Stage I & II and Micro Hydel project)	15.50	33.49	60.00
	Total (I)	91.57	259.63	441.00
II	**Thermal Projects**			
1	GHTP Stage-I, Lehra Mohabbat	3.66	12.06	37.00
2	GHTP Stage-II, Lehra Mohabbat	28.35	20.52	10.00
3	R&M under Thermal – GNDTP	96.10	100.46	133.00
4	R&M under Thermal – GGSSTP	33.60	54.09	60.00
	Total (II)	161.71	187.13	240.00
III	**Other Works**			
1	1320 MW State Sector Thermal Project near Mukerian.	0.00	2.00	350.00
2	Computerization of TPPs	0.00	1.00	1.00
3	Institute of Power Management, Patiala.	0.00	0.10	0.00
4	Multistoried Integrated Corporate office complex at Patiala	0.00	0.40	5.00

	Total (III)	0.00	3.50	356.00
	Total Generation (I+II+III)	**253.28**	**450.26**	**1037.00**

Transmission

6.1.2. Capital expenditure planned for network capacity addition, improvement projects for network upto 66 kV, construction of new substations and mini grid substations along with associated transmission lines is provided in the table given below:

Table 66: Capital Expenditure planned related to sub-transmission works (Rs. Cr)

Parameters	2013-14 (Actual)	2014-15 (RE)	2015-16 (Proj.)
Sub-Transmission & associated projects	307.67	469	515.8

Distribution

6.1.3. Distribution function requires regular capital expenditure for network capacity addition and improvement works. The improvement in the network will lead to reduction of distribution losses in the network. The capital expenditure under the distribution function for various schemes has been projected in the following table.

Table 67: Capital Expenditure planned related to distribution function (Rs. Cr)

Sr. No.	Parameters	2013-14 (Prov.)	2014-15 (RE)	2015-16 (Proj.)
1	Normal development works including SI schemes	1116.47	686.00	410.30
2	Shifting of Meters out of consumer premises (Demand side management measures)		182.00	220
3	Civil works of Grid substations (Control room building & surrounding areas) under CE/West Zone, PSPCL Bathinda		15.00	0
4	Rural Electrification : Providing 11 KV manual Operative switch Gears		5.00	5.7
5	Release of Tubewell connections for general connections and sem-affected area		120.00	132
6	Comprehensive T&D losses reduction plan	56.64	35.00	33
7	Works relating to APDRP-II Part-A	41.75	150.00	50
8	Works relating to APDRP-II Part B		350.00	900
9	IT in Distribution offices	0.00	20.00	22
10	RGGVY - Single Point connections to BPL families	1.15	0.00	0.00
11	ME lab	0.00	2.00	2.2
	Total Capital Expenditure – Distribution	**1216.01**	**1565.00**	**1775.20**

Overall Capex for PSPCL

6.1.4. The planned capital outlay of PSPCL for FY 2013-14, FY 2014-15 and FY 2015-16 has been summarized in the table given below:

Table 68: Capital Expenditure planned for PSPCL (Rs Cr)

Sr. No.	Parameters	2013-14 (Prov.)	2014-15 (RE)	2015-16 (Proj.)
1	Generation related	253.28	450.26	1037.00
2	Sub-Transmission & associated projects	307.67	469	515.8
3	Distribution works	1216.01	1565.00	1775.20
4	Non-plan expenditure	60.74	20.8	0
	Total	**1837.7**	**2505.06**	**3328**

6.1.5. The PSPCL prays to the Hon'ble Commission to approve the projected capital expenditure for the FY 2014-15 and FY 2015-16.

6.2. Depreciation Expenses

6.2.1. The Depreciation expenses for FY 2014-15 & FY 2015-16 have been calculated based on the average rate of depreciation of 3.97%, which is applied across the asset classes on the opening balance of the years and assets addition during the year.

6.2.2. The following table summarizes the projected depreciation and the details of gross fixed assets for FY 2013-14, FY 2014-15 & FY 2015-16.

Table 69: Depreciation for FY 2013-14, FY 2014-15 and FY 2015-16 (Rs Cr)

Sr. No.	Item	Assets as on April 1 of 2013	Depreciation for FY 2013-14 (Prov.)	Assets as on April 1 of 2014	Depreciation for FY 2014-15 (RE)	Assets as on April 1 of 2015	Depreciation for FY 2015-16 (Proj.)	Assets as on April 1 of 2016
1	Thermal	12444.28	185.32	12509.72	499.63	12660.33	502.62	12660.33
2	Hydel	10784.42	232.07	10821.69	429.62	10821.69	434.78	11081.55
3	Sub-Total (Generation)	23228.70	417.39	23331.41	929.25	23482.02	937.40	23741.88
4	Distribution	16594.59	433.52	17561.20	747.03	20072.75	839.81	22235.30
5	Others	1328.07	10.33	1335.88	10.00	1335.88	9.50	1335.88
6	Sub-Total	41151.36	861.24	42228.49	1686.28	44890.65	1786.71	47313.06
7	Less: Revalued amount of Land/Depreciation on Revalued amount	0	0	18422.00	731.35	18422	731.35	18422
8	Total after revaluation	0		23806.49	954.93	26468.65	1055.36	28891.06
9	Total	41151.36	861.24	23806.49	954.93	26468.65	1055.36	28891.06

6.2.3. It is submitted that the Hon'ble Commission may kindly approve the depreciation charges for FY 2014-15 and FY 2015-16 projected as above.

6.3. Return on Equity

6.3.1. The Hon'ble Commission has approved a return on equity for FY 2014-15 at the rate of 15.5% worked out at Rs. 942.62 Cr on an equity base of Rs. 6081.43 Cr as per the submission made by PSPCL on notification of final FRP scheme in December 2012.

6.3.2. Accordingly, PSPCL has projected the RoE for FY 2014-15 and FY 2015-16 based on the rate of 15.5% (net) on the equity base of Rs. 6081.43 Cr. The RoE proposed by PSPCL in accordance with the above is summarized in the table given below:

Table 70: Projected RoE for FY 2014-15 and FY 2015-16 (Rs Cr)

Description	FY 2014-15 (RE.)	FY 2015-16 (Proj.)	Remarks
Return on Equity	942.62	942.62	Calculated based on 15.50% rate on Government equity holding of Rs 6081.43 Cr. Additions of assets would be financed through funds raised from debt market

6.3.3. The PSPCL prays to the Hon'ble Commission to approve the projected RoE for FY 2014-15 (RE) and FY 2015-16 (Projections) as shown in the table above.

6.4. Interest Expenses

6.4.1. It is submitted that PSPCL has planned significant capital works on various schemes of Generation, Distribution and sub-Transmission works as detailed in previous section on capital expenditure. PSPCL has to raise long term loans from various financial institutions to finance these capital works.

6.4.2. The interest expenses have been projected on the basis of the current outstanding loans and new loans to be taken corresponding to the planned capital expenditure, loan repayment schedule and the interest rate charged to the respective loans in the period. For the new loans considered to fund the investment outlay, it has been assumed that average of the opening balance of the new loans and the closing balance of the new loans be considered for the calculation of the interest expense.

6.4.3. Details of source wise outstanding loans and the additional loans taken/ to be taken for first half of FY 2014-15, second half of FY 2014-15 and FY 2015-16 are detailed in the following tables. The FY 2014-15 (H1) figures are on actual basis while the figures for FY 2014-15 (H2) and FY 2015-16 are based on projections:

Table 71: Loan details for FY 2014-15 - H1 (Rs. Crore)

Sr. No.	Source of loans	Balance as on 1st Apr 2014	Rate of interest	Addition during Apr-Sep 14	Repayment during Apr-Sep 14	Balance as on 30th Sep 2014
1	Non SLR Bonds	340.00	9.01%-10.15%	0.00	0.00	340.00
2	LIC	6.34	11.00%	0.00	6.34	0.00

Sr. No.	Source of loans	Balance as on 1st Apr 2014	Rate of interest	Addition during Apr-Sep 14	Repayment during Apr-Sep 14	Balance as on 30th Sep 2014
3	Scheme Loans (REC)					
i)	T &D Scheme Loans	4236.49	8.00%-13.50%	349.57	261.72	4324.34
ii)	Generation Schemes	1105.26	7.00%-13.50%	107.57	169.59	1043.24
4	Long term Loans	1755.50	8.45%-12.50%	100.00	132.97	1722.53
5	PFC	134.29	7.16%-12.75%	0.00	8.86	125.43
6	GPF	2088.98	0.00	0.00	110.76	1978.22
7	CSS					
i)	APDRP	58.25	10.50%-12.50%	0.00	2.52	55.73
ii)	R-APDRP	381.57	9.00%-11.50%	0.00	0.00	381.57
8	RBI bonds/ State Govt. Loan	91.46	0.00	0.00	0.00	91.46
9	Working Capital loan	11660.19	11.10%-12.75%	891.63	1000.12	11551.70
10	Total	21858.33	0.00	1448.77	1692.88	21614.22

Table 72: Loan details for FY 2014-15 – H2 (Rs Cr)

Sr. No.	Source of loans	Balance as on 1st Oct 2014	Rate of interest	Addition during Oct 14 - Mar 15	Repayment during Oct 14 - Mar 15	Balance as on 31st Mar 2015
1	Non SLR Bonds	340.00	9.01%-10.15%	0.00	0.00	340.00
2	LIC	0.00	11.00%	0.00	0.00	0.00
3	Scheme Loans (REC)					
i)	T &D Scheme Loans	4324.34	8.00%-13.50%	0.00	257.01	4067.33
ii)	Generation Schemes	1043.24	7.00%-13.50%	0.00	109.06	934.18
iii)	Long term Loans REC/PFC (Annual Plan)	0.00	12.50% (3 Months)	1026.86	0.00	1026.86
4	Commercial Banks					
i)	Long Term Loans	1722.53	8.45%-12.50%	200.00	156.79	1765.74
ii)	Long Term Loans (Annual Plan)	0.00	12.25% (3 Months)	400.00	0.00	400.00
5	PFC Limited	125.43	7.16%-12.75%	0.00	8.86	116.57
6	GPF	1978.22	0.00	0.00	110.76	1867.46
7	CSS					
i)	APDRP	55.73	10.50%-12.50%	0.00	3.80	51.93
ii)	R-APDRP	381.57	9.00%-11.50%	0.00	0.00	381.57
8	RBI bonds/ State Govt. Loan	91.46	0.00	18.00	85.73	23.73
9	Working Capital loan	11551.70	11.10%-12.75%	928.25	979.95	11500.00
10	Total	21614.22	0.00	2573.11	1711.96	22475.37

Table 73: Loan details for FY 2015-16 (Rs Cr)

Sr. No.	Source of loans	Balance as on 1st Apr 2015	Rate of Interest	Addition during the Period	Repayment during the Period	Balance as on 31st Mar 2016
1	Non SLR Bonds	340.00	9.01%-10.15%	0.00	0.00	340.00
2	Non SLR Bonds (Annual Plan)	0.00	10.50%	300.00	0.00	300.00
3	LIC	0.00	0.00	0.00	0.00	0.00
4	**Scheme Loans (REC Ltd.)**					
i)	T &D Scheme Loans	4067.33	8.00%-13.50%	0.00	449.61	3617.72
ii)	Generation Schemes	934.18	7.00%-13.50%	0.00	298.23	635.95
iii)	Long term Loans REC/PFC (Annual Plan)	1026.86	12.5% (6 months)	2000.00	0.00	3026.86
5	**Commercial Banks**					
	Long Term Loans	1765.74	8.45%-12.50%	0.00	295.72	1470.02
6	Long Term Loans (Annual Plan)	400.00	12.25% (6 Months)	700.00	0.00	1100.00
7	PFC Limited	116.57	10.50%-12.75%	0.00	17.73	98.84
8	GPF	1867.46	0.00	0.00	221.52	1645.94
9	**CSS**					
i)	APDRP	51.93	10.50%-12.50%	0.00	6.33	45.60
ii)	R-APDRP	381.57	9.00%-11.50%	0.00	0.00	381.57
8	RBI bonds/ State Govt. Loan	23.73	0.00	5.00	28.73	0.00
9	Working Capital loan	11500.00	11.75%-12.75%	1813.00	2063.00	11250.00
10	**Total**	**22475.37**		**4818.00**	**3380.87**	**23912.50**

The following table summarizes the source wise interest and finance charges for PSPCL for FY 2013-14 (actual), FY 2014-15 – H1 (actual), FY 2014-15 – H2 (RE) and FY 2015-16 (Proj) based on the details of loans provided in the tables above.

Table 74: Interest and Finance Charges (Rs Crore)

Sr. No.	Source of Loans	FY 2013-14 (Provisional)	FY 2014-15 H1 (Provisional)	FY 2014-15 – H2 (Proj.)	FY 2015-16 (Proj.)
1	Non SLR Bonds	33.33	12.83	20.55	49.13
2	LIC	0.96	0.35	0.00	0.00
3	REC	635.86	331.01	365.74	831.55
4	Commercial Banks (Long Term)	195.32	95.22	131.21	283.83
5	PFC	12.53	6.96	7.40	13.26
6	GPF	188.25	0.00	169.00	149.00
7	CSS/APDRP	44.99	21.62	22.90	44.62
8	Working Capital Loans	1386.23	658.80	735.25	1387.75
9	Interest to Consumers	140.25	0.00	160.00	180.00
10	Others	4.19	0.00	0.00	0.00

Sr. No.	Source of Loans	FY 2013-14 (Provisional)	FY 2014-15 H1 (Provisional)	FY 2014-15 – H2 (Proj.)	FY 2015-16 (Proj.)
10	TOTAL	2641.91	1126.79	1612.05	2939.14
11	State Govt Loans	22.00	0.00	18.00	5.00
12	**TOTAL(13+14)**	2663.91	1126.79	1630.05	2944.14
	Less:Capitalistion	290.71	0.00	338.00	416.00
13	**Net Interest**	2373.20	1126.79	1292.05	2528.14
14	Finance Charges	40.26	0.00	52.73	65.00
15	**Total Interest And Finance Charges**	**2413.46**	**1126.79**	**1344.78**	**2593.14**

6.4.4. PSPCL is dependent on short-term loans for meeting its working capital requirements. The interest on working capital as approved by the Hon'ble Commission for FY 2014-15 in the Tariff Order for FY 2014-15 was Rs. 349.46 Crore assessed as per the Regulation 30 of the Terms and Conditions for Determination of Tariff Regulations. Further, Hon'ble Commission has assessed the working capital requirement at Rs. 3109 Cr for FY 2014-15 and the interest was arrived at by applying an interest rate of 11.24% as per weighted average rate of existing short term & long term loans.

6.4.5. Hon'ble Commission in tariff Order for FY 2014-15 approved the interest on loans of Rs. 339.68 Crore taken to replace recalled GoP loans. PSPCL further submits that as regards the same, the amount of loans to Rs, 3022.10 Crore to replace re-called GoP loans has been considered for the interest computation. PSPCL humbly request the Hon'ble Commission to consider the same for FY 2014-15 and FY 2015-16.

6.4.6. PSPCL further submits that Hon'ble Commission in Tariff Order for FY 2014-15 has allowed the interest on loan taken in lieu of adjustment of Rs. 981.93 Crore during FY 2012-13. PSPCL requests the Hon'ble Commission to consider interest on the amount of Rs. 981.93 Crore along with carrying costs. Further, the PSPCL request the Hon'ble Commission to consider the further adjustments of RBI bonds against subsidy of Rs. 63.73 Crore for FY 2012-13 and Rs. 63.73 Crore for FY 2013-14 and allow the interest on the same along with carrying costs.

6.4.7. Hon'ble Commission in its tariff Order for FY 2014-15 has approved the interest on delay payments of subsidy of Rs. 211.44 Crore and carrying cost of Rs. 379.95 Crore as under:

> *"9.4.4 GoP is also liable to pay an amount of ₹206.01 crore (as discussed in para 2.18.2 of Tariff Order for FY 2011-12) on account of non-refund of excess interest paid by PSPCL to GoP. Also, as per para 2.15.12 of this Tariff Order, the amount payable by GoP to PSPCL on account of share of disallowance for diversion of capital funds for revenue purposes has been worked out to ₹5.43 crore.* ***Thus, the total amount payable to PSPCL by GoP works out to ₹211.44 (206.01+5.43) crore.***

GoP is advised to make payment of ₹211.44 crore to PSPCL as discussed in para 2.19 of this Tariff Order.

*9.4.5 GoP is also to pay **an amount of ₹379.95 crore on account of carrying cost** to PSPCL as discussed in para 6.23 of this Tariff Order." (emphasis added)*

In view of the above, PSPCL vide letter Memo No. 2258 dated 16 September, 2014 requested the GoP for sanction of Rs. 379.95 Crore as approved by the Hon'ble Commission. PSPCL is yet to receive this amount from GoP.

PSPCL further humbly request the Hon'ble Commission to consider the amount of Rs. 211.44 Crore and Rs. 379.95 crore as bridge loan (as PSPCL had to borrow additional working capital loans) and allow interest on them for FY 2012-13, FY 2014-15 and FY 2015-16.

6.4.8. To improve the operational efficiency of the PSPCL, extensive capital expenditure plan has been proposed as provided in this tariff Petition. In order to finance the proposed capital expenditure, PSPCL has to raise long term loans from REC, PFC, Commercial banks, etc. which increases the interest liability.

6.4.9. Further, PSPCL had to advance loan to PSTCL in light of the Transfer scheme which transferred loans to PSTCL while corresponding assets were not transferred. As the PSTCL was unable to pay the loan to PSPCL, the utility had to borrow from the market and the interest on such loan should be allowed separately to the PSPCL as this loan was imposed on the utility by the Government notification.

6.4.10. In view of above it is prayed that the Commission may kindly approve the total interest on loans as projected by the PSPCL as they are uncontrollable in nature.

Operating Expenses for FY 2014-15& FY 2015-16

6.5. Repair and Maintenance Expense

6.5.1. PSPCL has been undertaking pro-active repair & maintenance of assets of generation and distribution function. It is submitted that upkeep of the generation, sub-transmission and distribution equipment is pre requisite to reasonable availability, reliability and quality of supply & consumer service.

6.5.2. PSPCL submits that Regulation 28 of PSERC Tariff Regulations, 2005 allows the R&M expenses on normative basis. As per Regulation 28 of PSERC Tariff Regulations, 2005, R&M expenses shall be determined by applying the average rate (on monthly basis) of Wholesale Price Index (all commodities) over the year to base R&M expenses. Accordingly, PSPCL has computed the R&M expenses for FY 2014-15 and FY 2015-16.

R&M for additional assets added during the year

6.5.3. In addition, PSPCL submits that as per PSERC Tariff Regulation 28 (6), O&M expenses for gross fixed assets added during the year are to be considered on a pro-rata basis from the date of Commissioning.

6.5.4. The additional R&M expense has been considered for a period of six months. It has been calculated by multiplying the average assets added during the year with the ratio of R&M costs & closing GFA (excluding land) in the provisional annual accounts for FY 2013-14. The assets added during the FY 2014-15 and FY 2015-16 have been estimated Rs. 2662.16 Crore and Rs. 2422.41 Crore respectively.

6.5.5. The following table summarizes the actual R&M costs for FY 2013-14, revised estimates for FY 2014-15 and projections for FY 2015-16.

Table 75: R&M Charges for FY 2013-14, FY 2014-15 and FY 2015-16 (Rs Cr)

Sr. No.	Item	FY 2013-14 (Provisional)	FY 2014-15 (RE)	FY 2015-16 (Proj.)
1	Base R&M Expenses for FY 2011-12	504.15	541.28	584.75
2	WPI (%)	5.98%	4.73%	4.73%
3	R&M expenses applying WPI	534.29	566.88	612.40
4	R&M expenses on assets additions during the year	6.99	17.87	16.52
5	Total R&M Expenses for FY 2012-13	541.28	584.75	628.92

6.5.6. PSPCL prays to the Hon'ble Commission to approve the R&M costs as projected for the FY 2014-15 and FY 2015-16.

6.6. Administrative and General Expenses

6.6.1. PSPCL submits that Regulation 28 of PSERC Tariff Regulations, 2005 allows the A&G expenses on normative basis. As per Regulation 28 of PSERC Tariff Regulations, 2005, A&G expenses shall be determined by applying the average rate (on monthly basis) of Wholesale Price Index (all commodities) over the year to base A&G expenses. Accordingly, PSPCL has computed the A&G expenses for FY 2014-15 and FY 2015-16.

A&G for additional assets added during the year

6.6.2. In addition, PSPCL submits that as per PSERC Tariff Regulation 28 (6), O&M expenses for gross fixed assets added during the year are to be considered on a pro-rata basis from the date of Commissioning.

6.6.3. The additional A&G expense has been considered for a period of six months. It has been calculated by multiplying the average assets added during the year with the ratio of A&G

costs & closing GFA (excluding land) in the provisional annual accounts for FY 2013-14. The assets added during the FY 2014-15 and FY 2015-16 have been estimated Rs. 2662.16 Crore and Rs. 2422.41 Crore respectively.

6.6.4. PSPCL submits that as per first proviso of Regulation 28(2)(b) of PSERC Tariff Regulations, 2005, it has considered the annual licence fees and fees for determination of tariff over and above normative expenses.

6.6.5. The following table summarizes the actual A&G costs for FY 2013-14, revised estimates for FY 2014-15 and projections for FY 2015-16.

Table 76: A&G Charges for FY 2013-14, FY 2014-15 and FY 2015-16 (Rs Crore)

Sr. No.	Item	FY 2013-14	FY 2014-15	FY 2015-16
1	Base A&G Expenses	124.78	144.78	167.12
2	WPI (%)	5.98%	4.73%	4.73%
3	A&G expenses applying WPI	132.24	151.63	175.65
4	A&G expenses on asset addition during the year	1.73	4.78	4.74
5	Licence fees, fees for determination of tariff	10.81	11.31	11.31
6	**Total A&G Expenses for FY 2012-13**	**144.78**	**167.12**	**191.69**

6.6.6. PSPCL prays to the Hon'ble Commission to approve the projected A&G expenses for the FY 2014-15 and FY 2015-16.

6.7. Employee Cost

6.7.1. The employee costs for the PSPCL comprises of salaries & allowances of employees of PSPCL, expenses by PSPCL for ex-PSEB employees and BBMB Share.

6.7.2. The following table summarizes the actual employee costs for FY 2013-14, revised estimates for FY 2014-15 and projections for FY 2015-16.

Table 77: Employee cost for FY 2013-14, FY 2014-15 and FY 2015-16 (Rs Cr)

Sr. No.	Particulars	2013-14 (Provisional)	2014-15 (RE.)	2015-16 (Proj.)
1	**Salaries & Allowances**			
2	Basic Pay	1112.78	1130.73	1136.38
3	Overtime	9.01	10.00	10.00
4	Dearness Allowance	827.07	1192.35	1321.52
5	Fixed medical Allowance	27.56	26.52	25.47
6	Conveyance Allowance	35.39	36.00	35.00
7	Other Allowances	176.77	170.00	172.00
8	Bonus/ Generation Incentive	49.45	50.00	50.00
9	Medical Expenses Reimbursement	16.56	18.00	20.00

Sr. No.	Particulars	2013-14 (Provisional)	2014-15 (RE.)	2015-16 (Proj.)
10	**Total**	2254.59	2633.60	2770.36
11	**Terminal Benefits**	0.00	0.00	0.00
12	Earned Leave Encashment	136.61	145.00	152.00
13	Gratuity (including arrear)	236.15	250.00	262.00
14	Commutation of Pension/ progressive funding for terminal benefit as per FRP	0.00	0.00	0.00
15	Workman's compensation	0.07	0.10	0.10
16	Arrear of Pay	187.13	0.00	0.00
17	Ex-gratia	0.00	0.00	0.00
18	Fringe Benefit Tax	0.00	0.00	0.00
19	Progressive Funding of Terminal Benefits as per FRP	0.00	0.00	830.50
20	**Total**	559.96	395.10	1244.60
21	**Pension Payments**	0.00	0.00	0.00
22	Basic Pension	0.00	0.00	0.00
23	Dearness pension	1012.57	1193.18	1272.27
24	Dearness Allowance	0.00	0.00	0.00
25	Any other expense	104.65	115.53	126.05
26	**Total**	1117.22	1308.71	1398.32
27	**Total Expenses**	3931.77	4337.41	5413.28
28	Less: Amount capitalised	136.91	140.00	170.00
29	**Net amount**	3794.86	4197.41	5243.28
30	Add: BBMB share	205.48	226.03	237.33
31	**Net Employee's Cost**	4000.34	4423.44	5480.61

6.7.3. The above employee expenses have been projected in the following manner:

a) For projecting increase in basic pay for FY 2014-15 and FY 2015-16, net increment of 3% has been considered over actual cost incurred during FY 2013-14 and revised estimated for FY 2014-15, respectively; further the impact of retirees and new joinee's during the year have also been adjusted while estimating the increment cost.

b) The Dearness allowance (DA) for FY 2014-15 has been estimated based on 90% of the basic pay for the period of 12 months, increase of 10% for period of 15 months, increase of 7% for period of 9 months and a further addition of 100% on account of new joinees. The DA for FY 2015-16 has been estimated at 107% of the projected basic pay for the year for period of 12 months, additional increase of 6% applicable for period of 15 months, increase of 6% applicable for period of 9 months and further addition of 100% on account of new joinees.

c) For projecting the overtime expenses, fixed medical allowance, medical expenses reimbursement, leave travel assistance (LTA), leave travel concession (LTC) and staff welfare expenses for FY 2014-15, the actual expenditure upto first half of FY 2014-15 has been considered as base. Further, for FY 2015-16, expenditures under these heads are estimated based on the revised estimates of FY 2014-15.

d) Basic pension for FY 2014-15 is estimated based on actual expenditure incurred during FY 2013-14 after reducing the amount of DA for the year. Pension for current year is added back based on 50% of basic pay adjusted for retirees during the year. Similar approach is followed for FY 2015-16, wherein base is kept as revised estimates of the cost for FY 2014-15.

e) DA for pension is estimated separately in line with DA paid for existing employees as provided in Sr. b) above for FY 2014-15 and FY 2015-16. In addition to above, arrears of DA paid for past year amounting to Rs 32 Crore is also included in FY 2014-15.

f) Gratuity has been projected based on past trend. However the cost of gratuity is increasing as it also includes arrear for past period.

g) Bonus/ generation incentive has been linked to actual paid out during the first half of FY 2014-15. For the FY 2015-16 the generation incentive is same as revised estimate for FY 2014-15.

h) Other than above, an increase of 5% has been considered from the actual employee cost for estimating the remaining components of employee cost for the FY 2014-15 and FY 2015-16.

i) The progressive funding of terminal benefits as per the FRP notified in December 2012 by GoP for terminal benefits estimated upto FY 2010-11 has been considered to be paid out in 15 annual instalments in ratio of 88.64:11.36 by PSPCL and PSTCL respectively beginning from FY 2014-15. Accordingly, amount of Rs.830.5 Cr is estimated to be paid out during FY 2015-16. Further PSPCL would like to say that an amount of Rs. 914 Crore has not been claimed in this Petition for FY 2014-15 as the matter is to be decided by Hon'ble ATE.

6.7.4. PSPCL submits before the Hon'ble Commission that it is making constant efforts to rationalize the manpower and the high employee costs for which the detailed submissions have already been made in the Section I of this ARR & tariff petition. In the light of the above, it is prayed that the Hon'ble Commission may consider and approve the employee expenses proposed for the FY 2014-15 and FY 2015-16.

6.8. DSM Fund

6.8.1. PSERC has notified DSM regulations on 16 March 2012. As per clause 1.8 of these regulations, PSPCL is allowed to recover costs incurred in any DSM related activity including planning, conducting load survey / research, designing, implementing, monitoring and evaluating DSM programs by adding the costs to the Annual Revenue Requirement (ARR) to enable their funding through tariff structure or by implementing programs at the consumer premises that would attract appropriate return on investment.

6.8.2. Regulation 15 of Clause 15 of the DSM Regulations reads as under:

"In order to qualify for cost recovery, each DSM programme must be
(i) approved by the Commission prior to implementation
(ii) implemented in accordance with approved DSM plan; and
(iii) Implemented cost effectively."

6.8.3. Accordingly, PSPCL has claimed Rs. 40.76 Core towards creation of DSM fund. The Hon'ble Commission in tariff Order of FY 2014-15 approved provisional amount of Rs. 40.76 Crore for implementation of various DSM programs as per DSM Regulations for FY 2014-15. However, the PSPCL submits that it is very difficult for it to implement demand side measures to manage demand efficiently and requires to take measures from technical experts in this field and active participation of consumers. Further as this expenditure is to be incurred to provide benefits to end consumers to reduce their bills by managing demand effectively, it is correct to levy direct charge to them for recovery of any expenditure incurred on such account. In view of the above, PSPCL submits the revised amount of Rs. 5 Crore for creation of DSM fund for FY 2014-15.

6.8.4. Further, PSPCL proposes to create a DSM fund for funding the DSM activities. It is submitted that total amount of Rs. 10 Crore has been proposed for FY 2015-16 and humbly requests the Hon'ble Commission to approve the same.

7. REVENUE FOR FY 2014-15 & FY 2015-16

7.1. Revenue from sale of power in FY 2014-15 and FY 2015-16

7.1.1. Revenue from sale of power for FY 2014-15 and FY 2015-16 has been determined based on the energy sales estimated in the previous sections and category wise tariff approved by the Commission in its Tariff Order 2014-15.

7.1.2. Revenue from sale of power for FY 2014-15 and FY 2015-16 is estimated considering existing category wise tariff rates approved by the Commission without taking any effect of subsidy expected. The revenue expected for current year and ensuing year(s) is shown in the table given below:

Table 78: Revenue for FY 2014-15 and FY 2015-16 (Rs Crore)

Sr. No.	Category of consumers	FY 2013-14 (Provisional.)	FY 2014-15 (RE)	FY 2015-16 (Proj.)
1	Domestic	5260.35	6221.41	6776.80
2	Non-Residential Supply	1942.09	2166.32	2315.09
3	Small Power	510.09	540.25	554.15
4	Medium Supply	1166.04	1239.50	1270.89
5	Large Supply	6299.89	7272.24	7616.03
6	Public Lighting	122.63	125.02	136.08
7	Bulk Supply	380.46	407.01	426.46
8	Railway Traction	81.33	102.52	102.39
9	**Sub-total metered sales within State**	**15762.88**	**18074.25**	**19197.88**
10	Agriculture	3837.34	4939.54	5186.52
11	Common Pool	131.46	144.30	145.70
12	Outside State	44.1204	7.58	5.62
13	Theft	55.95	0.00	0.00
14	Add: PLEC, MMC etc.	745.31	745.00	745.00
15	Less: Rebate to Consumer catered to High Voltage		-143.75	-143.75
16	Less: TOD Rebate due to extension of two months and rate from Rs. 1 to 1.50 and extension to MS		-132.00	-132.00
17	Less: Revenue due to increased metered sale		-271.13	-461.16
18	Impact of TOD rebate for adjusting the PLEC		-129.00	-129.00
19	Surcharge	-114.5	0.00	0.00
20	**GRAND TOTAL**	**20462.56**	**23234.80**	**24414.81**

7.1.3. PSPCL has considered the rebate to consumer to high voltage of Rs. 143.75 Crore and ToD rebate due to extension of two months and revision in rate of Rs. 132 Crore for FY 2014-15 and FY 2015-16. PSPCL has also considered the impact of TOD rebate of Rs. 129 Crore for adjusting the PLEC for FY 2014-15 and FY 2015-16. Further, PSPCL has also considered the revenue of Rs. 271.13 Crore and Rs. 416.16 Crore on account of increase in metered sale over metered sale of FY 2013-14 at 10 ps/unit. Also, the

7.1.4. As per the current policy of the Govt. of Punjab, Domestic consumers belonging to SC category with connected load up to 1000 watts will be given 200 units of free power per month. Similarly, Non-SC BPL Domestic Consumers with connected load up to 1000 watts will be given 200 units free power per month. Also AP consumers are given free power in view of Govt. policy.

7.1.5. The details of subsidy receivable during FY 2013-14 as per the provisional accounts for the year has been summarized in table below:

Table 79: Details of subsidy receivable for FY 2013-14 (Rs Cr)

Particulars	No. of consumers	Consumption as per account (in Mus)	Revenue Required			Revenue actually receivable from consumers	Total amount of subsidy due from GOP	Amount of subsidy received from GOP	Amount of subsidy received from GOP excess/short (+/-)
			Energy Charges (Rs Cr)	Meter rental & service charges (Rs Cr)	Total (Rs Cr)				
1	2	3	4	5	6	7	8	9	10
(i) AP Consumers	1223066	10224.00	4370.84	9.00	4379.84	0.00	4379.84	4815.00	-422.32
(ii) Scheduled Castes DS Consumers	1174213	1567.24	782.99	20.09	803.08	0.00	803.08		
(iii) Non- SC BPL DS Consumers	90961	105.19	52.68	1.72	54.40	0.00	54.40		
Total	2488240	11896.43	5206.51	30.81	5237.32	0.00	5237.32	4815.00	-422.32

7.1.6. The following tables provide summary of subsidy receivable for FY 2014-15 and FY 2015-16 as per the projections for the period.

Table 80: Details of subsidy receivable for FY 2014-15 (Rs Cr)

Sr. No.	Description	No of Consumers	Consumption (MU)	Revenue Required			Revenue actually receivable from consumers (Rs Cr)	Amount of subsidy due from GOP (Rs Cr)
				Energy Charges (Rs Cr)	Meter rental & service charges (Rs Cr)	Total (Rs Cr)		
1	AP Consumers	1250885	10832.33	4939.54	9	4948.54	0	4948.54
2	Scheduled Castes DS Consumers	1252125	1595	797	20	817	0	817
3	Non- SC BPL DS Consumers	102245	107.1	53.68	1.74	55.42	0	55.42
	Total	2605255	12534	5790	31	5821	0	5821

Note: * Includes additional revenue assessed through levy of FCA on agriculture consumers

Table 81: Details of subsidy receivable for FY 2015-16 (Rs Cr)

Sr. No.	Description	No of Consumers	Consumption (MU)	Revenue Required			Revenue actually receivable from consumers (Rs Cr)	Amount of subsidy due from GOP
				Energy Charges (Rs Cr)	Meter rental & service	Total (Rs Cr)		

				charges (Rs Cr)				(Rs Cr)
1	AP Consumers	1281531	11373.95	5186.52	9.00	5195.52	0	5195.52
2	Scheduled Castes DS Consumers	1339774	1707.03	852.97	21.9	874.87	0	874.87
3	Non- SC BPL DS Consumers	109402	114.59	57.44	1.86	59.3	0	59.3
	Total	2730707	13196	6097	33	6130	0	6130

7.1.7. In addition to the above, the subsidy of Rs. 40.92 Crore on account of waiver of defaulting amount of SC/BPL DS consumers (as on 31 March 2013) is yet to be received from Government of Punjab.

Non-Tariff Income

7.1.8. The non-tariff income for FY 2014-15 and FY 2015-16 has been projected by considering an annual year on year escalation of 5% on the non-tariff income as per provisional accounts for the FY 2013-14. This growth has been envisaged based on the increase of sales assumed and the historical trend. Non-Tariff Income for FY 2013-14, FY 2014-15 and FY2015-16 is provided in the table given below:

Table 82: Non-tariff Income (Rs. Crore)

Sr. No.	Particulars	FY 2013-14 (Actual)	FY 2014-15 (RE)	FY 2015-16 (Proj.)
1	Meter/service rent	95.17	99.93	104.92
2	Late payment surcharge	238.89	109.81	0.00
3	Misc. receipts	272.47	307.33	330.93
4	Misc. charges (except PLEC)	38.43	40.35	42.37
5	Wheeling charges	334.16	342.51	351.08
6	Interest on staff loans & advance	95.11	99.87	104.86
7	Income from trading	36.79	38.63	40.56
8	Income staff welfare activities	0.07	0.07	0.08
9	Excess on verification	0.00	0.03	0.03
10	Investments & bank balances	67.59	25.00	11.00
11	Gain on sale of asset	0.00	0.00	0.00
12	**Total income**	1178.68	1063.53	985.83
13	Add prior period income*	0.00	0.00	0.00
14	BBMB Income	10.65	11.18	11.74
15	**Gross total income**	1189.33	``1074.72	997.57
16	**Less: Late payment surcharge**	238.89	109.81	0
17	**Total Non-tariff Income (15-16)**	**950.44**	**964.91**	**997.57**

7.1.9. The PSPCL prays to the Hon'ble Commission to approve Non-Tariff Income as Rs. 964.91 Crore & Rs. 997.57 Crore for FY 2014-15 and FY 2015-16 after deduction of late payment surcharge.

7.1.10. It is further submitted, that the Hon'ble Commission to not consider the amount against the

late payment surcharge as part of Non-Tariff Income for the purpose of projections for FY 2014-15 and FY 2015-16. It is submitted that the PSPCL's working capital requirements are being determined as per norms, there is no compensation to the PSPCL on account of interest accrued on delayed payments against bills issued. Accordingly, considering the Late Payment Surcharge as Non-Tariff/ Other Income adversely impacts the cash flow position of the PSPCL.

7.1.11. Hon'ble ATE in Judgment dated October 4, 2007 in Appeal No. 223 of 2006 in the matter of M.P. Electricity Consumers' Society C/o AIMO (MPSEB), v/s Madhya Pradesh Poorva/Madhya/Paschim Kshetra Vidyut Vitaran Companies, Madhya Pradesh Electricity Regulatory Commission, Govt. of Madhya Pradesh through Principal Secretary has held that the delayed surcharge revenue shall not be considered. The relevant extract of Judgment in as under:.

> *"On a consideration of contentions of all parties, we are inclined to agree with the decision of the Commission to not include delayed surcharge revenue in the ARR in view of the fact that the working capital amount has been reduced to the bare minimum, 100% collection is not happening as of now, and therefore, to meet its cash requirements, the Discoms will have to borrow from Banks to compensate for the outstanding payments from consumers."*

7.1.12. Several other SERCs and utilities also follow the same approach with respect to income from late payment surcharge. The excerpts from relevant regulations/ orders has been summarized below:

State	Clause No	Relevant extract
Madhya Pradesh State Regulatory Commission	Clause No 2.42 of Terms and Conditions for determination of tariff for supply and wheeling of electricity and methods and principles for fixation of charges Regulation 2009	The late payment surcharge shall not be considered as income for the purpose of determination of gap between Annual Revenue Requirement and Tariff and Other Income.
Madhya Pradesh	APTEL Judgment against Appeal No. 223 of 2006	On a consideration of contentions of all parties, we are inclined to agree with the decision of the Commission to not include delayed surcharge revenue in the ARR in view of the fact that the working capital amount has been reduced to the bare minimum, 100% collection is not happening as of now, and therefore, to meet its cash requirements, the Discoms will have to borrow from Banks to compensate for the outstanding payments from consumers.
Delhi Electricity Regulatory Commission	Clause No. 5.35 of Terms and Conditions for determination of wheeling tariff and retail supply tariff Regulation 2011	All incomes being incidental to electricity business and derived by the Licensee from sources, including but not limited to profit derived from disposal of assets, rents, net late payment surcharge (late payment surcharge less financing cost of late payment surcharge), meter rent (if any), income from investments, income on investment of consumer security deposit and miscellaneous receipts from the consumers shall constitute Non-Tariff Income of the Licensee:

State	Clause No	Relevant extract
NDPL, New Delhi	APTEL Appeal No 153 of 2009	Commission: As regards the delayed payment surcharge collected by the Petitioner during the year, the Commission is of the opinion that there is a financing cost associated with the delayed payment surcharge. Therefore, while computing the delayed payment surcharge, the Commission has deducted the carrying cost of financing the same @ 9% per annum. APTEL Judgment: The financing cost of outstanding dues, i.e. the entire principal amount, should be allowed and it should not be limited to late payment surcharge amount alone. While fixing the interest rate, the State Commission should have considered the prevalent SBI prime lending rate.
Bihar Electricity Regulatory Commission	Tariff Order for FY 2011-12	BSEB submitted that the DPS for delayed or nonpayment of dues by sundry debtors for sale of energy has been treated as accrued to the extent of certainty of its realization. Accordingly only 5% of the total DPS charge has been considered as realizable from the consumer during the year. However, the total amount (i.e. 100%) of DPS has been shown as recoverable from consumers in consumer ledger maintained at field accounting unit whereas 95% of the same will be taken into accounts in the year of its realization. Commission's View: The Commission agrees with the methodology adopted by BSEB to compute non-tariff income. At the same time, the Commission feels that it is necessary to adjust some components of non-tariff income based on recent developments in the sector which do appropriately reflect the past trend. Accordingly the Hon'ble BERC has approved Late payment surcharge (on basis of Collection) as proposed by BSEB.

7.1.13. In view of the above, it is prayed that the Late Payment Surcharge may not be considered by the Hon'ble Commission for determining the Revenue Gap for each of the years under consideration.

8. OVERALL ARR FOR FY 2014-15 & FY 2015-16

8.1. Summary of ARR for FY 2014-15 & FY 2015-16

8.1.1. PSPCL has worked out a net gap of Rs. 11317.76 upto FY 2015-16. The same is inclusive of carrying cost which has been worked out as per the provisions in the tariff regulations. The Regulation 9(4) provides as follows:

"While approving such expenses/revenues to be adjusted in the future years as arising out of the Review and / or Truing up exercises, the Commission may allow the carrying costs as determined by the Commission of such expenses/revenues. Carrying costs shall be limited to the interest rate approved for working capital borrowings."

8.1.2. The overall summary of the proposed ARR FY 2014-15 and FY 2015-16 is provided in the table below. PSPCL requests the Commission to allow the same based on the rationale submitted in this petition.

Table 83: Summary of ARR & Revenue Gap for FY 2014-15 & FY 2015-16 (Rs. Crore)

Sr. No.	Particulars	FY 2014-15 (RE)	FY 2015-16 (Proj.)
1	Cost of fuel	4404.51	5360.10
2	Cost of power purchase	10379.52	11488.12
3	Employee cost	4423.44	5480.61
4	R&M expenses (Normative)	584.75	628.92
5	A&G expenses (Normative)	167.72	191.69
6	Depreciation	954.93	1055.36
7	Interest charges (Net of Capitalization)	2471.57	2593.14
8	Return on Equity	942.62	942.62
9	Transmission Charges Payable to PSTCL	895.66	931.08
10	Royalty Charges payable to Punjab Govt. on Power from RSD	20.00	0.00
11	Provision for DSM fund	5.00	10.00
12	Total revenue requirement	25249.42	28681.53
13	Less Non-Tariff income	964.91	997.57
14	Net Revenue Requirement	24284.50	27683.96
15	Less Revenue from existing tariff	23234.85	24414.81
16	Total (Gap)/surplus for the year	1049.66	3269.26
17	Add consolidated surplus/(gap) up to year	4947.08	6803.85
18	Add carrying cost of Gaps	807.11	1244.68
19	Total cumulative GAP	6803.85	11317.78

8.2. Carrying Cost of Gaps

8.2.1. The carrying costs for FY 2014-15 has been calculated at the advance rate of SBI as on 01.04.2014 i.e. at the rate of 14.75% for the year applied on the accumulated gap till the FY 2012-13. The carrying costs for FY 2015-16 has been calculated at advance rate of SBI as on 01.04.2014 i.e. at rate of 14.75% for half of year applied on accumulated gap till FY 2014-15.

8.2.2. The carrying cost works out to be Rs. 807.10 Crore for FY 2014-15 and Rs. 1244.67 Crore on opening gap for FY 2015-16 (for half year) as detailed in the table below.

Table 84: Carrying Cost in Revenue Gap (Rs Crore)

Sr. No.	Details	FY 2013-14	FY 2014-15	FY 2015-16
1	Opening Revenue Gap	3348.62	4947.03	6803.85
2	Revenue Gap for the Year	1039.44	1049.72	3269.26

Sr. No.	Details	FY 2013-14	FY 2014-15	FY 2015-16
3	**Total Revenue Gap (1+2)**	4388.05	5996.74	10073.09
4	Rate of Interest	0.14	0.15	0.15
5	Carrying Cost on Opening Revenue Gap	483.88	729.69	1003.57
6	Carrying Cost on Revenue Gap for the year	75.10	77.42	241.11
7	**Total Carrying Cost in Revenue Gap (5+6)**	558.97	807.11	1244.68
8	**Total Revenue Gap (3+7)**	**4947.03**	**6803.85**	**11317.78**

8.2.3. PSPCL requests the Commission to kindly allow these carrying costs on the cumulative gap in line the provisions of the state regulations.

8.3. Revenue gap

8.3.1. The revenue gap has been re-estimated for the year FY 2014-15, and the cumulative gap upto FY 2014-15 stands at Rs. 6803.84 Crore.

8.3.2. The proposed ARR for FY 2015-16 stands at Rs. 27683.96 Crore which after considering the impact of revenue from existing tariff leads to an annual revenue gap of Rs. 3269.26 Crore for the FY 2015-16. Considering the gap carried forward from the previous years and the carrying cost, the total Gap upto FY 2015-16 is proposed at Rs. 11317.78 Crore.

8.3.3. PSPCL prays to the Hon'ble Commission to approve the proposed revenue gap at existing tariff for FY 2014-15 and FY 2015-16 and approve appropriate tariff increase/ change so as to cover the proposed gap.

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DIRECTIVES

An overview of the directives issued to PSPCL in Tariff Order for FY 2013-14 & directives for FY 2014-15

Sr. No.	Issues	PSERC's Directives for FY 2013-14	PSERC Comments/ Directives for FY 2014-15	PSPCL reply ending Sept. 2014
8.1	**T&D Loss Reduction**	**(i) Shifting of meters outside consumer premises:** a) **Non APDRP (Rural) Area:** PSPCL should ensure: i) completion of job (20.81 lac meters) under Phase-I as per the revised target i.e 31.03.2013. ii) that out of 17.20 lac meters under Phase II, 5 lac meters shall be shifted departmentally by DS Organization up to 30th June 2013. The work of balance meters for which work is to be got executed on turnkey basis, must be completed by 31st March 2014. **R-APDRP (Urban) Area:-** PSPCL must: i) complete the job of shifting balance meters of the 15 towns (out of 5.55 lac meters), as per the revised target i.e. 31.3.2013.. ii) shift at-least 50% of the balance	Commission notes with concern the slow progress in shifting of balance meters. More than 1/3rd GSC meters are still to be shifted. Also, Commission's directive to shift 5 lac meters departmentally up to 30th June 2013 has not been complied with. The practice of combining the status report of shifting of meters under Non APDRP (Rural) Area & R-APDRP (Urban) Area is not appreciated. A clear cut scheme-wise detail of meters shifted/ to be shifted under Non-APDRP & R-APDRP areas be submitted quarterly to the Commission. It is also a matter of serious concern that PSPCL delayed the submission of DPRs for Phase II and allotted the work of shifting of balance meters under non-APDRP in Oct. 2013 resulting into a delay	Total No. Of GSC Meters ending 09/14 =68.67 lac. Meters that have been shifted outside consumer premises into pillar boxes or outside ending 10/14 =47.385 lac. Balance meters (yet to be shifted) =21.285 lac. ending 10/14 Meters tied under Non APDRP Scheme =8.53 lac. Target for completion 31-3-15 Meters tied under APDRP Scheme =6.985 lac. Target for completion 30-9-15 Meters to be shifted departmentally =5.77 lac. Target for completion 30-6-15 Road Map scheme wise for shifting of meters outside consumer premises is enclosed as Annex-

Sr. No.	Issues	PSERC's Directives for FY 2013-14	PSERC Comments/ Directives for FY 2014-15	PSPCL reply ending Sept. 2014
		meters of remaining towns covered under R-APDRP during 2013-14. Priority be given to towns having high losses.	of 7 months for starting of Phase II after completion of Phase I under which 20.81 lac meters were shifted. Start of Phase II should have been dovetailed with Phase I completion. This has affected the T&D loss reduction programme of PSPCL adversely. Responsibility for this delay need to be fixed by PSPCL and report sent to the Commission within three months of issuance of this Tariff Order. PSPCL must complete the job of shifting the balance meters as per the revised target. The shifting of meters be conducted on priority number one on higher loss feeders and a PERT in this regard be submitted to the Commission along with ARR for 2015-16.	A.

Sr. No.	Issues	PSERC's Directives for FY 2013-14	PSERC Comments/ Directives for FY 2014-15	PSPCL reply ending Sept. 2014
		(ii) Replacement of Electro-mechanical (E/M) meters: The earlier directive was to replace all E/M meters (1ϕ meters and 3 ϕ meters) during 2012-13 but PSPCL failed to meet the target. PSPCL should replace 50% of remaining E/M meters during 2013-14 and balance during 2014-15 with first priority for high loss feeders. It shall be the last extension in the compliance period & any slippage will not be acceptable.	**a)3-ϕ meters: SP/DS/NRS** Commission directs PSPCL to ensure replacement of all 3 phase (other than AP) E/M meters as committed by the targeted date of 30.9.2014. **b)1-ϕ meters (DS/NRS)** PSPCL has failed to comply with the directive to replace 50% of remaining E/M meters during 2013-14 despite clear directions that no further extension shall be allowed. PSPCL was to replace the E/M meters along with shifting of meters. The target for shifting of all meters in Non-APDRP areas is Dec 2014 & in R-APDRP area is July 2015. The replacement must be completed within these target dates.	**a) 3-ϕ meters: SP/DS/NRS** **Total requiring replacement** = 3541 no. ending 9/2014 Electromechanical meters left are in APDRP Towns and are in scope of contractors will be replaced by 30-9-15 along with completion schedule of APDRP part-B scheme. **b) 1-ϕ meters (DS/NRS)** Total Electromechanical meter =1065461 Nos. Under Non APDRP area = 724672 Nos. (Due to financial Constraints of PSPCL and Suppliers constraints approximately 3 lac meters will be replaced with electronic meters annually) Under APDRP areas = 340789 Nos. (replacement of electromechanical meters with electronic meters is covered in scope of contractors carrying out shifting meters outside consumer premises)
		Further it should be ensured that all **dead stop/burnt/ defective meters** are replaced by 31.05.2013 and quarterly status report must be submitted regularly to the	There are still more than 7600 burnt /defective meters prior to June 2013 which are yet to be replaced. This is a gross violation of Standard of Performance approved by the	Instructions had been issued to field offices to replace all burnt/Defective meters as per timeframe given in SOP.

Sr. No.	Issues	PSERC's Directives for FY 2013-14	PSERC Comments/ Directives for FY 2014-15	PSPCL reply ending Sept. 2014
		Commission.	Commission. PSPCL is directed to comply with the time frame mentioned in SoP.	
		(iii) Conversion of LVDS to HVDS: While reiterating its view that: • the proposal of PSPCL to install higher rating Distribution Transformers (DTs) to feed AP connections through LT line up to 200 meters may be counterproductive & result in high line losses. • use of 25 & 63 kVA T/Fs should be avoided as far as possible and if necessary, must not be used to feed more than three AP motors. • instead of ordinary LT cable, aerial bunched conductor should be used to avoid unauthorized running of motors. • possibility of reducing line length from 200 meter to an optimum level may also be	Commission's directive to convert atleast 25% LVDS tubewell consumers into Less LT HVDS per year starting from 2013-14 has not been complied with by the utility. Commission now directs PSPCL to initiate steps to convert atleast 33% LVDS tubewell consumers into Less LT HVDS per year so as to achieve the target by Mar, 2017. None of the 25 kVA & 63kVA transformers depending upon size of the motors be used to feed more than three AP motors and Aerial Bunched Conductor be used to feed these consumers to avoid theft of power.	a) Out of 9.5 lac existing / old AP connections fed on LT feeders, 2.11 lac were covered in 25 schemes against target of shifting of 2.11 lac. connections on HVDS by installing 189037 No.DTs, PSPCL has shifted 221442 AP connections on HVDS by installing 186072 Nos. dedicated DTs b) Conversion of LVDS to HVDS in AP sector is a highly capital intensive scheme. Approximate cost of conversion of 1 tube well connection to HVDS is Rs 1 lac. As such, this scheme is viable only for high loss feeders. PSPCL is identifying feeders where losses are high or theft prone and these shall be covered under this scheme Total AP connections running on HVDS 5.21 lac All new connections are being released under HVDS only All shifting of AP connections is done under HVDS only However PSPCL shall continue with Less LT scheme by providing 25 KVA DT's along with

Sr. No.	Issues	PSERC's Directives for FY 2013-14	PSERC Comments/ Directives for FY 2014-15	PSPCL reply ending Sept. 2014
		explored. Commission directed that atleast 25% LVDS tubewell consumers should be converted into Less LT HVDS per year starting from 2013-14 with first priority for high loss feeders, so that the project is completed by 2016-17.		LT line/Cable upto 250 mtrs
		iv) **Agricultural Feeders Loss Reduction Scheme:** PSPCL was directed to submit execution plan by 31.05.2013 for implementing the scheme aiming at reducing the length of 11kV & LT lines, sparing 11kV poles by re-routing the AP feeders & implemented in parallel with conversion of LVDS to Less LT HVDS.	PSPCL's admission that material worth rupees four crore was dismantled while executing 19 no. HVDS schemes prove the benefits of this scheme. The directive for 2013-14 to re-route the AP feeders to attain optimum length of 11 kV & LT lines, sparing electric poles & other material in parallel with conversion of LVDS to less LT HVDS be implemented all over Punjab. The steps taken to deload lines & transformers and replacement/augmentation of conductor are appreciated. This must continue during 2014-15.	Is being continued as a regular routine.

Sr. No.	Issues	PSERC's Directives for FY 2013-14	PSERC Comments/ Directives for FY 2014-15	PSPCL reply ending Sept. 2014
		(v) Installation of Capacitors on: **a) 11kV feeders:** The Commission advised the utility to ensure that all new installations be provided matching MVAR addition for power factor improvement. **b) DTs** The Commission notes the action taken by utility.	The Commission notes the compliance. The process should continue proportional to the growth of power network/load.	The compliance of above directive in T.O. FY 2013-14 is already made. All the new installations are being provided with matching capacitors and therefore capacitors are being procured as per requirement of DS offices for installation. The work of installation of LT shunt capacitor in 15 no. towns is complete. For remaining 25 towns covered under R-APDRP Part-B the work has already been awarded on 10/5/2013 firms on and this work shall be completed within 26 months i.e. by 9/7/2015.
		vi) Low Cost Measures **(a) Earthing :** **(i) DTs** PSPCL need to regularly monitor earth resistance at its installations (including DTs) on annual basis as directed. Certified Earth Resistance-cum-Earth Leakage current statement at PSPCL installations as directed in TO 2012-13 be submitted to the Commission by 31st July every year.	Certified Earth Resistance-cum-Earth Leakage current statement should be submitted by PSPCL within two months of issuance of this Tariff Order.	The instructions had been issued to field offices to regularly monitor earth resistance on annual basis and directions are being complied.
		(ii) Adequacy of existing switchgears & earthmat at all	The Commission notes the compliance. The process of	

Sr. No.	Issues	PSERC's Directives for FY 2013-14	PSERC Comments/ Directives for FY 2014-15	PSPCL reply ending Sept. 2014
		33/66 kV S/S: List of sub-stations where earthing has been strengthened may be submitted to the Commission.	strengthening the sub- station earthing system must be carried out by PSPCL on regular basis.	PSPCL is regularly monitoring Switchgears & Earthmat at all 33/66 kV Sub Stations
		(b) Tightening of loose joints and nuts/bolts PSPCL should ensure that this exercise is carried out regularly and certificate for completion of this work be submitted by 30th June every year.	The Commission notes the compliance. The exercise must be carried out annually & a certified statement be submitted to the Commission annually by 31st July.	Directions have been issued to field offices to carry out the exercise.
		(c) Load balancing at DS transformers: PSPCL should ensure that exercise of load balancing of DS transformers is carried out regularly and certificate for completion of this work be submitted by 30th June every year.	The Commission notes the compliance. The exercise must be carried out annually & a certified statement be submitted to the Commission annually by 31st July.	Directions have been issued to field offices to carry out the exercise after regular intervals.
		(d) Reduction in Transformer damage rate: PSPCL should submit the road map to achieve the target of deloading of DTs & bringing down damage rate as per target for urban/rural areas (less than 1% in urban & less than 4% in rural areas in 3 years).	The damage rate of small capacity Transformers is on a higher side. PSPCL is directed to deload all overloaded transformers by 31st May, 2015	Small capacity transformers identified overloaded during this paddy will be augmented before onset of next paddy season

Sr. No.	Issues	PSERC's Directives for FY 2013-14	PSERC Comments/ Directives for FY 2014-15	PSPCL reply ending Sept. 2014
8.2	**Implementation of R-APDRP Scheme:**	**(i) Baseline data** PSPCL should ensure timely completion of the work.	The Commission notes the compliance.	The compliance of above directive in T.O. FY 2013-14 is already made.
		(ii) R-APDRP(Part-A) The Commission reiterates its directions to PSPCL to implement its IT plan across the State on priority ensuring that the grant component in R-APDRP scheme is fully availed by the State. In case of failure to do so, loan amount eligible for conversion into grant shall not be taken in to account by the Commission while processing the ARR.	The Commission notes the action being taken and reiterates its directions to PSPCL to implement its IT plan across the State within the time frame fixed by MoP. Commission reiterates its direction that in case of failure to do so, loan amount eligible for conversion into grant shall not be taken in to account by the Commission while processing the ARR.	IT Systems are being deployed in 47 towns eligible under R-APDRP Part A. The remaining areas are to be covered under Non R-APDRP except GIS and AMR of Distribution Transformers. Till date 8 No. towns have been declared "Go Live". PSPCL has terminated the contract with the ITIA (M/s Spanco) and taken over the activities itself. . **Implementation Progress :-** • GIS work has been completed in 8 nos. towns and will be completed in rest of the 39 nos. more towns by 31.12.14 • The billing application has been largely stabilized leading to correct, complete & timely billing. Most of software gaps in MBC & MDAS modules have been plugged and remaining shall be completed by 30.11.2014 Targets: The work is likely to take 6 months more for completion.

Sr. No.	Issues	PSERC's Directives for FY 2013-14	PSERC Comments/ Directives for FY 2014-15	PSPCL reply ending Sept. 2014
		(iii) R-APDRP (Part-B) The Commission reiterates its directive that R-APDRP scheme should be implemented by PSPCL within the given time frame as fixed by MoP/GoI/PFC so that the 50% grant under the scheme is fully availed. In case of failure to do so, loan amount eligible for conversion into grant shall not be taken in to account by the Commission while processing the ARR.	PSPCL to implement the scheme within the time frame fixed by MoP. Commission reiterates its direction that in case of failure to do so, loan amount eligible for conversion into grant shall not be taken in to account by the Commission while processing the ARR.	Firm wise M/s A to Z Mantcnance and Engineering Pvt, Ltd, M/s Godrej and Boyce and M/s L&T progress of this project (E/O) of G/S/Stn, 66 KV lines, 11 KV line, DTs, LT is enclosed as Annexure-G1, G2 & G3 respectively.
		iv) Management Information System (MIS) PSPCL should expedite the implementation & include provisions of MIS for PSERC returns in its IT plan as directed earlier.	PSPCL is directed to implement the project in the stipulated time.	MIS Performa's supplied to the ITIA and the same are being processed/analysed and the reports in the desired formats will be available in due course. Targets: By 31.12.2014

Sr. No.	Issues	PSERC's Directives for FY 2013-14	PSERC Comments/ Directives for FY 2014-15	PSPCL reply ending Sept. 2014
8.3	**Energy Audit**	**i) Energy Audit of Distribution System:** PSPCL must ensure DT level energy audit of at least 7 number Go Live towns by 30.09.2013 on the lines of TO 2012-13 directives & share the result with the Commission. For Non-APDRP areas, till DT meters are made operational. 11kV feeder wise energy audit reports must be generated by updating the consumer indexing & shared with the Commission by 30.11.2013.	The delay in conducting energy audit of 7 towns already integrated with the system has been viewed seriously by the Commission. PSPCL shall furnish by 30.09.2014: a) Energy audit of already integrated 7 towns. b) 11kV feeder wise energy audit reports generated for Non-APDRP areas by updating the consumer indexing.	8 nos. towns have been declared "Go Live" after conducting the required Energy Audit as per PFC guidelines. **Targets:** Rest of 39 no. towns are expected to be declared "Go Live" by 30.06.2015 up to which the timeline for completion of the project has been extended by the MoP/PFC.
		(ii) Energy audit of Thermal Generating Stations: Efforts should be made for improvement in SHR (Station Heat Rate) and Reduction in auxiliary consumption of the Thermal Generating Stations at least to the normative levels specified in the Tariff Order. Enough funds have been placed by the Commission at the disposal of PSPCL to implement CPRI recommendations.	The Commission notes the action being taken. The Energy Audit at PSPCL's thermal plants & other installations be continued as a regular exercise as laid down by BEE.	**GGSSTP Ropar:** Heat Rate Study, which includes Energy Audit of all the 6 units of GGSSTP was got conducted from M/s CPRI, Bangalore. The study was completed and the final reports were submitted on 28.2.2012. M/s CPRI has concluded that units Heat rate of GGSSTP was 2621 Kcal/kwh (at the time of test), which can be improved by implementing the suggested Short Term, Medium Term & Long Term measures; and the achievable heat rate shall be 2600, 2564 & 2529 Kcal/kwh respectively on implementing those measures.

Sr. No.	Issues	PSERC's Directives for FY 2013-14	PSERC Comments/ Directives for FY 2014-15	PSPCL reply ending Sept. 2014
				GGSSTP is implementing the recommendations in a phased manner, depending upon their technical feasibilities, availability of funds and shut down of the units. The status ending Sept., 2014 is enclosed as Annexure-A-1. **GNDTP, Bathinda** Energy Audit (along with heat rate study) of GNDTP unit-1&2 has already been got conducted from M/s CPRI, Bangalore. Recommendations of the agency are being implemented in a phased manner at the plant. The status ending Sep'2014 is as per Annexure-B. Energy Audit of unit-3&4 was not carried out due to their Renovation & Modernization works. COD (Commercial Operation Declaration) of Unit-3 after its R&M was made w.e.f. 07.12.2012 and the unit is running satisfactorily. The COD of unit#4 has also been made on 27 Sep, 2014 after its R&M works. Further Energy Audit of the units shall be carried out at appropriate time. **GHTP Lehra Mohabbat.** For Energy Audit of all the 4 units, Work Order has been placed upon M/s National Productivity Council Hyderabad.

Sr. No.	Issues	PSERC's Directives for FY 2013-14	PSERC Comments/ Directives for FY 2014-15	PSPCL reply ending Sept. 2014
		(iii) Energy Audit of Hydro Generating Stations: Compliance noted. Action plan to reduce the GT Losses of Shanan, ASHP & MHP be submitted to the Commission.	The Commission notes the action being taken. The process needs to continue & monitoring report submitted to the Commission annually.	Compliance of Directives issued by the commission has already been made as the Auxiliary losses of all the Hydro Stations of PSPCL are comparable with NHPC Projects e.g. CERC norms set for Aux. consumption of Chamera HEP are 0.4% of the generated energy. Detail of auxiliary consumption and G.T. Losses in respect of all Hydel Projects of PSPCL ending Sept, 2014 (Enclosed Annexure-C) is tabulated below

Sr. No.	Name of Plant	Aux.Cons. (%)	GT Losses (%)
1	RSD	0.189	0.14
2	ASHP	0.073	0.39
3	UBDC	0.213	0.33
4	MHP	0.208	1.47
5	Shanan	0.033	1.28

Remarks for :

1. Above Sr. No.4 MHP:-

Power generated in the generating unit is carried out to LV side of generated unit to step up T/F through the 11 KV Aluminum cables

Sr. No.	Issues	PSERC's Directives for FY 2013-14	PSERC Comments/ Directives for FY 2014-15	PSPCL reply ending Sept. 2014
				(500 mm^2 at PH1&2 and 800 mm^2 at PH 3 & 4) for each phase i.e. total 6 no. Aluminum cable have run load with length of the each cable 105 meter. The losses in these cables are also contributing to GT losses. Further, generator transformers of this plant (PH-1 to PH-4) are very old and were commissioned during 1983, 1988 & 1989. 2. Work for replacement of 132 KV CT/PTs as per State Grid Code is in progress. **3. Above Sr. No.5 Shanan :-** Due to installation of single phase transformers instead of 3-phase due to space constrains and are about 30 years old, contributing to higher GT losses. These need over hauling for which action is being taken in a phased manner. Two new T/Fs are under procurement which will be energized on receipt thus sparing old T/Fs for their overhaul.
8.4	**Demand Side Manage-ment Energy Conser-vation**	**i) Bachat Lamp Yojna:** PSPCL should frame proposal to implement the scheme outside BLY by providing CFLs to consumers on subsidized rates through some BEE approved Energy Service Company (ESCO). Commission may approve	The Commission observes that the replacement of ICLs with CFLs outside BLY has not been explored by PSPCL. The option for replacing ICLs with LED or CFL should be explored by PSPCL and submit the plan within	It is disclosed that under Bachat Lamp Yojna, out of 7 No. of CPAs M/s CQC has completed 5 no. of CPAs. In these 5 no. of CPAs total 16,38,059 nos. Of CFLs have been distributed in 4,93,999 no. of households by M/s CQC Malaysia and by replacing these lamps with CFLs energy saving target of 44.51 MU

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		cost of this efficient lighting programme along with other approved DSM initiatives as pass through within the provisions of DSM regulations during true up.	3 months of issue of this Tariff order.	has been achieved. Moreover PSPCL has already banned the use of ICLs in Govt buildings and at the agriculture connection premises vide circular no. 2/2008. Beside savings from the commercial buildings, about 15 MUs are saved annually at Agriculture Connection Premises by installing CFL. Moreover, PSPCL has started shifting the meter outside the consumer premises and out of approx. 68.67 Lacs nos. of consumers, the meters of 47.385 Lacs. nos. of consumers have already been shifted. It is matter of fact that after shifting of meters outside the consumers premises energy pumped to the feeders has gone down, thereby meaning that consumer themselves are replacing their ICLs with CFLs. Further consumers are also replacing their inefficient appliances like fans, refrigerator, ACs and other home appliances with star rated efficient appliances. A consumer survey was also carried out in various circles of PSPCL. Under this survey 3000 no of consumers were covered. It was found that after installation of meters outside consumer premises and in pillar boxes, consumers have started using CFLs to reduce their energy bills by them self.

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				As PSPCL has already signed MoU with BEE to make complete formation of DSM Plan for all categories of consumers for the state of Punjab and in this DSM Plan, potential of saving will be determined as per present scenario. Thereafter replacement of ICLs with CFLs/LEDs will be implemented accordingly after approval from PSERC. Now as per directives of PSERC in tariff plan 2014-15, the commission has commented that PSPCL should explore the possibility of replacement of ICLs with CFLs outside BLY Scheme. In this regard as explained above PSPCL has already taken measures to replace existing ICLs with CFLs, also consumers themselves are replacing their ICLs with CFLs to curtail their electricity bills. Therefore the process of shifting of meters outside the premises of consumers resulting the desired objective of DSM and thus fulfils the saving targets fixed by the PSERC. Moreover, DSM Cell has also initiated various measures to explore the possibility of replacement of ICLs with LEDs/CFLs outside BLY Scheme and same will be informed accordingly.

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		(ii) Agriculture DSM Commission should be apprised of the feeders selected for implementing Agriculture DSM along with execution plan for 2013-14. The directive of 2012-13 is reiterated and PSPCL should come up with the proposal to replace 100% AP pumpsets with efficient pumpsets.	No tangible action has been taken by PSPCL to take up the pilot project despite repeated directions from the Commission. PSPCL is directed to take immediate action to undertake Agriculture DSM pilot project on top priority on the lines of a pilot project executed by EESL for 600 AP pumps in Hubli where energy saving of 37% has been reported. Based on this pilot project, HESCOM, a distribution company of Karnataka has awarded EESL with work order for over 10000 pumps.	Bids for Ag DSM Pilot Project covering 6 no. feeders of Muktsar and Tarn Taran districts were floated in 2011-12. Despite repeated extensions and modifications no response was received. Further in July 2012 M/s EESL shown interest in the Ag DSM project and M/s EESL submitted their offer to execute the project covering 268 no. of AP pumpsets of Muktsar area with approx. Rs. 78,43,539 cost to PSPCL. The proposal of M/s EESL was rejected with reason that PSPCL may not draw much savings in the proposed area due to high water level in the area of Muktsar and it cannot form the basis for replication in other parts of the state. After this once again EESL shown interest to implement Pilot Project of Ag.DSM Project on ESCO mode and regarding this, a meeting was held with EESL on dated 18th Feb 2014. In this meeting M/s EESL suggested that it require at least 2500 nos. of Agriculture pump sets to be replaced under Ag DSM project in ESCO mode after finalizing the DPR of 40 nos. of Pump Sets. However the MoP has launched Capacity building programme during the XIIth five year plan in its meeting dated 18th June, 2013, held at Ministry of Power ("MoP"), New Delhi. Now PSPCL has signed MoU on dated

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				12/06/2014 with BEE under Capacity Building Programme. Under this programme EESL will make complete DSM Action Plan for all categories of consumers of State of Punjab, these categories also include Agriculture pump set consumers. Therefore after the completion of DSM Plan, Potential of savings in agriculture pump sets will be determined and same will be submitted to PSERC and thereafter it will implemented accordingly.
		(iii) DSM Plan Commission notified DSM Regulations in March 2012 & PSPCL was required to establish technical potential for DSM in the state on the basis of load/market research within 6 months of notification and prepare comprehensive DSM plan within one year. Commission directs that technical potential report must be submitted latest by 30.06.2013. Technical Potential estimate as per data & information available with the Commission shall be declared after 30.06.2013 & PSPCL shall be	It is matter of serious concern that PSPCL could not engage even the consultants to prepare DSM plan. PSPCL is directed to achieve energy saving of 500 MU (including back log of 2013-14) during the FY 2014-15.	Specifications for the engagement of consultants for the preparation of complete DSM Plan for the state of Punjab have been prepared by the O/o Dy. CE/ DSM. The specifications have also been approved by the CE/ TA&I. Tender process for the same has been started and M/s MITCON has quoted the lowest bid. M/s MITCON has given a presentation to PSPCL management regarding their modus operandi and survey sample size. Now M/s MITCON has submitted sample size of 7623 consumers of different categories for survey to prepare DSM plan of Punjab. In the meantime MoP has launched Capacity building programme during the XIIth five year plan in its meeting dated 18th June, 2013, held at Ministry of Power ("**MoP**"), New

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		required to achieve atleast 10% of energy saving in potential declared by the Commission during the year 2013-14. PSPCL can execute following DSM schemes where the suppliers can approach the consumers directly for replacement of inefficient electrical appliances at concessional rates e.g.: a) Replacing electro-magnetic choke with electronic choke for tubelight. b) Replacing old fans with energy efficient fans. c) Replacing old ACs and Refrigerators with energy efficient ones.		Delhi and PSPCL has signed MoU with BEE under this programme. Under this programme BEE will provide full financial as well as technical support to PSPCL for preparation of complete DSM plan notified by PSERC, and BEE will also provide training to master trainers of PSPCL to achieve DSM targets. In this context, as per the terms and conditions of MoU signed between BEE and PSPCL, EESL has empanelled M/s The Energy and Resources Institute (TERI) for study of load research and analysis. To kick start the process for preparation of DSM action plan a meeting was organized on dated 18.09.2014 with the representatives of EESL and TERI. The relevant data related to PSPCL necessarily required for the study of load research and analysis was also delivered to EESL and other issues like sample size of survey are under consideration so that the process of formation of DSM action plan can be started as early as possible.
		(iv) PSPCL should ensure strict compliance of the notification for use of 4 star labelled pump sets for all new AP connections.	The Commission notes the compliance. The process must continue.	PSPCL has already made it mandatory to install minimum 4 star BEE labelled Motor Pump Set, Power Capacitor, Foot/ Reflex Valve in new Agriculture Connections. The commercial circular no 43/2011 was issued on 03.11.2011 in this regard. Now all the new AP connections are

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				being released with 4-star rated pump set.
8.5	**Agricultural Consumption & Metering Plan**	**(i) Agricultural Consumption** Commission has taken a serious view of the failure of PSPCL to ensure accuracy of sample meter readings and compliance of directives in this regard. It is a matter of concern that despite repeated assurances, PSPCL failed to supply credible AMR data of pure AP feeders to the Commission. PSPCL is directed to implement the following steps: (i) All remaining mixed AP feeders should be segregated. (ii) AP load of Kandi area feeders fed from mixed feeders should be segregated. In case segregation in some cases is not practicable, then in such cases all AP motors should be metered under AMR-LT capacitor model. Compliance should be ensured during 2013-14.	a)The Commission notes the compliance. b) PSPCL has failed to implement the directive for segregation of Kandi area feeders. It appears that PSPCL lacks the will for metering of AP consumers under AMR-LT capacitor model. The non-compliance is hampering the efforts of the Commission to assess the AP consumption more accurately. The Commission reiterates its directions that AP load of Kandi area feeders fed from mixed feeders should be segregated. In case segregation in some cases is not practicable, then in such cases all AP motors should be metered. c) It is a matter of serious concern that despite substantial investment & repeated assurances, PSPCL has failed to ensure flow of AMR data of all AP feeders. The feeder count	**a)** AP mixed feeders are 2 Nos. The work of segregation of these feeders is held up due to stay granted by courts or due to non-clearance of ministry of Railways. Earnest efforts are being made to remove above hurdles to segregate remaining mixed AP feeders during 2014-15. b) In Kandi area, it is found difficult to segregate the AP and other loads due to local constraints. Regarding accurate computation of energy consumption of AP load and non AP load, the segregation of AP energy input and non-AP energy input is being done accurately in the ratio of the consumption in each category. All non AP consumers are metered and their consumption is being assessed accurately from the meter readings and AP consumption is being computed from the sample meters and input energy has been segregated according to the ratio of their consumption on the basis of the fact that losses on the feeders are common to both the categories.

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		c) Ensure that AMR meters shall be installed on all AP feeders & accurate/ credible AMR data in respect of all AP feeders is made available to the Commission by 30th Sept. 2013.	under AMR data remained in the range of 1950-2000 (out of 4200 AP feeders) for more than one year. PSPCL is directed to ensure submission of AMR data of all AP feeders within 3 months of issuance of this Tariff Order.	(c) AMR compatible meters have been installed on all AP feeders. But communication hardware (DCU/Power Supply) in approx. 150 Sub Stations is faulty & the case for replacement of hardware is being taken up with hardware manufacturers. Also the technical slag in servers has been rectified & GPRS services which were discontinued by AMR vender (M/s ERL, Bangalore) are now to be provided by M/s Airtel as per decision of WTD's and the case for this has been taken up with M/s Airtel till Feb, 2014 before technical slag & will be provided for future also after the replacement of SIM's at all 650 Sub Stations i. e. from Sept., 2014. The submission of AMR data on monthly basis had been done by 10th of each month and it will be done for future also. **Targets :** Out of 4200 AP feeders, 3250 AP feeders are covered under AMR system. Due to non-completion of AMR Project by M/s ERL (AMR Vendor), the Work Order placed on the Firm has been cancelled by the competent authority. After

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			d) There is usually delay in submission of monthly pumped energy data. PSPCL must ensure compliance of directive.	the exit of M/s ERL, all the SIM"s in 650 Sub Stations have been replaced with new Airtel Sims and AMR data from 350 No. Sub Stations has started coming in AMR System.
			e) The AMR Data of AP feeders has been discontinued by PSPCL w.e.f. March 2014. PSPCL is directed to ensure submission of AMR data of about 2300 nos. AP feeders immediately and remaining by 1st December, 2014.	The rectification of Hardware in remaining Sub Stations & procure of new comm. H/W for replacement with faulty (DCU's) is being done to make data available from all the 600 No. S/Stns. This activity will be completed by December, 14.
		d) Ensure submission of monthly data of pumped energy on AP feeders as per Grid meters on the formats already prescribed by 10th of each month.	f) It is ironical that PSPCL has not been able to put meters on AP motors running on urban feeders during 2013-14. The directive of the Commission to provide meters on all AP motors fed from urban feeders is reiterated with further direction to ensure compliance within six months otherwise all such consumers shall be treated as being fed from AP feeders.	d) Monthly data of pumped energy on AP feeders as per Grid meters on the formats up to 09/2014 stands submitted to Hon'ble PSERC.
		e) Ensure submission of AMR data on monthly basis on the prescribed formats and submit the same by 10th of each month.		e) Status is as per (c) above.
		f) Ensure that as per the existing instructions, all AP motors fed from urban feeders are provided with energy meters and		

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		consumption of such connections should be counted in metered AP sale.		f) There are 12354 no AP connections running on urban feeders and meters are installed on 5152 no AP connections. There are 7202 AP consumers where meters are required to be installed . These meters will be installed by 31-3-15.
		(ii) Metering Plan Commission observed that release of new tube well connections with ordinary meters may not serve any purpose since for reading these meters there will be huge manpower requirement. It would therefore be better to extend the AMR-LT capacitor model proposed to be implemented on 10% feeders to cover all AP consumers on these feeders. Commission noted that EoI for covering 10% AP feeder on AMR-LT capacitor model has been opened on 03.12.2012 & good response has been received from firms. The project should be implemented on 10% AP feeders spread uniformly throughout the	Despite repeated queries PSPCL has failed to submit any proposal to achieve 100% metering thus violating the provisions of the Act. The Commission reiterates its directive to PSPCL to implement AMR-LT capacitor model on AP motors to provide least cost & efficient solution to 100% AP metering. PSPCL is directed to submit its plan to achieve 100% metering as per Section-55 of the Act, within three month of the issuance of this Tariff Order.	Although section 55 of Act provides for 100% metering of all consumers but installation of meters on a category of consumers which are metered on flat rate will not serve any purpose except recording energy. Installation of 100% meters on all 11.889 lac consumers is a huge Task and involves following • Total cost involved in installation of 12 lac AMR meters is around Rs 1000 Cr • Recording monthly readings not only involves connectivity issues but also requires huge infrastructure, additional manpower and software licences cost. No utility in India has carried out AMR for such large number of consumers. So far only utilities have carried out AMR of large consumers numbering from hundreds to few thousand • Replacement of defective meters or modems will also involve huge cost • It is normally seen that infrastructure used

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		state (& not on 10% AP consumers) during FY 2013-14. Thereafter 30 % AP feeders should be covered each year so as to complete the project by FY 2016-17.		only for study purposes gets abandoned after some time and investment so made also get lost • PSPCL is preparing DPR's under IPDS scheme for availing funds to install meters on AP consumers in phased manner.
8.6	**kVAh Tariff**	PSPCL is directed to expedite the submission of the proposal	Refer para 7.1 of this Tariff Order.	As per Tariff Order for FY 2014-15, KVAH Tariff has been introduced for large supply, medium supply, bulk supply, railway traction, DS (load more than 100 kw) and NRS (load more than 100 kw) categories of consumers w.e.f. 01.04.2014.
8.7	**Two Part Tariff/TOD**	**Two Part Tariff:** PSPCL is directed to submit the proposal again after examining the issues raised by the consumers and consumer organizations along with detailed report on the result of the mock/parallel run of billing on single part and two part tariff systems. **ToD Tariff:** Commission has approved the proposal of PSPCL for introduction of ToD for LS industrial category. PSPCL to submit the proposal for introduction of ToD Tariff for other	Commission reiterates its directive to PSPCL, to re-submit the proposal. Refer para 7.2 of this Tariff Order. Refer para 7.3 of this Tariff Order.	The proposal for Introduction & Implementation of **Two Part Tariff** was submitted to the PSERC vide this office memo no. 1305/CC/DTR-233 dated 1.1.2013. The PSERC in Tariff Order for FY 2013-14 directed the PSPCL to examine the issues raised by the consumers/consumer organizations, and conduct mock trial/parallel run of the proposed Two Part Tariff system, at least in five selected Divisions of PSPCL for 6 months, and submit a detailed report along with a more refined proposal for introduction of Two Part Tariff, addressing the concerns of the consumers/consumers organizations expressed during the processing of ARR for FY 2013-14 and also the

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		categories of consumers.		observations made by PSPCL during the mock trial/parallel run. As per Directions, the proposal for Two Part Tariff and the outcome of the Mock Trial on prescribed proforma was submitted to PSERC vide this office memo no 226/DTR/Dy.CAO/233/Vol.III dated 30.01.2014 & thereafter, Public Hearing was held on 28.03.2014. Replies of the objections were also sent to PSERC as well as the objectors. In the Tariff Order for FY 2014-15, the Commission has directed PSPCL to resubmit the Two Part Tariff proposal, after addressing the concerns of the majority of consumers/consumer associations. The perusal of the objections of the stake holders reveal that the stake holders are objecting of the very characteristic of the Two Part Tariff which clearly depicts that the consumers having higher consumption shall have reduced bills under Two Part Tariff whereas the consumers with moderate consumption may have to pay a little extra. There is no tool available with PSPCL which may be applied to ensure that the bills of no consumer increases but the bills of the consumers having higher consumption may reduce as the same shall be contradictory to the

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				principle of revenue neutral proposal. In view of the above, PSPCL is of a considered opinion that the proposal submitted by PSPCL is the best possible proposal keeping in view the data of PSPL and since the final call on the introduction of the Two Part Tariff is to be taken by PSERC, the call to build consensus amongst various stake holders need also to be taken by PSERC. Accordingly, the proposal already submitted with the ARR of T.O. 2014-15 may again be considered for building consensus amongst the stake holders. **ToD Tariff** In Tariff Order for FY 2014-15, the Commission has introduced ToD tariff for Large Supply as well as Medium supply Categories. However, it is optional for both categories subject to arrangement of meters by the consumers who opt for it. **ToD** tariff shall remain operative from October to March of FY 2014-15. Instructions have been issued vide CC No.46/2014 dated 4.9.2014 for introduction of ToD.
8.8	**Employee Cost**	(i) **Implementation of PwC Report on Manpower** It is a matter of concern that PSPCL could not take any decision	Commission notes the submission that the manpower strength of PSPCL has declined below the manpower strength proposed by	PwC Report has already been submitted to BOD and is under consideration of the BOD. The implementation of the report will be undertaken subsequently after approval of the same by BoD

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		regarding implementation of PwC report on manpower in almost two years. PwC report was not only to reduce employees' strength but also to increase productivity of existing manpower by re-deployment and re-training of the existing staff. The Commission directs PSPCL to submit the action taken report on PwC report by 30.6.2013 and ensure compliance during 2013-14.	PwC but is of the view that report intended not only to reduce employees' strength but also to increase productivity of existing manpower by re-deployment and re-training of the existing staff. Commission directs PSPCL to submit the action taken report on PwC report within 3 months of issue of Tariff Order.	of PSPCL.
		(ii) Re-organisation of DS on functional lines Commission directs PSPCL that in view of successful implementation of re-organisation of distribution set up in Patiala, Nabha & other divisions as reported by PSPCL, the re-organisation be expedited in order to complete all R-APDRP towns by 31.12.2013 & remaining by 31.3.2014. In the functionally reorganized DS Divisions, separate wing for Design & Construction (D&C) be added.	PSPCL in its meeting dated 30.04.2012 had assured that re-organisation of DS on functional lines shall be completed all across Punjab by 30.06.2013. No further re-organisation of distribution set up has been undertaken during 2013-14 and no feedback on review of the plan has been submitted by PSPCL. The Commission has viewed this policy paralysis in PSPCL seriously. PSPCL is directed to implement re-organization of DS wing on top priority.	PSPCL has formulated committee comprising of Er Gurpal Singh EIC/ Commercial , Er K.S Khaira CE/ South, Er. S.K Chawla, SE/ City Amritsar, Er. Inderpal Singh Addl. SE/Comm. Model town Jalandhar is constituted to examine all existing models and study the similar functional models of other states and also suggest appropriate and most suitable that meets requirement of PSPCL w.r.t enhancement of operational efficiency, standard of performance, Right to service act etc. with a clear concept of responsibility and accountability . Committee shall submit its report within a period of two months.

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		(iii) AMR of HT consumers The implementation of AMR for HT consumers should be expedited and completed by 31.3.2014. AMR of all MS consumers be implemented on priority for successful introduction of ToD for these consumers during 2014-15.	PSPSL has failed to comply with the target given by the Commission. Commission reiterates its directive for implementation of AMR for all HT and MS consumers.	The MDAS application has been deployed at DC, Patiala. AMR Data from HT/select LT consumers is to be acquired through modems connected to HT/select LT meters. Till date 2204 modems have been installed for these consumers. Billing of high end consumers in the 7 towns integrated with DC is being carried out based on AMR data **Targets:** The AMR of HT consumers covered under R-APDRP Part A will be completed whenever town is declared "Go Live"
		(iv) Distribution SCADA/DMS: The revised target date of completing distribution SCADA/ DMS by 30.6.2014 must be met by PSPCL.	The Commission notes the action being taken. PSPCL should emulate distribution SCADA of Reliance Energy/NDPL to cover its maximum area. This will not only help to reduce its manpower requirement but also help in increasing its efficiency & improve consumer service.	**Progress :** Tender enquiry no. 82/DIT-695/R-APDRP/SIA dated 7.05.14 has been floated & tenders opened on 4.07.14. The bids are under evaluation. The project will be completed within two years in all three towns i. e. Amritsar, Jalandhar & Ludhiana. **Target and Remarks :** The process for making electrical network SCADA/DMS compatible falls under RAPDRP Part B (under CE/RE&APDRP). Hence, the completion of the project will depend on the readiness/completion of work by RAPDRP Part

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				B vendors.
		(v) Unmanned Grid S/Stns Schedule Plan to implement unmanned sub-stations on experimental basis in the short listed three towns of Jalandhar, Amritsar & Ludhiana (where SCADA scheme is being implemented under R-APDRP scheme) should be submitted to the Commission within three months of the issue of T.O.	The automation process needed to be expedited by PSPCL. Almost all grid sub stations of Reliance Energy Mumbai are unmanned & running successfully for last many years. PSPCL need to emulate such models to reduce its manpower requirement & increase efficiency.	At present there is no plan for unmanned sub-stations.
		(vi)Training There is much scope for implementing already approved PSEB training policy aiming for one week training for all every year besides developing a dedicated Management Development Institute. With the creation of HRD as a distinct function headed by a Director in PSPCL, it should be possible to emulate NTPC, PGCIL, NDPC in training and multi skilling to optimize output of PSPCL manpower.	The Commission notes the action being taken. The process to train & re-train its manpower need to be continued by PSPCL to enhance efficiency of its staff. A faithful implementation of its own order on 'PSEB Training Policy' aiming at 'one week training for all' is a must.	Training Policy framed and adopted by earstwhile PSEB (Now PSPCL) is being followed since its inception to the extent possible with the existing infrastructure for regular training and re-training of the employees. The training policy has also been amended from time to time to make it more suitable to the fast changing environment. Apart from this zonal training centres are being strengthened to disseminate various need based/role specific training to PSPCL's each and every employee. To enhance efficiency, a dedicated cell named ODMD (Organizational Development &

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				Management Development) was established to implement Modern Management Techniques in the organisation. To name a few achievements are as under : • workshops on value actualization have been integrated into all the in-house training programmes being conducted all across PSPCL to cover maximum nos. of employees in order to disseminate the adopted vision, mission and core values of PSPCL. • workshops on "Building Organizational Effectiveness through Competency Mapping" have been conducted for 200 senior officers (EICs/CEs/Dy.CEs/SEs/Addl.SEs.) of PSPCL to develop PSPCL as a competency driven organisation. In these workshops, the mapping process had been integrated with OD intervention thus initiating the change management at top level of the organization. • Out of total 29 Nos. Quality Circles established in PSPCL, 10 no. non operation

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				quality circles were prepared for competition through a focused training program. Post training, these QCs have shown remarkable improvement. Out of these 10 No. QCS, 6 were nominated to take part in Regional Convention of Quality Circle Forum of India (QCFI) at Haridwar on 31st August. 2014. At the convention 5 No. QCs bagged Gold Award and 1 No. QC got Bronze Award. It has been decided to highlight the achievement of these QCs within the organization, so as to popularize this concept amongst employees, which may prove to be a win-win situation for employees as well as PSPCL. • Role specific trainings are being organized from time to time on relevant subjects such as legal procedures, office procedure and communication etc.
8.9	**Receivables**	PSPCL may explain increase in the amount of the receivables against Industrial category and ensure reduction in the outstanding amount particularly from industrial consumers & submit compliance.	Despite the concern shown by the Commission, receivables against Industrial category has further increased. PSPCL is directed to explain the increase in the amount of the receivable against Industrial	To curve the accumulating defaulting amount, the status of defaulting amount is being monitored by the Management on month to month basis and suitable directions are being conveyed to EICs/CEs/DS for their expeditious clearance. The follow up action with EIC/CEs DS has already been taken to take effective steps to

<table>
<tr><th>Sr. No.</th><th>Issues</th><th>PSERC's Directives for FY 2013-14</th><th>PSERC Comments/ Directives for FY 2014-15</th><th>PSPCL reply ending Sept. 2014</th></tr>
<tr><td></td><td></td><td></td><td>category and to initiate steps to ensure its reduction.</td><td>liquidate the Receivables especially of ISC category for which, the Hon'ble Commission has taken serious note.
Category-wise Defaulting Amount ending 09/2014 viz-a-vis 03/2014 is as under:(Rs in lacs)
<table>
<tr><th>Category</th><th>Ending 03/14 (un-audited)</th><th>Ending 09/14 (un-audited)</th></tr>
<tr><td>ISC</td><td>38414.86</td><td>43630.00</td></tr>
<tr><td>AP</td><td>270.82</td><td>286.85</td></tr>
<tr><td>GSC</td><td>32425.24</td><td>32441.37</td></tr>
<tr><td>Others</td><td>669.41</td><td>714.10</td></tr>
<tr><td>Total</td><td>71780.33</td><td>77072.32</td></tr>
</table>
Defaulting amount statement ending 09/2014 and break up of receivables outstanding against Govt. department are enclosed as Annexure-D.</td></tr>
<tr><td>8.10</td><td>Mtc. of category wise details of Fixed Assets</td><td>The utility was directed to expedite finalization of fixed assets register.</td><td>The Commission notes the action being taken.</td><td>Company Act.2013 has came into force w.e.f. 29.8.2013 vide Central Govt. Notification No. 27 dated 30.8.2013. The Accounting Standards are to be revised under section 133 of the ibid Act. In view of this W.O.No. 1/CAO/WM&G/A-246 dated 20.12.2013 has been issued to the firm M/s Ernst & Young LLP, Kolkata to standardize various processes and procedures by developing and documenting the Financial Accounting Manuals, Budgeting,</td></tr>
</table>

Sr. No.	Issues	PSERC's Directives for FY 2013-14	PSERC Comments/ Directives for FY 2014-15	PSPCL reply ending Sept. 2014
				Audit and Internal Control under the provision of this new Company Act and Accounting Standards framed thereunder. The consultants has submitted "As is Report" and work is in progress. The review of Fixed Assets Records also falls within the scope of this work.
8.11	**Power purchase from Traders and through UI.**	PSPCL should strictly follow the Power Purchase Regulations notified by the Commission.	The Commission notes the action being taken	PSPCL is following the Power purchase regulations notified by Commission while making short term power purchase. Hon'ble PSERC vide its order dated 29.9.2014 approved quantum of 3028.99 MUs only under short term purchase through tenders. The actual quantum and cost of short term power purchase shall be submitted by PSPCL to PSERC at the time of review/true up for FY 2014-15. PSPCL have purchased 2799 MUs through tenders.
8.12	**Loading status of sub-trans-mission system (66 kV & 33 kV)**	PSPCL should ensure completion of the work of deloading of sub-stations as per the target i.e 31.5.2013. Details of loading be put on website to enable the consumers to know the likelihood of feasibility clearance.	During processing of ARR for FY 2013-14, PSPCL committed to complete the priority works (161 nos.) before 31.05.2013. PSPCL should ensure completion of de-loading of sub-stations at the earliest to ensure flow of adequate power which shall be available with PSPCL in future.	Out of 161 No. priority works 154 No. works has been completed/Commissioned. List of overloaded 66/33 kV grid S/Stns (loading above 70%) along with its status is available on the website of PSPCL and is regularly updated on monthly basis.
8.13	**Cost Audit of generat**	The cost audit reports along with action taken report should be	The Commission notes the action being taken.	M/s Khushwinder Kumar & Co., Jalandhar. has been appointed as cost auditor for the

Sr. No.	Issues	PSERC's Directives for FY 2013-14	PSERC Comments/ Directives for FY 2014-15	PSPCL reply ending Sept. 2014
	-ing stations	expedited.		year 2011-12 vide Work Order No.01 dated 14.10.2011. The work of maintaining the cost accounting records for year 2010-11 & 2011-12 had been allotted to M/s Khurana & Co. vide Work Order No.02 dated 29.3.2012 and work of maintaining the cost accounting records had already being in process towards finalization. Cost Auditor has submitted the cost audit report of PSPCL for the year 2011-12 and Annexures thereto. The copy of Cost Audit Report will be sent as soon as it is approved by Board of Directors.
8.14	AMR of DS/NRS consumers	PSPCL may launch program of AMR (on lease basis to avoid high Capital investment) for DS/NRS & other consumers of the State. A pilot in this regard may be carried out during 2013-14.	The Commission notes the action being taken. Progress may be reported from time to time.	At present successful techno-commercial model of AMR of DS/NRS consumers is yet to be developed in the country. However, EIC/IT is working on the pilot project of smart grid. *"...Ministry of Power (GOI) has taken up an initiative for establishing Smart Grid pilot project in India for increasing power availability, reducing AT&C losses and optimal utilization of resources for sustainable growth. For implementation of this pilot project in Punjab, a DPR of smart grid pilot project for 9 no. feeders of Tech. II Subdivision pilot include functionalities of AMI for residential &*

Sr. No.	Issues	PSERC's Directives for FY 2013-14	PSERC Comments/ Directives for FY 2014-15	PSPCL reply ending Sept. 2014
				Industrial consumer and Peak Load Management. It is further intimated that this project is yet at the incipient stage and may take long time of 2 to 3 years for execution."
8.15	**Improveme -nt in quality of service**	The **Standard of Performance (SOP)** notified by the Commission should be prominently displayed at all the sub-divisional offices / bill collection centres/complaint centres within three months from the issuance of this Tariff Order. Commission observed that **Reliability Indices data** is not being uploaded regularly on PSPCL website & scanned copies are put on the website which are not consumer friendly. PSPCL must put the RI data as per SOP requirements and supply information to the Commission for onward supply to CEA.	The Commission notes the action being taken.	Instructions have already been issued to display SOP notified by Commission Reliability indices has been uploaded on PSPCL website up to 30.9.2014.
8.16	**Fuel Audit of various Thermal Plants of PSPCL**	The Commission, in its Orders dated 10.02.2012 and 27.02.2013, has issued directions in the matter of Fuel Audit of Thermal Plants of PSPCL. PSPCL is directed to report the progress made to the	The direction to PSPCL to report the progress made to the Commission every quarter, with regard to the implementation of these directions is reiterated. Despite implementing & attaining	**The implementation ending Sep'2014 of the directives in orders dated 27.02.13 in annotated form is attached as Annexure-E and the status of implementation of recommendations given by CPRI has been attached as Annexure-F.**

<table>
<tr><th>Sr. No.</th><th>Issues</th><th>PSERC's Directives for FY 2013-14</th><th>PSERC Comments/ Directives for FY 2014-15</th><th>PSPCL reply ending Sept. 2014</th></tr>
<tr><td></td><td></td><td>Commission every quarter, with regard to the implementation of these directions.</td><td>the norm of 150 kcal/kg & even lower, PSPCL observation that it was 'not implementable' is incorrect.
Latest progress of work undertaken by PSPCL as laid down in CPRI report on Fuel Audit to improve its efficiency may be intimated within one month of issuance of this Tariff Order.</td><td>The Comparison of GCV of received and bunkered coal is as under:
<table>
<tr><td colspan="4">GGSSTP, Rupnagar</td></tr>
<tr><td>MONTH</td><td>Receipt Coal GCV (AFB) (Kcal /Kg)</td><td>Bunkered Coal GCV (AFB) (Kcal /Kg)</td><td>Difference in GCV (AFB) (Kcal /Kg)</td></tr>
<tr><td>July-14</td><td>4092</td><td>3692</td><td>400</td></tr>
<tr><td>Aug-14</td><td>3922</td><td>3683</td><td>239</td></tr>
<tr><td>Sep.-14</td><td>3876</td><td>3666</td><td>210</td></tr>
<tr><td colspan="4">GHTP, Lehra Mohabat</td></tr>
<tr><td>July-14</td><td>4088</td><td>3939</td><td>149</td></tr>
<tr><td>Aug-14</td><td>3998</td><td>3863</td><td>135</td></tr>
<tr><td>Sep.-14</td><td>4122</td><td>3974</td><td>148</td></tr>
<tr><td colspan="4">GNDTP, Lehra Mohabat</td></tr>
<tr><td>July-14</td><td>4148.09</td><td>4026.02</td><td>122.07</td></tr>
<tr><td>Aug-14</td><td>4275.93</td><td>4174.43</td><td>101.50</td></tr>
<tr><td>Sept-14</td><td>4191.20</td><td>4079.27</td><td>111.93</td></tr>
</table></td></tr>
<tr><td>8.17.</td><td>Review of PPAs with Generators / Traders</td><td>The Commission has advised PSPCL, in para 4.8.5 of the Tariff Order for FY 2013-14, to review its PPAs with the Generators/Traders</td><td>PSPCL is directed to submit the report at the earliest.</td><td>PSPCL has already handed over copies of PPAs to the consultants. Work for studying/reviewing the PPAs is in progress.</td></tr>
</table>

Sr. No.	Issues	PSERC's Directives for FY 2013-14	PSERC Comments/ Directives for FY 2014-15	PSPCL reply ending Sept. 2014
	for purchase of power from outside the State of Punjab.	for purchase of power from outside the State of Punjab, and shift from PPAs with Thermal Generators/Traders to PPAs of Hydro Generators/Traders as hydro power suits the load profile of Punjab and may prove cheaper to thermal power due to consistent rise in fuel prices, in the long run. PSPCL is directed to submit the action taken report in the matter and progress achieved on priority.		

B. New Directive issued in Tariff Order for FY 2014-15

<table>
<tr><th>Sr. No.</th><th>Issue</th><th>Directive in Tariff Order FY 2014-15</th><th>PSPCL's reply ending Sept 2014</th></tr>
<tr><td>1.</td><td>Audited Annual Accounts for FY 2012-13 and FY 2013-14</td><td>PSPCL has submitted that the audit of account for FY 2012-13 is under process and is likely to be completed before filling of next ARR and Tariff Petition. PSPCL is directed to submit Audited Annual Accounts for FY 2012-13 and FY 2013-14 along with the audit report of Statutory Auditors and CAG of India at the time of filing of ARR Petition for FY 2015-16.</td><td>Accounts for FY 2012-13 stands audited by statutory Auditors and the same has been submitted to CAG of India for supplementary audit and audit certificate is awaited. Annual Accounts for FY 2013-14 are being prepared.</td></tr>
<tr><td>2.</td><td>Per Unit Fuel Cost</td><td>The Per Unit Fuel Cost in respect of GGSSTP is more by around 11% than Per Unit Fuel Cost in respect of GHTP (Units I&II). PSPCL is directed to analyse the reasons for this higher Per Unit Fuel Cost in respect of GGSSTP and submit the action taken report for bringing the Per Unit Fuel Cost of GGSSTP to the level of GHTP (Units I&II), within two months of the issue of this Tariff Order.</td><td>PSPCL receives coal from its captive coal mine PANEM and CIL subsidiaries viz SECL (Raw and Washed coal), BCCL, CCL (Raw and Washed). The coal being used at GGSSTP is from all sources as mentioned whereas GHTP and GNDTP use coal only from PANEM and CCL (Raw and Washed coal) of which CCL Raw coal quantity is very less. Out of all these, the coal supplied from the PANEM is cheapest and from SECL and BCCL is quite expensive. The percentage of PANEM coal out of total coal received at three plants over the years is as under:
<table>
<tr><th rowspan="2">Year</th><th colspan="3">PANEM Coal percentage Out of Total Coal Received</th></tr>
<tr><th>GGSSTP</th><th>GNDTP</th><th>GHTP</th></tr>
<tr><td>2009-10</td><td>50.81%</td><td>64.26%</td><td>79.19%</td></tr>
<tr><td>2010-11</td><td>60.44%</td><td>67.10%</td><td>77.41%</td></tr>
<tr><td>2011-12</td><td>61.37%</td><td>83.49%</td><td>77.51%</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Sr. No.</th><th>Issue</th><th>Directive in Tariff Order FY 2014-15</th><th>PSPCL's reply ending Sept 2014</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><td>2012-13</td><td>55.31%</td><td>66.51%</td><td>71.77%</td></tr>
<tr><td>2013-14</td><td>51.02%</td><td>68.32%</td><td>66.84%</td></tr>
<tr><td>2014-15 (Upto Aug-14)</td><td>32.59%</td><td>53.06%</td><td>44.86%</td></tr>
</table>
This clearly shows that the major chunk of coal received at GNDTP and GHTP is of cheaper value whereas that at GGSSTP is of expensive value. This effect is also evident from the following table:
<table>
<tr><td rowspan="2">Year</td><td colspan="3">Coal Cost (Rs/MT)</td></tr>
<tr><td>GGSSTP</td><td>GNDTP</td><td>GHTP</td></tr>
<tr><td>2009-10</td><td>2779.54</td><td>2560.00</td><td>2602.00</td></tr>
<tr><td>2010-11</td><td>2896.32</td><td>2723.00</td><td>2717.00</td></tr>
<tr><td>2011-12</td><td>3081.20</td><td>2968.00</td><td>2944.00</td></tr>
<tr><td>2012-13</td><td>3718.34</td><td>3396.00</td><td>3457.00</td></tr>
<tr><td>2013-14</td><td>4054.08</td><td>3564.00</td><td>3582.00</td></tr>
<tr><td>2014-15 (Upto Aug-14)</td><td>4096.50</td><td>3716.00</td><td>3677.00</td></tr>
</table>
In view of above, it is submitted that the main reason for higher coal cost at GGSSTP as compared to GNDTP and GHTP is the disproportion in the various types of coal received at the respective stations.
</td></tr>
<tr><td>3.</td><td>System Analysis</td><td>PSPCL should establish system analysis wings under</td><td>Possibilities are being explored to study the system for</td></tr>
</table>

Sr. No.	Issue	Directive in Tariff Order FY 2014-15	PSPCL's reply ending Sept 2014
	wings	CE/Planning and CE/PPR to conduct planning and system operation studies respectively. The technical proposals submitted to the Commission requiring the system analysis studies should invariably be supported by these studies (load flow/short circuit/stability studies etc.)	load flow/short circuit/stability by Planning Organisation.
4.	**Updating of consumer's Security Registers, payment of interest on Security Consumption and Security Meter**	The Commission directs PSPCL to submit the certificate within two months of issuance of this tariff order that consumer's security registers have been updated and annual interest on Security (Consumption) and Security (Meter) payable upto FY 2013-14 has been credited to the accounts of all eligible consumers as per provisions of the Supply Code.	Payment of interest on security consumption and security meter was given to the all categories of consumers for the FY 2013-14. For updation of security registers, the Additional ACD as given by distribution organisation in the form of advices for the FY 2013-14 has been updated in the consumers accounts.
5.	**Introduction of Contract Demand System**	The Commission in para 7.4 of the Tariff Order has approved introduction of Contract Demand System for Medium Supply Industrial category consumers. To move further in this direction, the Commission intends to introduce Contract Demand System for the left out categories/consumers, i.e. for all 3 phase DS/NRS/SP Industrial consumers. In these days, every day new equipments are coming up in the market and consumers are interested in installing such equipments. The introduction of Contract Demand System for these categories will facilitate these consumers to install the load/equipments of their	The Hon'ble PSERC has directed to submit road map for introduction of contract demand system for all the three phase DS/NRS/SP industrial consumers within 2 months. With the introduction of contract demand system these categories of consumers may install the required load but they have to keep their maximum demand with in the sanctioned contract demand. Introduction of contract demand system for all the three phase DS/NRS/SP consumers shall be fruitful only if compatible meters for recording MDI for previous months and current month are available.

Sr. No.	Issue	Directive in Tariff Order FY 2014-15	PSPCL's reply ending Sept 2014
		requirement and at the same time keep their contract demand within the sanctioned limit. PSPCL is directed to submit a road map for introduction of Contract Demand System for these categories/consumers, within two months of the issue of the Tariff Order.	For introduction of this system to the existing three phase DS/NRS/SP Industrial, there are approximately 1,66,907 consumers for which PSPCL will have to install compatible meters and installation/downloading of data from such a large number of meters every month shall not be practically possible. The category-wise details of consumers are as under: 3-Phase DS consumers: 48845 3-Phase NRS consumers: 37265 SP industrial consumers: 80797 Thus, it is not possible to introduce the contract demand system for this category of consumers in one step. As PSPCL is going to implement the CD regime on MS consumers w.e.f. 01/01/2015, therefore, it is proposed to first watch the outcome of this CD regime on MS category and after which the contract demand system will be introduced on this category of consumers. **PSERC is requested to postpone for one year the introduction of Contract Demand System to the existing three phase DS/NRS/SP Industrial consumers.**

Annexure-A

ROADMAP SHIFTING OF METER OUTSIDE CONSUMER PREMISES

The schedule of shifting of balance Meters

Sr. No.	Particulars	Balance	Time Schedule										
			Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15
1)	APDRP Part-B Scheme	6.985	63333	63740	73079	30900	61844	68144	69144	68142	69142	69142	62304
2)	Non-APDRP	11.81	236252	236252	236252	236252	236252						
3)	In- house	5.77	72125	72125	72125	72125	72125	72125	72125	72125			
		21.285	273733	274140	295816	253637	284581	147481	141481	80482	69142	69142	62304

Annexure-A-1

(1) The recommendations for which action has been taken by the concerned Thermal Power Plant.

a) Short Term (Overall stations)

Sr.No	Description.	Remarks
1	Fuel oil monitoring software package	Fuel flow to each unit is being measured / monitored.
2	Maintenance tooling: portable drilling & grinders machines, measurement tooling etc.	Maintenance tools are procured as T & P items as and when required.
3	Multimedia based knowledge management infrastructure for capture of Mtc. knowledge through video recording and replay on LCD.	LCD Projector (2 Nos.) Digital Video & Still Camera (1 + 1), P.Cs are being used at GGSSTP. Mtc. module of ENERGISE System being installed will also help in knowledge sharing system.

B) Medium term measures Volume-1 (Overall Station)

Sr.No	Description.	Remarks
1	Enterprise resource management for O & M of the power plant	Being carried out by Director / HR, PSPCL, Patiala.
2	Consumption and production / receipt of major resources like coal, fuel oil, DM water, soft water, etc., must be separately monitored.	Being monitored separately by the concerned department.
3	Maintenance performance must be mapped through effectiveness, outage and rework indices.	These are being practiced at Mtc. Circle level & however after implementation of EN'RGISE System this knowledge based data will be shared by other agencies also.
4	Reliability and risk indices of equipment must be worked out in formulating maintenance strategy.	Maintenance strategy is planned as per OEM's instructions.
5	Capture and dissemination of maintenance knowledge.	Technical discussions are being held with OEM and other thermal plants to have technical knowhow. Regular training sessions are being held by TT

		Cell also.
6	Inventory analysis on the basis of cost criticality availability (MUSIC 3D approach)	Computerization is under progress through Inventory Module of EN'RGISE system. Inventory indent is being made after discussing with end users to reduce the inventory.
7	Ready reckoner books of 100-150 pages books may be brought out for Units 1-6 in sufficient copies and distributed to operation and maintenance staff.	Operation manuals in parts 1, 2 & 3 have already been supplied in all the shifts which are of approx. 200 pages.
8	Simulator training must be repeated once in 6 months with new learning of fault simulation topics/situations.	Simulator training on 210 MW P.C. Simulator is being imparted to operation staff, regularly.
9	Capture and dissemination of tacit operational knowledge through video recording of the events with commentaries.	Regular interaction / training is being carried out.
10	Performance control and optimization through emission monitoring feedback is a solution for quick detection of quality variations.	CO measurement in the flue gas path at ID discharge is available in all the units and is being used for combustion optimization. Measurement of CO in furnace is not available even in the latest plants like Rajpura. Further, ingress/leakage in the flue gas ducts do not affect the CO concentration, so the measurement of CO for combustion monitoring at ID fan discharge is sufficient.
11	IT expertise is required in: networking, Data base management and administration; hardware, IT support systems, systems engineering	EN'RGISE soft-ware package covering these items has already been installed.
12	R&M schemes must be aligned to performance improvement	This factor is already kept in mind while framing R&M Schemes.
13	Colour coding may be as per ANSI A13.1 Standard for pipe identification as follows: Yellow for gas, lube oil, steam, petroleum oil (LDO & FO), hazardous materials like corrosive fluids, etc.; Green for water, FW lines at low pr. < 5 kg/cm2; Blue for FW,	Being implemented in phased manner.

	comp. air > 5 kg/cm2; red for electric power lines, conduits carrying cables, etc.	
14	In the Procurement of items related to C&I, IT: obsolesce in the scheme/technology; site specific conditions such as protocol & parameter compatibility, etc., must be ensured before ordering.	At the time of procurement latest technology equipments are being procured and protocol & parameter compatibility is being ensured.

Short term measures : Unit # 1 & 2

Sr. No	Description.	Remarks
1	Coal flow balance between pipes to within ±10 % of the mean value through static or dynamic devices.	Already implemented through static devices.
2	O_2 measurement system in the flue gas ducting after APH and operational optimization	On line O_2 Analysers at the inlet of APH are installed (grid of 4 nos. in each unit) for combustion monitoring. Regarding installation of O_2 Analysers at the outlet of APH, these are required to monitor the ingress of air due to leakages in APH. APH leakages generally do not occur suddenly and increase gradually with time. Therefore periodic measurement rather than continuous on-line measurement is required. Desired purpose can be achieved by using portable O_2 Analysers. At present periodical analysis of O_2 in flue gases at APH outlet is being done by chemical department. However, matter was taken up with other plants to finalise the proposal for provision of O_2 analysers at APH outlet. As informed by MAHAGENCO installation of O_2 analyser grid at APH outlet is not available there also.
3	Continuous monitoring system for CO in the furnace and flue gas ducting and operational optimization.	CO measurement in the flue gas path at ID discharge is available in all the units and is being used for combustion optimization. Measurement of CO in furnace is not available even in the latest plants like Rajpura. Further,

		ingress/leakage in the flue gas ducts do not affect the CO concentration, so the measurement of CO for combustion monitoring at ID fan discharge is sufficient.
4	During overhaul all the gas flow guide vanes, direction vanes, diversion baffles are to be inspected. Materials of diversion baffles must use alloy steel with overlay of hard materials like silicon carbide or tungsten carbide.	These vanes are inspected & repaired with best suitable material.
5	Valves: replace damaged valve stem by stellited seats, valve plug with Inconel 750, plug by Nitronic 60 for boiler and turbine side valves.	R&M scheme for critical high energy drain valves & important control valves like BFP, RCV, RH spray valves have been prepared.
6	Replacement of selected old brass impellers of pumps with SS 304 impellers.	Impeller of CW Pump 1-C has been replaced with SS 304 impeller. In other pumps it will be replaced in phased manner as and when found defective.
7	Zero coal leak policy may be incorporated to prevent loss of pulverized coal	Strict watch is being kept on coal leakages through operation & mtc. Staff, and these are plugged immediately.
8	Need based boiler skin insulation replacement	Being replaced as & when required.
9	Poly glass coating of the condenser water boxes.	Poly glass coating of the condenser water boxes of Unit-1 and Unit-4 has been completed. For other units, it will be carried out during forthcoming overhauls.

Short term measures : Unit # 3 & 4

S.No	Description.	Remarks
1	Temperature sensors with indicators may be installed for energy monitoring of passing of high energy drains.	Temperature sensors with indicators have been installed
2	Replacement of selected old brass impellers of pumps with SS 304 impellers.	SS 304 impeller will be replaced in other pumps in phased manner as and when their impellers are found defective.
3	Coal flow balance between pipes in an elevation to within	Already being implemented through static devised.

	±10 % of the mean value through static or dynamic devices.	
4	Continuous monitoring system for CO in the furnace and flue gas ducting and operational optimization	CO measurement in the flue gas path at ID discharge is available in all the units and is being used for combustion optimization. Measurement of CO in furnace is not available even in the latest plants like Rajpura. Further, ingress/leakage in the flue gas ducts do not affect the CO concentration, so the measurement of CO for combustion monitoring at ID fan discharge is sufficient.
5	Secondary air damper control to be brought on auto operation	SADC are operative.
6	O_2 measurement system in the flue gas ducting after APH and operational optimization	On line O_2 Analysers at the inlet of APH are installed (grid of 4 nos. in each unit) for combustion monitoring. Regarding installation of O_2 Analysers at the outlet of APH, these are required to monitor the ingress of air due to leakages in APH. APH leakages generally do not occur suddenly and increase gradually with time. Therefore periodic measurement rather than continuous on-line measurement is required. Desired purpose can be achieved by using portable O_2 Analysers. At present periodical analysis of O_2 in flue gases at APH outlet is being done by chemical department. However, matter was taken up with other plants to finalise the proposal for provision of O_2 analysers at APH outlet. As informed by MAHAGENCO installation of O_2 analyser grid at APH outlet is not available there also.
7	Replacement of flue gas ducting zones prone to erosion with 6 to 8 mm high grade material and insulation of the flue gas ducts may be replaced (need based depending on the deterioration) by new un-bonded, felted, mineral/rock/slag wool mattresses.	Action being taken.
8	During overhaul all the gas flow guide vanes, direction vanes, diversion baffles are to be inspected. Materials of diversion baffles must use alloy steel with overlay of hard	These vanes are inspected & repaired with best suitable material.

	materials like silicon carbide or tungsten carbide.	
9	Burner tilt to be made operational.	Burner tilt mechanism is in operation in U # 3 & 4.
10	Coal pipe materials at direction changing sections and flow curvature zones to be replaced by higher grade material like high chrome alloy steel	Ceramic lined bends beings used to minimize coal leakage
11	Need based boiler skin insulation replacement	Being replaced as & when required.
12	Zero coal leak policy may be incorporated to prevent loss of pulverized coal	Strict watch is being kept on coal leakages through operation & mtc. staff, and these are plugged immediately
13	Drain, drip valves and extraction NRVs: replace damaged valve stem by stellited seats, valve plug with Inconel 750, plug by Nitronic 60.	Action being taken as per site conditions

Short term measures : Unit # 5 & 6

Sr.No	Description.	Remarks
1	Replacement of selected old brass impellers of pumps with SS 304 impellers.	SS 304 impeller will be replaced in other pumps in phased manner as and when their impellers are found defective.
2	Coal flow balance between pipes in an elevation to within ±10 % of the mean value through a variable or static device.	Already being implemented through static devices.
3	O2 measurement system in the flue gas ducting after APH and operational optimization	On line O_2 Analysers at the inlet of APH are installed (grid of 4 nos. in each unit) for combustion monitoring. Regarding installation of O_2 Analysers at the outlet of APH, these are required to monitor the ingress of air due to leakages in APH. APH leakages generally do not occur suddenly and increase gradually with time. Therefore periodic measurement rather than continuous on-line measurement is required. Desired purpose can be achieved by using portable O_2 Analysers. At present periodical analysis of O_2 in flue gases at APH outlet is being done by chemical department. However, matter was taken up with other plants to finalise the proposal for

		provision of O_2 analysers at APH outlet. As informed by MAHAGENCO installation of O_2 analyser grid at APH outlet is not available there also.
4	Continuous monitoring system for CO in the furnace and flue gas ducting and operational optimization	CO measurement in the flue gas path at ID discharge is available in all the units and is being used for combustion optimization. Measurement of CO in furnace is not available even in the latest plants like Rajpura. Further, ingress/leakage in the flue gas ducts do not affect the CO concentration, so the measurement of CO for combustion monitoring at ID fan discharge is sufficient.
5	Replacement of flue gas ducting zones prone to erosion with 6 to 8 mm high grade material and insulation of the flue gas ducts may be replaced (need based depending on the deterioration) by new unbonded, felted, mineral/rock/slag wool mattresses at few locations	Action being taken.
6	During overhaul all the gas flow guide vanes, direction vanes, diversion baffles are to be inspected. Materials of diversion baffles must use alloy steel with overlay of hard materials like silicon carbide or tungsten carbide.	These vanes are inspected & repaired with best suitable material
7	Zero coal leak policy may be incorporated to prevent loss of pulverized coal	Strict watch is being kept on coal leakages through operation & mtc. staff, and these are plugged immediately
8	Calibration of secondary air dampers to be checked and rectified during annual overhaul	Calibration done.
9	Temperature sensors with indicators may be installed for energy monitoring of passing of high energy drains.	Temperature sensors with Recorders have been installed.
10	Replacement of major extraction & NRVs with valves of better materials such as valve stem by stellited seats, valve plug with Inconel 750 (ASTM A45; Rockwell hardness 35), plug by Nitronic 60 (ASTM A479 with hard facing).	Action being taken as per site conditions

Medium term measures: For Unit-1,2,3,4,5& 6

Sr. No	Description.	Remarks
1	Valves: replace damaged valve stem by stellited seats, valve plug with Inconel 750, plug by Nitronic 60 on boiler and turbine side	R&M scheme for critical high application (High energy drain valves & critical control valves such as BFP, RCV, RH spray control valves is in progress for unit-1&2. In unit-3,4,5&6 action is being taken for replacing damaged valves, as per site conditions.
2	Replacement of Analog AVR by Digital AVR	Panels installed and commissioned

Immediate term measures Auxiliary Power Improvement - Over All

Sr. No	Recommendations	Remarks
1	Cleaning of lube oil coolers of all HT equipments	L.O.C. are being cleaned regularly.
2	Optimizing the FD fan discharge pressure	Two FD fans are required to be run as per existing logic for more than three mills (A,B,C). FD fan discharge pressure is being optimized as per system requirement / constraint.
3	Maintaining the coal – air temperature near to design value	Design values are being maintained with the existing system constraints. Preventive measuring are taken during annual overhaul.
4	Reducing the PA fan and ID fan discharge pressure near to the design value	Values are being maintained within the existing system constraints. Preventive measuring are taken during annual overhaul.
5	Optimizing the mill coal fineness by adjusting and monitoring the classifiers at regular intervals.	Being done as per requirement.
6	Arresting air leakages in Mills.	Being attended regularly.
7	Closing of seal air fan dampers of stand-by mills to avoid reverse rotation of seal air fans	No such problem of reverse rotation has been observed as discharge damper of stand-by seal air fan is kept closed.
8	Cleaning of HT and LT panels at regular intervals	It is done at regular intervals.

9	Check the end termination temperatures for all joints	The thermo vision scanning for temperature of the termination / joints of important & critical equipments is regularly done.
10	Arresting air leakages and flue gas leakages in ducts	Being done.
11	Currents of individual equipment for different plant load may be made available in the control room	Current Meters of different significant equipments are available in respective control rooms.
12	On-line computation of flue gas flow	Online computation of flue gas flow is not available at any of PSPCL Thermal Plants. However, portable static device is available to monitor flow as and when required.
13	Transformer management of ESP transformers	Transformer management has been adopted at ESP location in all the units.
14	Optimizing the time for wagon tipplers	The time taken for positioning wagons by Beetle Chargers is generally more than 2 Minutes and 30 Seconds whereas the time taken by Locomotive for placing the wagons is less. The workers placing the wagons are fully trained and experienced.
15	Strengthening and Improving the maintenance practices at CHP.	Preventive Maintenance is being carried out on each equipment. Stainless steel, wear resistance plates have been installed at Hoppers and chutes etc. for strengthening the system. Housekeeping has been improved.
16	Operating the CHP near to its full capacity	CHP System is being operated efficiently and to its full capacity.
17	Overhauling of inter-stage cooler heat exchanger	Inter-Stage cooler heat exchangers of compressors are being maintained by regular cleaning and are being replaced when tube plugging is more than 10%
18	Avoiding continuous opening of compressed air tank drain valves and reducing minor air leakages in compressed air line	To avoid continuous opening of compressed air tanks auto drain valves have been provided.
19	Optimizing the voltage at motor terminals	HT / LT bus voltages are being maintained through tap changers.

Medium term measures

1	Replacement of APH seals	Being replaced at available opportunity.
2	Reducing the flue gas pressure drop across APH	Cleaning of baskets is being done.
3	Reducing the flue gas pressure drop across ESP	Being done regularly.
4	Reducing air leakages in flue gas duct.	Being done regularly.
5	Reducing passing in BFP re-circulation by-pass valve	Maintenance of these valves being carried out at available opportunity / shut downs.
6	Optimizing the DP across FRS control station of BFP	DP has been optimized by introducing modification (3 Element Control System) in Stage-I & III and the DP across FRS control station of BFP has been reduced. In Stage-2, the same scheme has been carried out at Unit-4 and DP across FRS has reduced considerably. The scheme has also been implemented in Unit-3 and is presently in observation and tuning phase.
7	Improving ID fan efficiency	Regular maintenance of fan is being done.
8	Improving the PA Fan efficiency by overhauling of fan & motors.	Being done during overhauling.
9	Improving the SEC of mills	Preventive maintenance of mills is being done regularly.
10	Optimizing air to fuel ratio at mills	This cannot be optimized with the existing volumetric feeders except at unit-1 where gravimetric RC feeders have been installed.
11	Reducing PA pressure across APH	Optimum PA pressure subject to system constraints is being maintained.
12	Installation of auto cut-off controller for SW pumps	Level Switches for Auto-cut off SW Pumps has already been provided.

Long-term measures

1	Increasing dry fly ash evacuation system.	System stands installed from air pre-heater to ESP.
2	Installation of silo system for ash evacuation system	Installed.

(2) LIST OF RECOMMENDATION FOR WHICH ACTIONS ARE BEING TAKEN AND ARE PROPOSED TO BE TAKEN.

a) Short Term (Overall Stations)

Sr.No.	Description.	Remarks
1	Introduction of fogging systems in the coal yard and at the junction towers.	Utmost care is being taken to avoid hot spots in coal stockyard. First in/First out principle being followed while feeding the coal. Truck mounted dust suppression system has been procured and commissioned for coal pile area. Automatic water spray system has been installed on the conveyor belts. Further Air borne dust suppression system has been provided at wagon tippler.
2	Water monitoring software package	New SWAS system for On-line monitoring of Water and Steam chemistry is being installed. PO/WO has been issued for all the six units. New SWAS system for Unit-5 has already been installed and its working is under observation.
3	Procurement of TGA analysis of the coal for operational optimization	As the payment terms for the coal has changed from UHV to GCV regime, the study is being carried out to analyse the utility of this instrument in the present scenario.
4	Procurement of a CHN apparatus for ultimate analysis for optimization & coal mapping studies	As the payment terms for the coal has changed from UHV to GCV regime, the study is being carried out to analyse the utility of this instrument in the present scenario.
5	Web based monitoring and diagnostic online conditioning platform.	Formation of Condition Monitoring Group is being established in the plant.
6	Software for history archive of maintenance departments	Maintenance module provided in EN'RGISE in on line computerization projects covers maintenance system.
7	Energy management system for monitoring and control of auxiliary power of in-plant and outlying major auxiliaries.	Energy management system is being installed in phased manner. In first phase energy meters will be installed on all GT"s (15.75 KV and 220 KV side) ST"s (220 KV), CH /AH ties, unit bus incomers and station ties. Provision in hardware & software will be made to accommodate 300

		energy meters of the feeders for all the three stages. Funds has been arranged for this system, case is under administrative approval.
8	Rail tracking system through GPS or alternative technologies	Information regarding Rail tracking system through GPS technologies is being collected from Northern Railways FOIS (Freight Operation information System) installed at Railway Yard at GGSSTP siding. Similar information is also received from M/s KCT Ltd. on daily basis. Matter has already been taken up with Sr. Divisional Commercial Manager (N.R.), Ambala Cantt for providing facility of FOIS to GGSSTP.
9	Software for online coal energy management.	

B. <u>Medium term measures:</u> Volume-1 (Overall Station)

Sr.No	Description.	Remarks
1	Online condition monitoring system for Units 1-6	Online condition monitoring for critical equipment like turbine is already in service. However upgraded version has been provided on unit-3. For other units it will be provided in due course of time.
2	Rejuvenation of dust extraction systems at the coal yard	Utmost care is being taken to avoid hot spots in coal stockyard. First in/First out principle being followed while feeding the coal. Truck mounted dust suppression system has been procured and commissioned for coal pile area. Automatic water spray system has been installed on the conveyor belts. Further Air borne dust suppression system has been provided at wagon tippler.
3	IT based plant Mtc Mgmt sys. with facilities for drill down analysis of events like R &M, COH, AOH, FO, etc.	Maintenance module provided in ENERGISE package will cover R & M schemes , COH, AOH, FO etc.
4	Digitization of the work instructions, drawings, records, specifications, etc.	Some soft copies are available and rest can be made available after scanning the drawing etc.
5	Improvement in tooling techniques and specific attention to be given for power tools like cut off machines and surface grinders.	The surface Grinder and Cutting tools machines are working efficiently.
6	The process of performance trending can be taken up for	After procurement of TGA, performance trending will be done for

	operational optimization, the aid of TGA of fired coal, stress evaluation, etc., can also be used as guidelines.	operational optimization.

Short term measures: For Unit-1,2,3,4,5&6

Sr. No	Description.	Unit No.	Remarks
1	Burner tilt to be made operational	U-1 & 2	Regarding operation of it, the case under R&M Scheme will be sent for approval. However, it is Operative mechanically.
2	Secondary air damper control to be made remote auto operational.	U-1 & 2	Regarding installation and operation of SADC, the case under R&M Scheme will be sent for approval. However it is operative mechanically.
3	Retrofitting of VFDs for selected pumps above 20 kW	U-1 to 6	HFO pump of U-1 (2 Nos.) have been identified for installing VFDs, in the first phase and specifications has been finalised for their installation. Funds are being arranged. After observing their performance, case will be initiated for other units.
4	Re-insulation of ECO hopper bottom and ESP C & D passes	U-6	Needful done.

Medium term measures: ***For Unit-1,2,3,4,5&6***

Sr. No	Description.	Unit No	Remarks
01	Up-gradation of APH sealing with double seal arrangement	U-1 to 6	WO and PO has been placed on M/S BHEL for complete replacement of Air Pre Heater with modified design of double sealing arrangement of boiler of unit-1 or 2. The replacement of modified air pre-heater for boiler of 2nd unit of stage-I will be carried out after observing its performance on 1st Unit of boiler of stage-I. Thereafter, assessing the performance of Air pre-heater with modified design of double sealing arrangement on the boilers of Stage-I, decision

			will be taken for unit-3 to 6.
02	Installation of 1.5 TR or 2TR split or Window air-conditioner	U-1 to 6	Work completed.

Unit # 1 Long term measures

Sr. No	Description.	Remarks
01	RH tube replacements	Complete replacement of re-heater on boiler unit -1 has been carried out.
02	Replacement of HP heaters	HP Heaters-5&6 with modified design are available at site and will be replaced at the first available opportunity.
03	Replacement of LPH 2 and 3 tube nest	Replacement of LPHs is plant depending upon the conditions of the equipments. One such LP heater has already been replaced in Unit-2.

Unit # 2

01	RH tube replacements	Complete replacement of re-heater on boiler unit -2 has been carried out.
02	Replacement of both HP heaters	HP Heaters-5&6 with modified design are available at site and will be replaced at the first available opportunity.

Unit # 3

01	Replacement of HP heaters	Modified HP heaters will be installed at Unit-1 & 2. After observing their performance decision will be taken accordingly.

Immediate term measures Auxiliary Power Improvement-Over All

Sr.No	Recommendations	Remarks.
	Auxiliary power computation can be made on-line and Energy Management System.	Energy management system is being installed in phased manner. In first phase energy meters will be installed on all GT"s (15.75 KV and 220 KV side) ST"s (220 KV), CH/AH ties, unit bus incomers and station ties. Provision in hardware & software will be made to accommodate 300 energy meters of the feeders for all the three stages. Funds has been arranged for this system, case is under administrative approval.
2	Plotting of auxiliary power variation with plant load and made	----- do -----

	available at control room for the operator to monitor the auxiliary power	
3	Implementing fogging dust suppression system at all level from wagon tripling to bunkering	Conventionally Water Spray System has already been provided on all the transfer points as well as at Wagon Tipplers. Moreover water mist system is being provided at Wagon Tipplers. Auto Control Dust Suppression System has also been provided at some of the conveyor belts.Further Air borne dust suppression system has been provided at wagon tippler

Medium term measures

1	Optimizing the DP across FRS control station of BFP	DP has been optimized by introducing modification (3 Element Control System) in Stage-I & III and the DP across FRS control station of BFP has been reduced. In Stage-2, the same scheme has been carried out at Unit-4 and DP across FRS has reduced considerably. The scheme has also been implemented in Unit-3 and is presently in observation and tuning phase.

(3) Recommendation for which matter is under study and the action shall be taken after Outcome of detailed study:-

a) **Short Term (Overall stations).**

Sr. No	Description.	Remarks
1	Knowledge management portal.	The system is not installed at any of the PSPCL's Thermal Power Stations. The same shall be installed at Plant after getting feedback of the system from other Power Plants & Companies installing this system (1.5 to 2 years).
2	Online heat rate evaluation package for Units 1 to 6	The system is not installed at any unit of GGSSTP Thermal Power Stations. The same shall be installed at Plant after getting feedback from other Power

		Plants regarding its feasibility of installing at this plant (2.to 2.5 Year).
3	Ultrasonic level indicators for all fuel oil tanks	Fuel oil in these tanks being highly inflammable, possibility of installation of any electrical / electronic equipment on such tanks has been taken with IOCL and reminder has been given, but their response is still awaited. (2 to 2.5 years)
4	Automatic online sampling of conveyor coal going into burners.	Testing is being done in the Laboratory after taking samples from running belt. The system is running smoothly. Use of automatic online sampling will be studied and procured if found feasible. (2 to 2.5 years)
5	Microwave or Ultrasonic bunker level monitoring system with digital system	A committee of GGSSTP has visited CSTPS & BTPS of MAHAGENCO. There is one no. Acoustic type system at BTPS but nothing installed at CSTPS, Chandrapur so far. CSTPS is, however, in the look out to install radar type systems. At GGSSTP, feasibility of installation of Bunker level monitoring system at site and technical specifications are being re-examined.

Short term measures: For Unit-1,2,3,4,5&6

Sr.No	Description.	Unit No	Remarks
1	O_2 measurement system in the flue gas ducting after APH and operational optimization	U-1 to 6	On line O_2 Analysers at the inlet of APH are installed (grid of 4 nos. in each unit) for combustion monitoring. Regarding installation of O_2 Analysers at the outlet of APH, these are required to monitor the ingress of air due to leakages in APH. APH leakages generally do not occur suddenly and increase gradually with time. Therefore periodic measurement rather than continuous on-line measurement is required. Desired purpose can be achieved by using portable O_2 Analysers. At present periodical analysis of O_2 in flue gases at APH outlet is being done by chemical department. However, matter was taken up with other plants to finalise the proposal for provision of O_2 analysers at APH outlet. As informed by MAHAGENCO installation of O_2 analyser grid at APH outlet is not available there also.
2	Continuous monitoring system for CO in the furnace and flue gas ducting and operational	U-1 to 6	CO measurement in the flue gas path at ID discharge is available in all the units and is being used for combustion optimization. Measurement of CO in furnace is not available even in the latest plants like Rajpura. Further, ingress/leakage in the flue gas ducts do not affect the CO

	optimization		concentration, so the measurement of CO for combustion monitoring at ID fan discharge is sufficient.
3	Performance optimization software.	U-1 to 6	To be considered after upgrading the existing field equipment and after study at other power plants regarding its usefulness / effectiveness at old power plants (2 years).
4	Gas proportioning dampers, flue gas, primary and secondary air dampers should be retrofitted with cold hardened material (medium alloy steel or high carbon steel) within built hard overlay of tungsten carbide.	U-1 to 6	Being studied at other projects before implementation. (2.5 to 3 years).

Medium term measures

1	Installation of VFD for primary crusher motors	Technical specifications have been prepared and procurement process will be started shortly.
2	Installation of motor controller for conveyor motors	Technical specifications have been prepared and procurement process will be started shortly.

Long-term measures

01	Installation of pressure and flow transducers to monitor the SEC for major auxiliaries	Possibility of installation of such transducers shall be explored. (2 years).

(4) The recommendations for which no action is required or Thermal Power Plant does not intend to take any action against the recommendations alongwith suitable reasons:-

A. Short Term (Overall stations)

Sr. No	Description.	Remarks
1	Installation of inhaul, outhaul betel chargers in CHP 1 & 2	All though Beetle Charger of Wagon Tippler No. 1, 2, 3 have been installed since 1984 but the same have become obsolete and are very slow and fault prone. The beetle charger of

		Wagon Tippler No. 4 & 5 are being revived. Also the feedback received from other power plant is not positive as most of Beetle charges installed are inoperative. Placement of wagons is being done with the help of LOCO motive engine which are more efficient and fast.
2	Rotary pneumatic or electrical hammers for crushing coal lumps	2 No. Grabber machines & electric wire rope hoist are available to pick up the stones from the grizzly of wagon tippler efficiently, so Rotary pneumatic or electrical hammers are not required.

B. Medium term measures Volume-1 (Overall Station)

Sr.No	Recommendations	Remarks
1	For further refinement in the coal heat value determination, it is recommended to measure sample to sample variation in a rake (for receiving end coal) for each rake and to measure in-sample variation to select the minimum sample size.	Multiple sampling is not practicable. 15 no. samples are taken from a rack and composite sample is prepared and tested for calculating calorific value of the coal by bomb calorimeter as per IS and according to the terms of Fuel Supply Agreement with the coal companies.
2	As above, for bunkered coal	Samples are being collected in each shift and a composite sample is prepared and tested for calculating calorific value of the coal by bomb calorimeter. This method gives true representative sample.
3	Trend analysis of coal by the Coal Handling Plant which can be used as an input for more meaningful load predication for ABT.	At present there is no link between trend analysis of coal & load prediction for availability based tariff. Trend analysis of coal is being used in case of direct feeding of coal to specific units in case of any requirement.
4	As turbine is the single largest reason for heat rate deviation, conduct and benchmarking of steam path audit of the steam turbine internals after every capital overhaul of the turbine.	Regarding steam path audit, matter was taken up with M/s. BHEL being OEM & overhauling vendor, Steam path audit serves no purpose as whatever possible at site is already being done on regular basis such as replacement of rotor fins (gland area), alumina blasting of rotor & casing of Turbine etc. to improve efficiency. No other work is possible at site. Re-balding whenever required is carried out at BHEL works

5	Circular conveyors for conveying of fines from the coal yard to the bunkers.	Not feasible.
6	As is followed in stations In USA and Europe, the previous yrs. data on the same day may be used as in input for load prediction ABT	Not required as the loading of the units is being monitored by Power Controller, Patiala.
7	Motor controller for vacuum pumps	It is discussed with the company and it is not techno economical suitable.

Medium term measures: Unit-1, 2, 3, 4, 5 & 6

Sr.No	Description.	Remarks
1	Steam path audit and re-blading of blades.	Regarding steam path audit, matter was taken up with M/s. BHEL being OEM & overhauling vendor, Steam path audit serves no purpose as whatever possible at site is already being done on regular basis such as replacement of rotor fins (gland area), alumina blasting of rotor & casing of turbine etc. to improve efficiency. No other work is possible at site. Re-blading whenever required is carried out at BHEL works.

Long term measures: Unit-1, 2, 3, 4, 5 & 6

Sr.No	Description.	Remarks
01	LP turbine retrofits	As per BHEL re-blading with latest design not possible in old turbine. Old LPT Rotor of unit no.3 had been replaced with new spare LPT Rotor during shut-down (April-2013).

Annexure-B

Action taken by GNDTP, Bathinda on the Recommendations of CPRI on Heat Rate

1. Short Term Measures :

(A) Recommendations for which action has been taken:

Sr. No.	Recommendation	Action Taken
1.	**Installation of belt weighers** for more key coal conveyors together with instrumentation for measurement of unit wise bunkered coal in addition to existing system	Microprocessor based belt weighers are already installed. Belt weigher readings based on the tripper trolley movement in order to calculate the coal fed to the individual units are being recorded in CHP cell. Gravimetric feeders have been installed on Unit #3 & 4 during R&M.
2.	Introduction of **fogging systems** at various locations in the coal yard as well as at the junction towers.	A portable fogging system has already been installed for spray in the CHP & coal pile area. Further, 8 no. online dust suppression systems at all transfer points of the conveyors have also been installed.
3	Ultrasonic level indicators for all fuel oil tanks	RADAR based system for oil dip measurement in the storage tanks has already been installed.
4.	The software resources for online tendering and paperless process need to be upgraded.	E-tendering is being done for tenders costing more than Rs 5 lacs. The software for paperless process is being installed by M/s TCS under project of Computerization of Thermal Plants of PSPCL.
5.	Maintenance tooling: portable drilling machines, portable high speed cut off machines, portable grinders, measurement tooling, etc., for BM, TM, EM, etc	Latest tools available in the market are being procured time to time in the Central Tool Room.

Sr. No.	Recommendation	Action Taken
6.	Portable, pressure, temperature monitors, power profilers and flow measuring devices for quick detection of energy losses.	All portable measuring devices except liquid flow meters are available.
7.	Operation & combustion optimization through O_2 measurement system in the furnace and flue gas ducting and operational optimization	Operation and combustion optimization is being done manually by monitoring O_2 in furnace and before APH through online O_2 analyzers. Also, a new software 'Ebsilon' shall be installed at the plant for optimization of operation parameters under the guidance of CEA/BEE/GIZ of Germany. 2 no. officers (1 Addl SE and 1Sr. Xen) from the plant have already attended training programme at Delhi. Further action in this regard shall be taken as per guidelines of CEA.
8.	Coal flow balance between pipes in an elevation to within ±10 % of the mean value through static or dynamic devices	Primary Air measurement is available for all the 16 no. PC feeders to maintain balanced coal flow in all the 4 feeders of a particular elevation (Indirect firing).
9.	Safety door on L & R sides of boiler at entrance of 2nd pass to prevent boiler over pressurization to be re-made or made operational	Such doors are not provided in the original design. Matter was taken up with the OEM. As per them, there is no need of such doors in this design.
10.	Replacement of selected old brass impellers of pumps with SS 304 impellers.	1. Bronze impellers of CW pumps are being replaced with SS impellers in phases. **Impellers of 9 no. pumps (1A, 1B, 2A, 2B, 3A, 3B, 3C, 4A, 4B) have already been replaced.** By the year 2015, all CW pumps impellers will be replaced with SS impellers 2. CEPs are 6/7 stage pumps and only first impeller is of SS and other Impellers are of bronze. Possibility to replace bronze impellers with SS impellers was explored, but compatible SS impellers are not available. 3. Impellers of other pumps at plant shall be replaced with SS impellers wherever possible.
11.	Introduction of sliding pressure operation of unit	Units are being operated with valves wide open (VWO), there is no EHTC (Electro Hydraulic Turbine Control) on the running units.

Sr. No.	Recommendation	Action Taken
12.	**Zero coal leak** policy may be incorporated to prevent loss of pulverized coal	The policy is in implementation. Any coal leakage observed is immediately attended.
13.	Pressurization of turbine area to avoid dust in turbine floor.	Air washer system is already installed for turbine area.
14.	Need based insulation replacement during overhaul	Running contract for insulation is in operation and damaged insulation is replaced regularly as per requirement.

Apart from above, following major works have been done to improve heat rate at the plant:-

1. Approximately 1500m length WW tube , suspected to be weak, has been replaced on unit no.1

2. Deposits on HP turbine of unit-1 have been removed by sand blasting which has resulted in reduction in first stage pressure thereby improvement in heat rate.

3. HPHs have been taken in circuit on unit #1.

4. During annual overhauls of unit no.1&2, a total of 66 no. old 6.6 KV MOCBs have been replaced with new vacuum circuit breakers.

5. Approximately 400m length back pass screen tubes , suspected to be weak, have been replaced on unit no.2

With all the above efforts, GNDTP, Bathinda achieved SHR of 2810.64 Kcal/Kwh against the target of 2825 kcal/kwh fixed by Hon'ble PSERC for the year 2012-13. It has further been reduced to 2758.26 during 2013-14.

(B) List of recommendation for which actions are being taken and are proposed to be taken:

1.	Software for online coal energy management	There are two No. in-motion weigh bridges installed at GNDTP. The software in respect of both the weigh bridges has been upgraded to fetch all data recorded online to other offices. Now, all data available on the computers is being provided in soft copy to Fuel Cell. For the online transfer of data from weighbridges to Fuel section and Accounts wing, optical fibre cable has already been laid. However, the online transfer of data can be done when the software at the weigh bridges & the TCS Server are integrated.
2.	Chemical analysis instruments for GCV and other analysis	Procurement of one no. additional Automatic Bomb Calorimeter is under process. PO has already been placed by GHTP.
3.	Inventory control software	The software is already under installation by M/s TCS Ltd under project of Computerization of Thermal Power Stations of PSPCL.
4.	**Multimedia based knowledge management** infrastructure for capture of maintenance knowledge through video recording and replay on LCD screen.	Use of modern IT practices is being encouraged at all levels at the plant. Project on Computerization by M/s TCS Ltd and mapping of performance parameters using EBSILON software (under IGEN Project Phase-II of CEA, BEE and German firm GIZ) are steps initiated in this direction.
5.	Renovation of lift with energy efficient control cards	Renovation of lift on Boiler side of stage-2 units with energy efficient control cards is under process.
6.	Continuous monitoring system for CO in the furnace and flue gas ducting and operational optimization	On #3 the Flue Gas Analyser (at ID Fan 3A discharge) has been commissioned on 15-11-12 and CO measurement is available. On unit #2 the Flue Gas Analyser (At ID Fan 2A inlet) is in working condition. The Flue gas analyser of #1 has been got rectified from OEM.
7.	Making operational wall and LR soot blowers for once in a shift operation for furnace cleanliness	LR soot blowers are not provided in the original design of Alstom make boilers of Stage-I and wall soot blowers are not operational. Matter is being taken up with Alstom to make wall soot blowers operational. However, both types of soot blowers have been installed on boilers of Unit #3 & 4 under R&M. These will be operated as per the recommendations of OEM.

(D) The recommendations for which no action is required or Thermal power plant does not intend to take any action against the recommendations along with suitable reasons:

1.	Installation of inhaul-outhaul **beetel chargers** in CHP	The OEM firm M/s ELECON after visiting the site at GNDTP Bathinda for proposing augmentation of CHP had submitted their proposal and budgetary offer. The proposal was discussed and dropped due to its very high cost of Rs 4.61cr for each charger (excluding erection commissioning, civil and electrical works). Also, feedback received from other plants is not positive as most of the Beetel Chargers installed earlier are inoperative. Beetel Charger installed originally at GNDTP is also inoperative and lying abandoned since long. ASE/CHP visited GTPS Gandhinagar in July,12 to study CHP. Even there, only outhaul Beetel Charger is operative.
2.	**Rotary pneumatic or electrical hammers** for crushing coal lumps	Due to space constraints at existing Wagon Tippler Hopper, proposal to install Rotary pneumatic or electrical hammers is not feasible.
3.	Retrofitting of VFDs for selected pumps above 20 kW	In order to decrease auxiliary power consumption, high efficiency motors have been installed on 2 no. BCW pumps. Energy saving of about 7kw per motor will be achieved. Besides this, high efficiency BFP cartridges have been installed on 2 units resulting in saving of more than 170kw. VFD is beneficial only where there is a gap between Best Efficiency Point and actual running point or where auto loop is through recirculation.
4.	Modernization of air compressors with VFDs	VFDs for Air Compressors as recommended by CPRI are not required because Air Compressors at GNDTP are equipped with loading/unloading facility.
5.	**Rail tracking system** through GPS or alternative technologies	Related to Railways. It requires installation of tracking system on all the rakes. The rakes for PSPCL are not fixed and therefore cannot be identified.
6.	**Grab cranes** may be used for removal of stones from the wagon tippler area. Removal of stones before entry into the wagon tippler area.	Installation of Grab crane is not possible in view of the space constraints and obsolete design of Wagon Tippler Hopper. Removal of stones before entry into the wagon tippler area is also not feasible as the 7 hrs free time allowed by the railway for unloading is very less and at GNDTP the rakes are being unloaded with best possible efforts on wagon tippler, Poclain and Manual Unloading Hopper to avoid demurrage. Picking of stones before entry to Wagon Tippler area is not possible

7.	Water monitoring software package is to be in place. The package must have capability to draw inputs from the various field instruments (which will act like IEDs) and make an on-line continuous data base grid of the information for generation of various types of information such as consumption per unit per shift, consumption during cycling operations, operator wise consumption, etc., to enable the performance optimization group to take control action on the areas of wastage and excessive consumption. Consumption and production should be separately monitored. At present only gross data is being recorded and is not useful for energy control.	There is no information regarding its availability at any power plant. However, measurement of raw water intake and outlet through slurry is available. Quality of DM Water is being monitored manually and through online SWAS system. Existing DM Plant of stage-2 is being replaced with new "state of the art" 2 streams DM Plant with capacity of 2x37.5m^3/hr. Therefore, no need of such software is envisaged at the plant.
8.	A fuel oil monitoring software package is to be in place. When digital ultrasonic level data of tanks, digital individual unit wise oil flow data, individual gun hours data, GCV of oil etc., are available online, the software package calculates the oil receipts, oil consumption, shift wise, unit wise oil consumption, specific oil consumption, time trace of guns, oil consumption during cycling operations, heat consumption due to oil usage, contribution to heat rate etc.	Receipt and consumption of oil in the storage area is being monitored through manual dip system which is the widely used safest method. Consumption of oil on individual unit is available through high accuracy 'Coriolis' mass flow meters installed at each unit. Further, Fuel oil is only used as a secondary fuel at the plant. As consumption of fuel oil on individual unit is measured and recorded, data can be used wherever required for any calculation. Therefore, no need of such software is envisaged at the plant.

2. Medium Term Measures

(A) Recommendations for which action has been taken:

Sr.No.	Recommendation	Action Taken
1.	Replacement of APH S & T heat exchanger matrix	About 3000 no. ferrules were replaced on unit-1&2 during 2012-13 (up to October' 12). Besides, 4300 & 6000 no. ferrules were replaced on unit-1&2 respectively during overhauls of these units in FY 2012-13. Another 5300 No. have been replaced on unit-1 during its COH carried out in Feb-Mar'14. Further, refractory has been casted at the top plate of APH block No.1 on unit-1&2.
2.	Replacement of damaged AC pressure distribution pipes of cooling tower with HDPE headers	257 No. broken pipes of cooling towers were replaced during the year 2012-13 on unit-1&2. Further, 2380 No. missing nozzles were restored and 2180 No. choked nozzles cleared on these units. 35 No. broken pipes and 320 No. missing nozzles have been replaced on unit-1 during its COH in Feb-Mar'14. Also, 350 No. nozzles have been cleaned. Due to the above measures, performance of cooling towers has significantly improved.
3.	Strengthening of dry ash evacuation system including in-leak minimization and up gradation of transport air compressor to achieve **'zero ash leak' policy**	Ash utilization has increased significantly due to adoption of better operational and maintenance practices. Worn out pulleys/bodies/cones of vacuum pumps have been replaced. All out efforts are being made by all the agencies to minimize ash leakages.
4.	Up gradation of existing controllers, workstations & engineering station computers with latest version.	Controllers and others system have already been replaced during R&M of the units.
5.	Boiler and turbine side Valves: replace damaged valve stem by stellited seats, valve plug with Inconcl 750, plug by Nitronic 60.	All the turbine and boiler side valves have been replaced with valves appropriate to the process conditions under R&M of the units.

(B)List of recommendation for which actions are being taken and are proposed to be taken:

1.	Enterprise resource management for O & M of the power plant	Most of the modules available under modern ERP packages are being installed under the project of Computerization of PSPCL Thermal Plants being carried out by M/s TCS.
2.	Knowledge management portal.	Use of modern IT practices is being encouraged at all levels at the plant. Project on Computerization by M/s TCS Ltd and mapping of performance parameters for using EBSILON software are steps initiated in this direction.
3.	IT based –plant maintenance management system such as SAP, REMCO, etc. to be implemented with facilities for drill down analysis of events like COH, AOH, FO, etc.	Maintenance management package is being installed under project of Computerization of PSPCL Thermal Plants.
4.	Software for history archive of maintenance departments	----do----
5.	Steam path audit restoration of steam paths during a COH	Restoration of steam path will be done during COH of the units.
6.	Boiler side modifications through OEM (of R & M) to ensure heating surfaces are in order	Matter being pursued with OEM.

(D)The recommendations for which no action is required or Thermal power plant does not intend to take any action against the recommendations along with suitable reasons:

1.	Online condition monitoring system for Units 1 & 2. Successful condition monitoring can bring down maintenance costs by making a distinction between defective equipment and excluding good equipment for maintenance. It also helps in identifying equipment when they enter the danger zone well before they reach damage zone. **Recommendation:** For realization of benefits of condition monitoring in terms of quick identification of abnormal operation and danger zone well before it reaches the damage zone or catastrophic zone, the following measures are required: **1:** A policy for organized online condition monitoring may be evolved. A condition monitoring group which is a nuclear group for monitoring HT auxiliaries once monthly and other auxiliaries as and when required, must be in place. **2:** Cost economical condition monitoring of the station hardware/ equipment may be divided into four categories: On-line monitoring and tripping on parameters outside safe range. On-line monitoring with annunciation on parameters outside safe range. Off-line daily monitoring. Off-line weekly/monthly monitoring. **Recommendation:** For on-line and continuous monitoring equipment SMS alert systems may be installed to be activated only if the parameter goes out of range. **3:** Presently the condition monitoring group is entering the scene only when high level of vibrations are sensed in any auxiliary such as ID fan, cooling water pump, PA fan, etc. **Recommendation:** It is recommended to have a round the clock condition monitoring group with the job responsibility of monitoring the condition of equipment like vibrations, temperature rise, leakage levels, oil depletion, loss of lubricant, leakage, etc., and recommend to the Maintenance Sections which equipment needs to be attended to and give advance warning	Online condition monitoring and tripping on parameters like bearing temperatures, lube oil pressure is available with adequate alarm system. Online vibration monitoring for turbines of all the units is available. For all major auxiliaries, vibration monitoring is done periodically. Thermography is also being used. Periodical vibration monitoring of auxiliaries is simpler and cost effective solution and sufficient tools are available with plant maintenance cells. Therefore online vibration monitoring of auxiliaries is not envisaged. Condition monitoring policy for electrical equipments has been selectively evolved to reduce its outage. Presently tan delta and temperature measurement of generator bushings, switch yard equipment and other electrical machinery is being taken with Thermo vision camera. Results of these tests are quite satisfactory.

2.	**Web based monitoring and diagnostic online conditioning** platform. **Condition based maintenance (CBM) using advanced predictive maintenance technologies**: The CBM with continuous monitoring of equipment and trending the failure progression will drastically improve the equipment reliability. (Increases MTBF and reduces MTTR). Critical auxiliaries should be subjected to online predictive monitoring of vibration, wear debris analysis and ferrography, current signature analysis of motors, Thermography etc.. The data captured from on line monitoring should be converted to 'Daily equipment health monitoring report' for maintenance section as well instantaneous equipment health signals to operation control. **Recommendation:** Web based monitoring and diagnostic online conditioning platform for total plant equipment could be thought of for systematic condition monitoring of an entire unit.	Web based monitoring and diagnostic support is appropriate in remote locations where equipment is unattended. No such location is there in the plant. However, web support of ABB is being used for discussion/remedial measures for problems of DCS system installed on stage-1 units whenever required.

3.	The **BFP and other Lube oil coolers scoop oil cooler** heat exchanger area may be doubled by using two exchangers in two tier-one on top of the other with oil in series between these and water in parallel.	AT present no cooler requires any modification at GNDTP as detailed under. **A) Turbine Lube Oil coolers** New plate type coolers have been installed at stage-2 during ongoing R&M and are giving satisfactory performance at unit-3. Dismantled coolers of stage-2 have been installed at stage–1 (unit-1&2) and giving better performance than previously installed coolers as these coolers are Online Back washing type. **B) BFP Lube Oil and Working Oil coolers** Limiting values of BFP oil temperature as per VOITH Manual are as under. a) Lube oil temperature Operating range –35 ^{0}C to 55^0 C Alarm – 55^{0}C b)Working Oil temperature Operating range – 60^0 C to 110^0 C Alarm – 110^0 C Trip – 130^0 C The above temperatures are being achieved well within the permissible limits with the existing coolers even in peak summer day on all the BFPs.

3. General Recommendations

(A) Recommendations for which action has been taken:

Sr. No.	Recommendation	Action Taken
1.	Consumption and production/receipt of major resources like coal, fuel oil, DM water, soft water,etc. must be separately monitored.	Production & consumption of DM water/soft water is being maintained in the log sheets of DM pant on daily/monthly/yearly basis. Consumption of coal is also being maintained on daily/monthly basis. Fuel oil consumption is being monitored and maintained in the daily dip register.
2.	**Sampling improvement:** Sampling through automatic samplers under the supervision of chemists.	A committee of engineers and officers of chemical wing from all PSPCL thermal plants have done preliminary study for operation and other aspects of Automatic Coal Sample Collection (Auger) machines in all Power plants and has submitted a report after visiting and getting feedback from the plants where such machines are in operation. At the first instance, one machine is being procured for trial run at PSPCL Thermal Plants. However, a committee of 7 No. officers has already been formed for performing random quality checks of received & bunkered coal and monitoring the process of sampling & analysis.
3.	**Sample preparation improvement:** Sampling preparation through standard crushing and pulverizing equipment.	Standard crushers & pulverizers are available in coal sample preparation room for preparation of coal samples as per required standards. For further improvement in efficiency, a new set of crushers & pulverizers has been procured and installed.
4.	**Analysis:** GCV determination only through a bomb calorimeter.	GCV is already being determined through Automatic Bomb Calorimeter of high accuracy. Further, procurement of an additional Bomb Calorimeter is under process.

Sr. No.	Recommendation	Action Taken
5.	Policy to go in for digital instrumentation preferably Intelligent electronic devices (IEDs) as preferred mode.	'SMART' instruments have been/ are being installed on the services wherever possible.
6.	Digitization of the ISO 9001 QMS work instructions	Work instructions as per ISO 9001 have already been digitized. Major performance targets are being quantified and monitored accordingly.
7.	Process audits for Accounts and Administrative Processes as these have a bearing on the main business domain of GNDTP.	Auditing is being done as per the guidelines of the PSPCL.
8.	Condition monitoring policy to be evolved and round the clock graded monitoring of units of difference classes of equipment is required for maintenance decision support as well as outage reduction.	Condition monitoring policy for various electrical equipment has been started and efforts are being made for timely detection of faults through Thermo vision camera, tan delta measurement to reduce forced outages.
9.	Capture and dissemination of maintenance knowledge	Technical knowhow is regularly captured from internet and by deputing officers to the better performing power stations like Dahanu TPS for training. The knowledge gained is shared among Officers and staff through discussions and trainings.
10.	Parameter defect card system must be introduced for operational optimization	Hourly log sheets are maintained at each location and any deviation in parameters is recorded in message register and got noted from concerned maintenance cell. Pending faults are recorded in fault register/annual overhaul faults list, as the case may be.
11.	Operational optimization should be essentially implemented. Focused monitoring and control for achieving reduction in coal consumption.	An Efficiency Group to monitor the performance of units has already been formed under the Chairmanship of Dy. CE/Th Operation.
12.	Quality circles must be initiated at GNDTP	2 no. quality circles have already been formed at GNDTP
13.	Annual overhauls need to be carried out every year and should not be deferred by over 2 months under any circumstance.	Ernest efforts are made to carry out Annual Overhauls of the units timely every year. However, instructions of State Load Dispatch Centre have to be followed.

Sr. No.	Recommendation	Action Taken
14.	Overhaul should be oriented towards performance. Testing before and after an AOH using the same type of coal and the results should be archived.	Performance parameters before and after the annual/capital overhaul of the units shall be recorded/monitored by the efficiency group. However it is not possible to use same type of coal for performance monitoring before and after annual/capital overhaul.
15.	'Zero coal leak tolerance' policy	The policy is in implementation. Any coal leakage observed is immediately attended.
16.	'Zero steam leak tolerance' declaration	Efforts are being made to minimize steam leakages. However, the DM makeup is maintained within the permissible limits.
17.	Dynamic proactive vendor development	Every effort is made to develop new vendors.
18.	The percentage of tenders turning into orders must be increased to over 90 %.	The percentage of tenders turning into orders is already very high.
19.	Vendor development must also involve grading the tooling and instrument capability of the vendor and giving preference to vendors with superior tooling and instrumentation.	Due care is being taken to select the suitable contractors at the time of registration.
20.	Long term contracting can be entered into to minimize inventory levels for many items.	Policies of PSPCL are being followed.
21.	The station may seek exciting challenges such as operating one unit continuously for 100 days at a stretch.	Records regarding continuous running are monitored at GNDTP. Unit 1 operated continuously for record 67.97 days (15.11.13 to 22.01.14) post R&M while Unit 2 operated continuously for record 74.29 days (25.11.13 to 07.02.14) post R&M. Also, Units 1 & 2 together operated continuously for record 57.88 days (25.11.13 to 22.01.14) post R&M. Plant performance has improved with the continuous efforts of officers & staff.
22.	Profiling of start ups and shut downs to optimize resources.	Already implemented.

Sr. No.	Recommendation	Action Taken
23.	Equipment /system centric costing system may be given consideration in preference to the traditional Section basis.	Policies of the PSPCL are being followed.
24.	Dynamic optimization of stock levels provides opportunities for cost reduction by maintaining optimal safe stock which is lower than the present levels.	Efforts are made to maintain inventory levels as per norms of PSPCL/CEA etc.
25.	Resource consumption and conservation (coal, oil, DM water make up) is also to be given importance in the operational process and decision maker must be aware of key resource ratios.	Extensive monitoring of consumption of various resources is already being done.
26.	Decision maker in operations must be trained and regularly updated with policy issues of tariff, ABT, OLC & its financial consequences on operation decisions	O&M personnel are sent for various trainings as per policy of PSPCL.
27.	F/O data needs to be captured and converted into knowledge by trying to understand the origin of the outage and various scenarios of avoiding the outage.	Tripping analysis committee has already been formed to analyze the outages and to suggest remedial measures to avoid recurrence.
28.	Ready reckoner books of 100-150 pages books may be brought out for Units 1-5 in sufficient copies and distributed to operation and maintenance staff.	Ready reckoner books are prepared time to time and distributed to O&M personnel.
29.	As is followed in stations In USA and Europe, the previous year's data on the same day may be used as in input for load prediction ABT	It is being taken care by the Load Dispatch System of PSPCL, at Patiala.

Sr. No.	Recommendation	Action Taken
30	IT expertise is required in: networking, Data base management and administration; hardware, IT support systems, systems engineering	Regular recruitment of IT professionals is made by PSPCL.
31.	Formation of Management and engineering quality circle at the TPS	Two Quality Circles have already been set up at the plant for contribution towards quality improvements.
32.	Colour coding may be as per ANSI A13.1 Standard for pipe identification as follows: Yellow for gas, lube oil, steam, petroleum oil (LDO & FO), hazardous materials like corrosive fluids, etc.; Green for water pipe lines, feed water lines at low pressure say below 5 kg_f/cm^2; blue for feed water, compressed air carrying at above 5 kg_f/cm^2; red for electric power lines, conduits carrying cables, etc.	Colour coding of various pipelines/feed lines for different mediums is already as per prescribed standards.
33.	On-Job rotation policy should ensure job rotation into three areas in the entry level, three other areas in second level and balance areas at the third level as a pre-qualification to the next higher level.	Job rotation is being done. However, rotation/change on promotion is a PSPCL prerogative.

(B)List of recommendation for which actions are being taken and are proposed to be taken:

1.	Trend analysis of coal may be performed by the Coal Handling Plant which can be used as an input for more meaningful load predication for ABT.	Proper co-ordination is ensured between CHP and Operation personnel for feeding coal of desired quality, as far as possible, as per load demand.
2.	Digitization of the work instructions, drawings, records, specifications, etc.	Digitization is being done wherever possible.
3.	ICT facilities must be got audited from a reputed & recognised IT audit firm for ensuring high degree of security, reliability and data mining tools.	IT system is being upgraded regularly. The auditing of the same shall be studied for implementation at appropriate time.
4.	Improvement in **tooling techniques** and specific attention to be given for power tools like cut off machines and surface grinders. Tooling competence of contractors to be evaluated while selecting contractors.	Efforts are made to procure latest available tools in the market. Due care is being taken to select the suitable contractors at the time of registration.
5.	Maintenance performance must be mapped through effectiveness, outage and rework indices.	Comprehensive maintenance module is being installed under the project of Computerization of PSPCL Thermal Plants through M/s TCS Ltd which will cater to these requirements.
6.	Reliability and risk indices of equipment must be worked out in formulating maintenance strategy	Maintenance module being installed under the project Computerization of PSPCL Thermal Plants will be based on RCM (Reliability Centered Maintenance)
7.	5 year rolling plan for maintenance should be got approved in one go rather in yearly instalments	Action is taken as per policy/instructions of PSPCL management.
8.	Inventory analysis on the basis of cost criticality availability (MUSIC 3D approach)	Inventory of spares is being maintained under insurance (Critical Spares) and routine capital-cum-O&M spares (Non-critical spares) at the plant. Inventory Management module is being installed under the project Computerization of PSPCL Thermal Plants through M/s TCS Ltd.
9.	KAIZEN is recommended for improvements in maintenance and operations procedures.	It is covered under 2 no. quality circles already formed at GNDTP.

10.	Video conference facilities of GNDTP to be put to effective usage for HO-station and Station to station meetings/discussions.	Video conference facilities/ system have been installed at the plant.

(C) Recommendations for which matter is under study and the action shall be taken after outcome of detailed study:

1.	Development and implementation of major maintenance works standards must be made mandatory for all.	Major maintenance work standards being followed at GHTP (the latest thermal plant of PSPCL) are being studied and implemented selectively at GNDTP.
2.	A ready reckoner data base on the hourly generating costs of each set as also the sensitivity of generating cost to heat rate is essential for decisions on merit order loading of sets.	The implementation shall be done after studying the techno-commercial aspect of the same.
3.	The process of performance trending can be taken up for operational optimization, the aid of TGA of fired coal, stress evaluation, etc., can also be used as guidelines.	TGA (Thermogravimetric Analyzers) are not available at any of PSPCL Thermal Plants. Further, it is not possible to maintain source wise coal stock at plant. However, the process shall be studied for implementation.
4.	Capture and dissemination of tacit operational knowledge through video recording of the events with commentaries.	Practice is not followed at any of PSPCL Plants. However, it is being studied for implementation.

(D)The recommendations for which no action is required or Thermal power plant does not intend to take any action against the recommendations along with suitable reasons:

1.	For further refinement in the coal heat value determination, it is recommended to measure **sample to sample variation** in a rake (for receiving end coal) for each rake and to measure **in-sample variation** to select the minimum sample size.	Multiple sampling is not practicable. The suggestion given by CPRI will not lead anywhere in the matter of improvement. The present method gives true representative sample as per IS and according to the terms of FSA with the coal companies
2.	For further refinement in the coal heat value determination, it is recommended to measure **sample to sample variation** in a shift (for bunkered coal) for each bunker and to measure **in-sample variation** to select the minimum sample size.	Multiple sampling is not practicable. The suggestion given by CPRI will not lead anywhere in the matter of improvement. Samples are being collected on 2 hourly basis and composite sample is being made daily from all the samples collected from running RC chain feeders. This method gives true representative sample.

3.	Simulator training must be repeated once in 6 months with new learning of fault simulation topics/situations.	110 MW units have become obsolete and no simulators are readily available. However, plant personnel are deputed regularly for trainings to update their technical knowledge.

Action taken by GNDTP, Bathinda on the Recommendations of CPRI on Auxiliary Power

1. Short Term Measures :

(A) Recommendations for which action has been taken:

Sr.No.	Recommendation	Action Taken
1	Cleaning of lube oil coolers of all HT equipments	It is already being done regularly.
2	Optimizing the FD fan discharge pressure	FD Fan discharge pressure is being maintained as per system requirement. Combustion optimization is being done. Monitoring of excess air through O_2 analyzers is done continuously. FD Fan discharge pressure will settle to suit the system requirement.
3	Bunker level measurement system for bunkers	Online bunker level measurement system is already available on unit-1 & 2.
4	Optimizing the mill coal fineness by adjusting and monitoring the classifiers at regular intervals.	Ball charging of the Coal Mills is done regularly to maintain their grinding capacity. Parameters of Coal Mill circuits are being maintained to the optimum values.
5	Cleaning of HT and LT panels at regular intervals	Cleaning of HT and LT panels is being done at regular intervals.
6	Check the end termination temperatures for all joints	Checking of the end termination temperature of all joints has been started with the help of IR Temperature gun.
7	Arresting air leakages and flue gas leakages in ducts	Leakages in APHs & ducts are being attended on available opportunity. Air leakage test is done during any available shut down to identify leakage points. Expansion joints leakages are also being attended. 8 no. damaged Joints of unit-2 have been replaced.

8	Plotting of auxiliary power variation with plant load be made available at control room for the operator to monitor the auxiliary power	Metering is available to compute auxiliary consumption daily. Current loading of all HT auxiliaries is available in control room.
9	Currents of individual equipment for different plant load may be made available in the control room	Currents of individual HT equipments are available in DCS in control room.
10	Transformer management of AHP TR transformers	Transformer management of AHP/ESP/IPH/CHP transformers has been started.
11	Regular cleaning of LT panel boards	Cleaning of LT Panel Boards has been started at regular intervals.
12	Optimizing the time for wagon tipplers	One no Vibratory Feeder has already been replaced with latest design electro-mechanical feeder which has improved tippling as choking at wagon tippler hoper has reduced. Another Vibratory Feeder shall be replaced on available opportunity. Old reclaim Vibratory Feeders shall also be replaced in a phased manner.
13	Strengthening and Improving the maintenance practices at CHP	Preventive maintenance is being carried out to avoid breakdowns. Maintenance practices followed by reputed plants like Dahanu are being adopted at GNDTP gradually.
14	Implementing fogging dust suppression system at all level from wagon tippling to bunkering	A portable fogging system has already been installed for spray in the CHP & coal pile area. Further, 8 no. online dust suppression systems at all transfer points of the conveyors have also been installed
15	Measuring the ash to water ratio on daily basis	Measurement is available.
16	Optimizing water to ash ratio	It is already being done at GNDTP. Further, Pneumatic valves for LP waterlines for isolation have been procured and shall be installed shortly to ensure use of minimum need based water quantity.
17	Transformer management	Transformer management of AHP/ESP/IPH/CHP transformers has been started.
18	Reducing the overloading of motors	Motors are running within the load limits. Preventive maintenance to reduce the overloading of motors is also being done.

19	Overhauling of inter-stage cooler heat exchanger	It is being done regularly.

Apart from above, following major works have been done to reduce auxiliary power consumption at the plant:-

1. During annual overhaul of unit 1&2 in FY 2012-13, rotating excitation system has been replaced with the Static Excitation system which has resulted in a saving of about 89KW of power.
2. Existing boiler feed pump 1A has been replaced with energy efficient, improved design 200KHI-S model pump. This pump has designed efficiency of 80% (at BEP) against 72 %(at BEP) of old pump. This has resulted in saving of about 200KW. In addition, Modified Gear Assembly on VOITH Hydraulic Couplings of BFP-1A was also installed which has resulted in saving of about 70KW. So total saving is about 270KW at full load.
3. Modified Gear Assembly on VOITH Hydraulic Coupling of BFP-2B has also been installed to reduce speed output. This has increased scoop tube position. Gain on account of reduced hydraulic losses is about 70KW at full load.
4. BFP-1B & 2A cartridge has been modified to 5 stage pump instead of originally 6 stage pump. This modification has resulted in a saving of about 2-3% on account of reduction in hydraulic losses in VOITH Hydraulic Coupling and 2-3% gain in efficiency of pump due to shifting of operating point near the BEP point. This modification has resulted in saving of more than 170 KW of power at full load on each pump. This modification is expected to be the first of its kind in the country.

(B) List of recommendation for which actions are being taken and are proposed to be taken:

1	Operating the CHP near to its full capacity	Study has been conducted by the OEM M/S Elecon for need based up gradation of the system. New Wagon Tippler with high capacity has not been recommended.However angle of conveyors and speed of drive is proposed to be increased for faster conveying of coal.

(D) The recommendations for which no action is required or Thermal power plant does not intend to take any action against the recommendations along with suitable reasons:

1	Calibration of RC feeder speed for coal flow in mills	Not applicable at GNDTP unit-1&2 being indirect firing system. Gravimetric Feeders have been installed on unit-3&4 to give feeder wise speed and coal consumption/feed rate.
2	On-line computation of flue gas flow	Portable static device is available to monitor flue gas flow as and when required. Optimum combustion is based on optimum Air Flow/Excess Oxygen for which sufficient online instrumentation is available for control.
3	Maintaining the coal – air temperature near to design value	Air leakages in the coal mill circuits have been plugged and insulation has been strengthened. Now, Flue gas temperatures at mill inlet are near design value.
4	Auxiliary power computation can be made on-line and Energy Management System	Present Metering System is adequate in the context of energy accounting/calculations.Still, concerned engineering officer of GNDTP was deputed to study EMS installed by M/s CMS Computers Ltd at Badarpur TPS. The system was not found up to the mark as some loops were not working satisfactorily. However, fresh requirement of 0.2 accuracy EEMs has been put up for replacement of 0.5 accuracy EEMs to ensure better energy accounting.

Action taken by GNDTP, Bathinda on the Recommendations of CPRI on Auxiliary Power

2. **Medium Term Measures**

(A) Recommendations for which action has been taken:

Sr. No.	Recommendation	Action Taken
1	Arresting air leakages in APH	Leakages in APHs are being attended on available opportunity.
2	Reducing the air leakages in duct.	Duct leakages are being attended on available opportunity. Air leakage test is done during any available shut down to identify leakage points. Expansion joints leakages are also being attended. 8 no. damaged Joints of unit-2 have been replaced.
3	Ammonia dosing in flue gas at ESP	SPM levels are being maintained within limits by taking care of ash evacuation and ESP mechanism. Dry Ammonia Dozing system has been installed on Unit #1&2.
4	Improving ID fan efficiency	ID fans are having speed control through hydraulic coupling for efficient operation.Voith coupling of ID Fan 1B has been replaced during COH in Feb-Mar'14
5	Improving the PA Fan efficiency by overhauling of fan & motors	During the annual overhaul of unit-1&2, PA Fans & Motors have been overhauled.
6	Improving the SEC of mills	Regular ball charging of coal mills is done to maintain their grinding capacity. Parameters of coal mill circuits are being maintained to the optimum values. Running hours of coal mills/LU of energy generated have reduced. During the AOH/COH of unit-1&2, Rim Gear of Coal Mill 1C & 2A, Journal Bearing of Coal Mill 1B and Liners of Coal Mill 1B, 2A & 2C have been changed. Also, old PILCA cables of all the three coal mill motors have been replaced with XLPE cables.

7	Improving efficiency of CW pumps	**1. Fluid glide coating of internals of CW Pumps1B, 1C , 2A & 2B has been got done. Gain in pump efficiency is about 5%. Activity shall be implemented on all CW pumps by 2015. 2. Bronze impellers of CW pumps are being replaced with SS impellers in phases. Impellers of 9 no. pumps (1A, 1B, 2A, 2B, 3A, 3B, 3C, 4A, 4B) have already been replaced. By the year 2015, all CW pumps impellers will be replaced with SS impellers.**

(B) List of recommendation for which actions are being taken and are proposed to be taken:

1	Modifying the reclamation conveyor path	Skirting at transfer points has been done to avoid coal spillage. Belt scrappers and Cushioning have been installed to reduce coal spillage from belts.
2	Improving efficiency of Intake water pumps	Two no. better efficiency pumps with SS impellers have been procured for intake pump house. 1 No. Pump has been installed and the other shall be installed during next overhaul of the units.

(C) Recommendations for which matter is under study:

1	Installation of motor controller for conveyor motors	Proposal for Renovation & Modernisation of Coal Handling Plant is under process. It includes replacement of Gear Boxes and Motors of Coal Conveyors for changing trough angle from 22^0 to 30^0.

Action taken by GNDTP, Bathinda on the Recommendations of CPRI on Auxiliary Power

3. Long Term Recommendations

(B) List of recommendations for which actions are being taken and are proposed to be taken:

Sr. No.	Recommendation	Action Taken
1	Installation of pressure and flow transducers to monitor the SEC for major auxiliaries	Individual pressure transducers are being installed in a phased manner on the Auxiliaries feeding to common headers to monitor their performance. The same have already been installed on CW Pumps 3A, 3B and 3 C.

Annexure-C

GENERATION AUX. &GT (MUs) SHANAN

MONTH	GEN.	AUX	%	GT	%
Apr-14	41.361	0.019	0.046	0.49	1.18
May-14	66.846	0.021	0.031	0.75	1.12
Jun-14	70.377	0.021	0.030	0.939	1.33
July-14	78.911	0.022	0.028	1.104	1.40
Aug-14	61.741	0.021	0.034	0.804	1.30
Sep-14	51.283	0.018	0.035	0.639	1.246
Total	**370.519**	**0.122**	**0.033**	**4.726**	**1.28**

Remarks/Action Plan

1. Auxiliary losses are within permissible limit
2. G.T. losses are higher due to installation of single phase T/Fs instead of 3 phase T/Fs & space constraint. These T/Fs are about 30 years old and have higher losses. These need overhauling for which action is being taken in a phased manner. Two new T/Fs are under procurement which will be energized on receipt thus sparing old T/Fs for their overhaul.

GENERATION AUX. &GT (MUs) UBDC

MONTH	GEN.	AUX	%	GT	%
Apr-14	25.926	0.079	0.30	0.096	0.37
May-14	31.277	0.071	0.23	0.092	0.29
Jun-14	41.713	0.080	0.19	0.128	0.31
July-14	51.989	0.113	0.22	0.173	0.33
Aug-14	59.938	0.099	0.16	0.207	0.35
Sep-14	37.138	0.086	0.230	0.127	0.34
Total	**247.981**	**0.528**	**0.213**	**0.823**	**0.33**

Auxiliary losses are within permissible limit.

GENERATION AUX. & GT (MUs) RSD

MONTH	GEN.	AUX	%	GT	%

Auxiliary losses are within permissible limit.

Apr-14	96.67	0.20	0.21	0.12	0.12	
May-14	166.87	0.32	0.19	0.23	0.14	
Jun-14	258.74	0.48	0.19	0.39	0.15	
July-14	347.84	0.65	0.19	0.51	0.15	
Aug-14	343.15	0.65	0.19	0.50	0.15	
Sep-14	177.40	0.33	0.186	0.26	0.146	
Total	**1390.670**	**2.63**	**0.189**	**2.01**	**0.14**	

GENERATION AUX. &GT (MUs) ASHP

MONTH	GEN.	AUX	%	GT	%	
Apr-14	15.62	0.024	0.15	0.074	0.47	Auxiliary losses are within permissible limit.
May-14	84.794	0.058	0.07	0.324	0.38	
Jun-14	86.424	0.058	0.067	0.278	0.322	
July-14	92.377	0.06	0.065	0.362	0.39	
Aug-14	87.064	0.059	0.068	0.362	0.42	
Sep-14	49.197	0.044	0.089	0.237	0.482	
Total	**415.476**	**0.303**	**0.073**	**1.64**	**0.39**	

GENERATION AUX. &GT (MUs) MHP

MONTH	**GEN.**	**AUX**	**%**	**GT**	**%**	**Remarks/Action Plan**
Apr-14	23.474	0.086	0.37	0.449	1.91	1. Auxiliary losses are within permissible limit. 2. Power generated in the generating unit is carried out to LV side of Generator Unit to step up Transformer through the 11 KV Aluminium cables (size- 500mm² at PH--1&2 and 800mm² at PH-3&4)
May-14	46.434	0.122	0.26	0.683	1.47	
Jun-14	112.744	0.209	0.19	1.478	1.31	
July-14	137.276	0.232	0.169	1.97	1.435	

Aug-14	90.134	0.20	0.22	1.448	1.61	for each Phase, i.e. Total 6 No. Aluminium cable have run load with length of the each cable 105 meter. The losses in these cables are also contributing to GT Losses. 3. G.T. losses are higher as the transformers installed at PH-1,PH-2,PH-3 &PH-4 of Mukerian Hydel Project are very old and commissioned during 1983,1988 & 1989. 4. Work for replacement of 132KV CT/PTs as per State Grid Code is in progress.
Sep-14	64.493	0.14	0.217	0.95	1.47	
Total	**474.555**	**0.989**	**0.208**	**6.978**	**1.47**	

ANNEXURE-'E'

Sr. No.	PSERC directives	Status of implementation
1.	To implement the various recommendations made in the CPRI report for fuel savings and cost reduction.	PSPCL Thermal Plants are in process of study/implementation of various recommendations made in fuel audit report and has already implemented most of the recommendations. The latest status as attached as Annexure-F.
2.	To take up with appropriate authorities (MOP & Coal India Limited) regarding inclusion of surface moisture in computation of GCV (which at present is being computed on equilibrated basis which considers only inherent moisture) at the sending end. Put efforts to get the payment for coal received from CIL made, on 'As Received' basis at its thermal plants.	The FSA with CIL subsidies have been signed for twenty years on a uniform pattern by all utilities in India including NTPC. The GCV is measured on equilibrated basis by all coal companies for payment purpose. PSPCL alone cannot change the system of measurement from GCV on equilibrated basis to GCV on receipt basis. However matter has already been taken up with Ministry of Coal and Ministry of Power by CE/Fuel, PSPCL Patiala.
3.	To adopt a uniform method of GCV measurement for receipted and bunkered coal by adding the effect of surface moisture to the GCV at the rate of 145 KCal/kg per 1% of moisture	PSPCL Thermal Plants has implemented the decision.
4.	To bring down the drop in GCV between the receipted coal and bunkered coal within 150 KCal/kg.	PSPCL has appealed in Appellate Tribunal against this directive vide Appeal No. 98 of 2013 The drop in GCV is within 150 kCal/kg for most of the months.
5.	PSPCL should explore third party validation of the washery energetic and may be got carried out once in a month.	GGSSTP, Ropar has been assigned to study and implement this directive. Necessary work order No. 231/D-182B dated 16.12.2013 upon M/s CIMFR, Dhanbad) has been issued and the same will be carried out after the Performance Guarantee test.
6.	To work out the monthly weighted average GCV of receipted coal (at the thermal plants) and bunkered coal and furnish the same quarterly and at the time of filing the ARR and Tariff Petition with the Commission.	PSPCL Thermal Plants has implemented the decision.
7.	PSPCL is directed to get the audit of its captive mine at	GHTP, Lehra Mohabbat is in process of implementing this directive. Work

	Pachhwara managed by PANEM carried out through a joint audit group of Fuel Research Institute Dhanbad and CAG to ascertain the quantum of coal extracted and coal supplied to PSPCL TPSs till date & continue the mine audit annually and submit report to Commission.	order No. 2/FM-38 dated 05.09.2013 has been placed upon M/s CIMFR, Dhanbad for carrying out the audit of Pachwara (Central) captive mine by GHTP. The firm has carried out the audit work of the mine. The report of the same is being finalized by the firm.

Annexure-'F'

S .No	Recommendations	Remarks
Coal-Overall process.		
1.	For the process of sampling, recording of quantity, determination of fuel quality (GCV) a committee may be formed composed of senior level officers at the level of SE from Operations, Maintenance, Efficiency and Fuel along with Chief Chemists who will supervise, perform random quality checks and monitor the entire process of receipt and reporting of coal quality and quantity received and consumed in the TPS.	A panel of ASEs / Sr. Xens, Chief Chemist / Dy. Chief/ Sr. Chemist (*not of SEs*) has been framed for performing random quality checks of received & bunkered coal and monitor the process of sampling & analysis. The necessary checks are being performed by the Committee. The entire process of receipt and reporting of coal quantity received and consumed is being looked after by an independent Fuel Management Cell.
Coal-Recording (Quantity)		
2.	The data file composed of gross weight, wagon Nos. and tare weight may be made portable to the Fuel Section and Accounts for archiving of the online data.	**GGSSTP** 1 no. in-motion weigh bridge is installed at GGSSTP and has been upgraded for online data transfer. At present on-line data is being transferred from in-motion weigh bridge to EN'RGISE module (M/S TCS) in the existing format. The modifications in the software are required to generate the format automatically as per TCS requirement. Necessary W.O. has been placed upon OEM for required modifications in the software which is being executed shortly. **GHTP** There are two No. in-motion weighbridges installed at GHTP. The software in respect of both the weighbridges has been upgraded to fetch soft copy of recorded data to fuel and accounts cells. For online transfer of data from weighbridges to fuel section and accounts wing an optical fibre cable from weighbridges to the server room of the computer network has been laid. However the interfacing between computer of in-motion Weighbridge and server of computer network of the Plant is pending. **GNDTP**

		There are 2 No. in-motion weigh bridges installed at GNDTP. The software in respect of both the weigh bridges has been upgraded to fetch all data recorded online to other offices. Now, all data available on the computers is being provided in soft copy to Fuel Cell. For the online transfer of data from weighbridges to Fuel section and Accounts wing optical fibre cable has already been laid. However, the online transfer of data can be done when the software at the weigh bridges & the TCS Server are integrated.
Fuel oil-Recording (Quantity)		
3.	It is recommended that in GNDTP also, the wagon dip level measurement may be taken as the primary measurement for recording receipt quantity.	At GNDTP, presently LDO is being received through road mode through truck tankers and dip is being taken of the truck tanker as well as the storage tanks to ensure correct receipt. In case of rail rakes, the dip of storage tanks is taken before and after unloading to give the measurement of oil and the dips of the individual tank wagons is also being checked.
Coal Sampling		
4.	**Sampling**: The sampling of both receipt coal as well as bunkered coal at any time of the day must be witnessed by an officer level person since the sample determines the basis for determining station heat rate and indirectly relates the quantity of consumption. Periodic surprise checks by committee members are essential. The random table details of which wagon to take the sample must only be told to the personnel at the last minute by the Committee members.	Sampling of coal rakes received at PSPCL Plants is being done randomly in presence of officers of the committee. It is not possible to depute one officer always for checking the sampling of bunkered coal as the same is collected after every 2 hours (every 20 minutes for GHTP) during the running of Coal conveyer belts at each unit round the clock. However the sampling of bunkered coal is being done in the presence of Senior Chemist. Instructions regarding not to divulge the random table details before hand are already being complied with.
5.	**Sampling improvement**: Receipt coal sampling must be only through automatic samplers under the supervision of chemists. Chemists must witness the taking of the samples. Automatic samples can go deep inside the wagon whereas manual sampling has a tendency to sample only on the under surface of the heap.	**GNDTP** A committee of engineers and officers of chemical wing from all PSPCL thermal plants have done preliminary study for operation and other aspects of Automatic Coal Sample Collection (Auger) Machines in all Power plants and has submitted a report after visiting and getting feedback from the plants where such machines are in operation. At the first instance, one machine is under procurement (PO has been placed) by GHTP Lehra Mohabbat for trial run for all PSPCL Thermal

		Plants. However, a committee comprising of 7 No. officers (4 No. ASE's/Sr.Xen's and 3 No. officers from Chemical Deptt.) has already been formed for performing random quality checks of received & bunkered coal and monitoring the process of sampling & analysis. **GGSSTP** There is no automatic sampler available at GGSSTP. Further, there is no provision of sampling PANEM coal beyond 0.5mt depth in the wagons selected for sampling. **GHTP** The study on the use of automatic sampler/ Auger sampler is being done by CHP, GHTP Lehra Mohabbat. Procurement process is under progress. Purchase Order No. 829/ O&M/PC-1608 dated 10-07-2014 has been placed for procurement of Auger machine.
6.	**Bulk density determination**: During reduction process of coal samples coal density (by standard pot's weight and volume method) should be measured so that general record of coal density for particular coal colliery is available.	PSPCL Plants have started measuring coal density.
	Coal consumption calculation & verification of stocks	
7.	Coal stock verification and reconciliation may be done once a month.	Physical verification and reconciliation of stock is being done by Technical Audit, wing of PSPCL, Patiala at the end of each quarter. Monthly coal consumption is revised for each month of the quarter based on coal stock found short/excess (as the case may be) after receipt of final coal stock report by technical audit wing of PSPCL. All the plants are carrying out in house coal stock at the end of each month.
8.	The coal stock verification must be in the presence of the committee of senior level officers as indicated in section 2.1.1.	The coal stock verification is already being carried out by the Tech Audit, PSPCL, Patiala who is assisted by ASEs/Sr.Xens/CHP (Op.), Civil Mtc. & Fuel Cell.
9.	**Belt weighers**: Belt weighers may be installed for all	**GGSSTP**

	conveyors feeding to all units before entrance to the bunkers so that unit wise coal consumption can be arrived at. The unit wise coal consumption through belt weighers is present only in GHTP. The same may be installed in all units of GGSSTP & GNDTP. Belt weighers have emerged as a reliable and cost effective method of coal measurement. The signals from the belt weighers give coal flow in t/h and total flow and are of the re-setting type. The coal flow from the coal yard to the units (total composite flow) can be measured through these conveyors. In addition to the total flow to the units from the belt weighers, the unit wise consumption is required to be monitored to provide the unit wise performance. Microprocessor based interfaces for belt weighers needs to be installed or multiple time totalizers.	Belt Weighers are already installed at GGSSTP and are operative. Belt weighers are installed on conveyors feeding to all units before entrance to bunkers. From these conveyors coal is fed to and stored in the coal mill bunkers of each unit. Reading of belt weighers alone cannot give unit wise consumptions as the coal is stored and fed from the bunkers to the mills. Presently, there is no accurate bunker level measurement available at GGSSTP. Moreover, at GGSSTP, only 2 streams are provided from CHP which feed all the six units, the provision of multiple time totalizers may give frequent interruptions. Gravimetric feeders for the measurement of coal to each mill have been installed in 1 unit and after their successful performance; the same shall be installed in other units. Also, regarding installation of bunker level measurement system, feasibility of installation at site and technical specifications are being re-examined and will be implemented accordingly. **GHTP** Belt weighers have already been installed at GHTP and are functional. Installation of microprocessor based interfaces for belt weighers is under study. **GNDTP** Microprocessor based Belt Weighers are already installed at GNDTP. Belt weigher readings based on the trolley movement in order to calculate the coal fed to the individual units are being recorded in the CHP cell. Gravimetric feeders have been installed on Unit-3 &4 under R&M to give unit wise coal consumption.
	Coal-Reporting (quantity)	
10.	The reporting of the reconciled consumption of coal must be on a monthly basis. Once the monthly stock and consumption is reconciled and arrived at it must be final and there must be no further reconciliation on a quarterly, bi-annually or yearly basis.	Coal is reconciled and figures are freezed on monthly basis after receipt of final report by technical audit wing of PSPCL at end of each quarter. No further changes are done in already freezed values.

	Fuel oil Reporting (quantity)	
11.	The reporting of the reconciled consumption of fuel oil must be on a monthly basis.	Agreed, the figures are reconciled on monthly basis. The figures always match with Quarterly measurements, being done jointly with Tech Audit.
12.	Omitted.	
	Significance of the heating value of coal & oil	
13.	The drop in GCV between the receipt coal and bunkered coal may be brought down to within 150 kcal/kg.	This recommendation has been challenged by PSPCL in the Appellate Tribunal. However, the drop in GCV between the receipt coal and the bunkered coal is decreasing.
14.	First-in-first out principle must be adopted for receipt coals to ensure that certain lots do not weather for too long.	First in first out principle for receipt coal is already being implemented as far as possible.
15.	The joint sampling provision in the FSA with CIL and other collieries must be strictly implemented.	The Contract of M/s K.C. Sharma & Co., Gandhidham for rail mode supplies and M/s Superintendence Company of India Limited, Kolkata for road mode coal supplies, on behalf of PSPCL has expired on 31.03.14. New Tender specifications to witness the sampling and analysis at loading end are being processed by the CE/GNDTP-Bathinda. Further, from 01.04.14 the work of 3rd party sampling & analysis at the loading end for coal through Rail mode and Road mode (except CCL through wahery mode) is being witnessed by the PSPCL employees from time to time.
16.	Introduction of additional fogging systems at various locations in the coal yard as well as at the junction towers to avoid spontaneous fires in coal stacks.	**GGSSTP** Utmost care is being taken to avoid any hot spots in coal yard. The feasibility & technical suitability of fogging system is being explored. Additionally, a Truck Mounted Dust Suppression System has also been into service to control the dust in the coal yard and the other area of coal handling plant and to avoid hot spots. **GHTP** Utmost care is being taken to avoid any hot spots in coal stock. Coal hydrant system is already in place to avoid incidents of fire. **GNDTP** A portable fogging system has already been installed for spray in the CHP & coal pile area. Further, 8 no. online dust suppression systems at all transfer points of

		the conveyors have also been installed.
17.	Use coal compactors for compaction of the coal heaps to avoid spontaneous combustion and also to eliminate seepage of water and loss of heating value of the coal.	Presently compaction is being done with the Bull-Dozers. Agenda for procurement of 3 No. coal compactors has been approved by BODs and E-Press tender enquiry has been floated.
	Coal-Method of testing fuel quality at site	
18.	A uniform method of coal measurement may be adopted for receipt and bunkered coal through GCV at equilibrated conditions in a bomb calorimeter and adding the effect of surface moisture to the GCV at the rate of 145 Kcal/kg per 1%.	Thermal Plants has implemented the decision.
19.	The consideration of effect of surface moisture on GCV for Coal purchase from Collieries may be taken up at the appropriate forum.	**The FSA with CIL subsidies have been signed for twenty years on a uniform pattern by all utilities in India including NTPC. The GCV is measured on equilibrated basis by all coal companies for payment purpose. PSPCL alone cannot change the system of measurement from GCV on equilibrated basis to GCV on receipt basis. However matter has already been taken up with Ministry of Coal and Ministry of Power by CE/Fuel, PSPCL Patiala.**
20.	Periodic surprise checks of witness the GCV determination for both receipt coal as well as bunkered coal in a bomb calorimeter by committee members is essential.	Reply as per Sr. No. 1. The bunkered coal GCV is calculated in presence of officers posted in chemical plant.
21.	Random samples of both receipt coal as well as bunkered coal or a certain percentage of samples (5 to 10 %) as well as third party testing samples may be sent to independent, impartial truly third partly central laboratories whose result must be final, such as the following: • Central Institute of Mining & Fuel Research (CIMFR) (Formerly CFRI), Nagpur. • Central Institute of Mining & Fuel Research (CIMFR) (Formerly CFRI), Dhanbad.	In case of receipt coal, samples can be tested from independent labs only in case of challenge from either party as per FSA. However, committees have been constituted at Plant level for checking the quality of rakes randomly. Most of the laboratories suggested by CPRI have already been covered for testing of referee sample with M/s PANEM. As far as bunkered coal is concerned, GCV is being tested by automatic bomb calorimeter of M/s Parr USA which is amongst the most accurate calorimeter available in the market, so there is no need to check the GCV in independent laboratories.

	• CPRI, Bangalore.	
22.	It is recommended to go for additional set of sample primary and secondary crushing equipment including pulverisers.	**GGSSTP** is already having 2 set of such equipments and both are in working condition. 2 No. New Grinders have been installed and are working satisfactorily. P.O. has been issued for procurement of 4 No. Jaw crushers. Supply awaited. **GHTP & GNDTP :** The additional set of sample crushers and grinders has already been installed at plants.
23.	Presently, the three stations are having only bomb calorimeter. Usually, in many other utilities there are separate bomb calorimeters for Stage 1 & Stage 2. One additional automatic multi-sample bomb calorimeter is recommended for each station along with room air conditioners for maintaining the temperature control of the cooling water.	Case is being processed by GHTP Lehra Mohabbat for all the three thermal plants. Purchase order No.836/O&M/PC-1496 dated 1.8.2014 has been placed upon M/s Orbit Technologies Pvt. Ltd. Hyderabad for procurement of additional one No. bomb calorimeter.
	Basis for working out station heat rate (SHR)	
24.	The receipt coal GCV which is the basis for payments must also be a part of returns filed to Regulatory Commission. The computation of SHR can still be on the basis of bunkered coal GCV but this value must not deviate beyond 150 kcal/kg from the receipt coal GCV value.	PSPCL has appealed in Appellate Tribunal against the directive of drop in GCV, however, any data can be submited as per requirement of Commission.
25.	The computation of SHR must be on daily basis and the monthly value must be based on daily average. The annual value must be based on monthly average. The reporting period for SHR must be monthly.	**GGSSTP** Not possible, as coal consumption is taken on monthly basis. Unit wise coal consumption data is not available, however Gravimetric feeders for measurement of coal to each mill have been installed in 1 unit and after their successful performance; the same shall be installed in other units. **GHTP & GNDTP :** As Calorific value and specific coal consumptions are calculated on daily basis so SHR w.r.t coal energy is already available on daily basis at GHTP. Oil

		consumption is calculated and finalized at end of each month with dip stick, so SHR is calculated and reported on monthly basis.
	Fuel cost- PAYMENTS ASSOCIATED WITH FUEL RELATED COSTS, REASONS FOR HIGH LOSS	
26.	An independent third party validation of the washery energetics to map the yield as a function of the input raw coal quality and washed coal quality is required.	**GGSSTP, Ropar is in process of implementing this directive. Necessary work order has been issued and the same will be carried out after the Performance Guarantee test. As per point No. 5 of Annex-A.**
27.	The coal cost (landed price of coal at the (TPS) can be evaluated in three formats: Rs./t = (coal cost + freight)/receipt weight Rs./kWh = (coal cost + freight)/energy generated Rs./GCal = (coal cost + freight)/(receipt weight x GCV of receipt coal) converted in GCal to have it in comparable no. values.	Agreed, the coal costs can be evaluated in all the three given formats.
	Transit loss (TL)	
28.	Considering the above facts it is recommended to reduce TL to CERC norms of 0.8 % for CIL & Washed coal. In the case of washed coal it may be ensured that washed coal is brought to equilibrium with respect to moisture.	CERC norm of 0.8% transit loss cannot be made applicable at PSPCL power plants as these are at the farthest end from coal mines as compared to Central Govt. power stations. PSERC, in its recent Tariff Order for FY 2013-14 has allowed transit loss as per actual, subject to maximum of 1%.
	Demurrages	
29.	It was noticed that in all the three TPS wagon positioning equipment (inhaul-outhaul beetle chargers or side arm chargers) are either not present or not in working condition and the shunter is used for the same. Either these may be repaired or side arm chargers may be installed for all wagon tipplers.	**GGSSTP** There is no space for side arm chargers at GGSSTP; however Beetle chargers are in working condition, which are quite fault prone and also increases the unloading period. Therefore, no further improvement is possible is existing system. Matter was taken up with M/s Elecon to explore the feasibility for installing side arm chargers on Wagon Tippler No. 4 & 5.The firm has submitted the report which was studied and found to be not feasible techno-economically. So,

		Beetle chargers of Wagon Tippler No. 4 &5 are being revived. **GHTP** Side arm charger of Wagon Tippler A & B are now functional. No beetle charger or side arm charger exist at wagon tipplers of GHTP Stage-II units. However for procurement of the same for GHTP Stage-II, feasibility study is being conducted by M/s Elecon. **GNDTP** The OEM firm M/s ELECON after visiting the site at GNDTP Bathinda for proposing augmentation of CHP had submitted their proposal and budgetary offer. The proposal was discussed and dropped due to its very high cost of Rs 4.61cr for each charger (excluding erection commissioning, civil and electrical works). Also, feedback received from other plants is not positive as most of the Beetel Chargers installed earlier are inoperative. Beetel Charger installed originally at GNDTP is also inoperative and lying abandoned since long. ASE/CHP visited GTPS Gandhinagar in July, 12 to study CHP. Even there, only outhaul Beetel Charger is operative.
30.	Earlier wagon tippler systems were designed for 500 & 1000 t/h to empty a rake in 3 h. Present day systems are available in 1600 t/h for faster disposal. The detailed study of wagon tippling systems and coal conveying may be studied for removal of existing bottlenecks and for up-gradation wherever it is critical.	**GGSSTP & GHTP:** To upgrade the existing system, complete CHP has to be renovated after dismantling the same, which is not possible as the units have to be stopped for quite a long period. The only possible solution for faster unloading lies in regulated supply (without bunching) from railways, for the supply of coal free from boulders and stones. **GNDTP:** Study has been conducted by the OEM M/S Elecon for need based up gradation of the system. New Wagon Tippler with high capacity has not been recommended. The work to increase the angle of conveyors and speed of drive for faster conveying of coal is under process departmentally.
31.	Detailed study and up-gradation of coal conveying system	One no Vibratory Feeder has already been replaced with latest design electro-

	especially at GNDTP which is using vibratory feeders.	mechanical feeder and another Vibratory Feeder shall be replaced on available opportunity. Old reclaim Vibratory Feeders are also proposed to be replaced in a phased manner.
32.	**Rail tracking system** through GPS or alternative technologies.	**GGSSTP** Information regarding Loads On Run is already available on daily basis through M/s KCT Delhi. Moreover, matter is being taken up with Indian Railways for providing terminal to access the information through their Freight Operations Information System. **GHTP** Matter has been taken up with Railways for installation of Rail Tracking System (FOIS). **GNDTP** It requires installation of tracking system on all the rakes. The rakes for PSPCL are not fixed and therefore cannot be identified.
33.	**Grab cranes** for removal of stones from the wagon tippler area is present in Ropar. The same may be installed in GNDTP & GHTP.	Already installed at GGSSTP. **GHTP** Grabber and loader machine already exist and functional at GHTP. One more grabber and loader machine has also been procured and working at GHTP. **GNDTP** Installation of Grab crane is not possible in view of the space constraints and obsolete design of Wagon Tippler Hopper. Removal of stones before entry into the wagon tippler area is also not feasible as the 7 hrs free time allowed by the railway for unloading is very less and at GNDTP the rakes are being unloaded with best possible efforts on wagon tippler, Poclain and Manual Unloading Hopper to avoid demurrage. Picking of stones before entry to Wagon Tippler area is not possible

34.	**Rotary pneumatic or electrical hammers** may be used for crushing coal lumps at the wagon tippler in place of manual hammering.	**GGSSTP** Already 2 No. Grabber machines and Electric wire rope hoist crane are available for picking stones from wagon tippler grizzly so rotary pneumatic or electrical hammers are not required. Moreover, it is not feasible to use these at wagon tippler area. **GHTP** Since grabber and loader machine is used to pick coal lumps away from coal grating efficiently where these are manually crushed, so any rotary pneumatic or electrical hammers are not required. **GNDTP** Due to space constraints at existing Wagon Tippler Hopper, proposal to install Rotary pneumatic or electrical hammers is not feasible.
	Penal overloading charges(POL)	
35.	Since loading is in the scope of Monnet, POL may be brought into the scope of Monnet.	The contract agreement dated 14.08.2002 was signed between PSEB (now PSPCL) and M/s Monnet Daniels after following competitive bidding route and as per the provision in the contract agreement. POL charges are to borne in the ratio 50:50 by PSPCL and M/s Monnet. The provisions contained in the contract agreement are binding for both the parties.
	Costs associated with stones and non-fuel foreign materials in coal.	
36.	Frequent visits and inspections at the colliery loading end is essential to minimize the receipt of stones	Matter is regularly taken up with the CIL to stop dispatching the coal having stones mixed with it. Also loading of good quality coal at loading end is being supervised by our coal liaison agent M/s KCT & Bros.
37.	Random sampling of rakes from washeries and captive mines in the presence of CIL officials may be undertaken to sort out the issue with CIL and convince them that stones are from CIL.	As per FSA signed with various CIL subsidiaries, stones are to be distributed proportionate to the supplies from various sources of coal. However, efforts will be made in this regard to sort out the issue.
38.	The joint witness of weighment and quality determination at the sending end must be fully utilized for ensuring that	Quantity of each rake is strictly supervised by M/s KCT whereas the contract for quality (witness of sampling and analysis at loading end) placed upon M/s

	quality and quantity are in order.	K.C. Sharma & Co., Gandhidham for rail mode supplies and M/s Superintendence Company of India Limited, Kolkata for road mode coal supplies, on behalf of PSPCL has expired on 31.03.14. New Tender specifications to witness the sampling and analysis at loading end are being processed by the CE/GNDTP-Bathinda. Further, from 01.04.14 the work of 3rd party sampling & analysis at the loading end for coal through Rail mode and Road mode (except CCL through wahery mode) is being witnessed by the PSPCL employees from time to time.
39.	The FSA has provisions for consideration of the total moisture in the quality. The issue may be taken up with appropriate authorities for consideration of the coal GCV on the basis of inherent moisture plus the surface moisture in the coal loaded at the sending end. In other words the inherent moisture effect of 145 kcal/kg for 1% may be added to the presently determined GCV based on equilibrated moisture.	**The GCV is measured on equilibrated basis by all coal companies for payment purpose. PSPCL alone cannot change the system of measurement from GCV on equilibrated basis to GCV on receipt basis. However Matter is being taken up with Ministry of Coal and Ministry of Power by CE/Fuel, PSPCL Patiala.**
	FSA with captive mines (Panem)-STUDY OF FUEL SUPPLY AGREEMENTS (FSAs)	
40.	One of the major factors involved in the payment to Panem is the testing of coal samples at the TPS. Hence, extra care must be exercised in sampling and measurement of receipt coal quality as it seriously impacts the fuel price.	Each & every rake of PANEM is already being tested. Further, a committee has already been framed as mentioned at Sr. No. 1 in the table, for this purpose.
41.	The FSA with captive mines has provisions for consideration of the total moisture in the quality. The issue may be taken up with appropriate authorities for consideration of the coal GCV on the basis of inherent moisture plus the surface moisture in the coal loaded at the sending end. In other words the inherent moisture effect of 145kcal/kg for 1% may be added to the presently determined GCV based on equilibrated moisture.	FSA with PANEM (Captive coal mine) has no provisions for consideration of total moisture in the quality of coal with regards to calculation of GCV.

42.	Since washed coal loading is entirely in the control of Monnet, the POL must be the in the account of the washery. This clause is recommended to be reviewed and reverted to include the POL into the scope of the washery.	Same as at Sr. No.35 above.
	Analysis of details of FSA:	
43.	GCV of both receipt and washed coal is to be determined, documented and reported for each and every rake of coal input and output of washery.	Joint Sampling of the Raw coal is being carried out by the washery Operator i.e. by M/S Monnet & M/S CCL. GCV of each and every rake received at plant is determined and documented.
44.	Keeping in mind the that the density differences between coal, mineral matter and ash are low, the **process yield for various input coals must be got validated by an independent third party** agency such as CPRI or CFRI, etc.	Same as at Sr. No.26 above.
45.	The process energy efficiency map along with economics for various input coal GCVs and washed coal GCVs must be got validated by an independent third party agency such as CPRI or CFRI, etc.	Same as at Sr. No.26 above.
46.	The telemetering system for on-line information of the in-motion weighbridge readings of receipt coal received and beneficiated coal loaded at PSPCL TPS is essential and must be implemented at the earliest to provide authentic tamper proof data on transit loss and total weighments of both receipt coal and washed coal dispatched at the Washery.	As per clause 6.6.5 of the contract agreement, after implementation of telemetering, the weighment and quality of washed coal of loading end shall become final. Since, M/s Monnet has not yet commissioned the telemetering, so the weightment of washed coal at the plant end is final. As per PSPCL's view point, after telemetering is commissioned, the provisions of becoming loading end results for quality and quantity of washed coal as final, shall be detrimental to PSPCL. Further M/s Monnet has pointed out that telemetering could not be commissioned by them due to jamming of signals by Govt. agencies as N.K. area is prone to Maoist / Naxalite.
47.	POL at the loading site of washed coal may be brought fully into the scope of Monnet which is presently shared 50:50 by Monnet and PSPCL.	Same as at Sr. No.35 above.

48.	The coal loaded into the rakes must have equilibrium moisture. This is to ensure that TL does not occur due to non-equilibrium moisture in coal evaporating and coal coming back to equilibrium moisture. Moisture related TL must be in the scope of the washery.	Coal lost due to increase in moisture is being booked to the firm as per contract agreement with the firm.
49.	The cost benefits of the washery process which is higher by almost 22-28 % to coal from other sources may be reviewed. Apart from the clauses on quantity of washed coal delivered, the quality process may be reviewed. The coal lifted by the washery must be specified in terms of GCV, ash and moisture. The sampling frequency of the coal must be on the basis of similar to rake sampling, i.e., around 350 kg per 4000-4500 tonnes, i.e., 80 ppm (parts per million).	Same as Sr. No. 26 above.
50.	The transit loss may be fully included in the scope of the liasioning agent. The payments to the Liaison agent must be linked with the actual coal cost (landed price: coal +freight), (i.e., Rs. 30/t x coal weight for the rake) for every 1 % TL.	The same may be reviewed in next agreements. **GHTP** While finalising tender specifications for appointment of Coal Liaison Agent, deliberations were held by the committee constituted for the same on this directive of PSERC. The committee observed that PSPCL plants are situated at the farthest distance from mines and some transit loss shall always occur. With the provision of this clause, the bidders will quote higher rates or may not come forward for this work which may cause more complications for arranging coal and shall worsen the coal stock position. Therefore it was decided by the committee not to incorporate this clause in the tender.

ANNEXURE 1: AVAILABILITY OF POWER

For FY 2015-16

Table 1: Summary of units scheduled during FY 2015-16

Particulars	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Total (Net)
Total energy available for surrender	2742	2778	2857	2875	2828	2862	3022	2803	2894	2793	2577	2801	33832
Total energy left after surrender	871	676	1577	2115	2434	1899	2009	1702	1424	1495	1340	1028	18569
Total Energy to be surrendered	1870	2102	1280	760	394	964	1013	1101	1470	1298	1238	1772	15266
Net availability at Punjab Periphery (PSPCL)	4739	5534	6543	7243	7019	6367	5587	4827	4966	4652	4481	4980	66937
Requirement	**2869**	**3432**	**5263**	**6483**	**6625**	**5403**	**4574**	**3726**	**3496**	**3354**	**3243**	**3208**	**51676**
Surplus(+)	1870	2102	1280	760	394	964	1013	1101	1470	1298	1238	1772	15262
Deficit(-)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2: Details of units scheduled during FY 2015-16

Sr. No.	Source	Gross Purchase	Net Purchase	VC (Pc/Unit)	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Total (Net)	Total (Gross)
		MU	MU	MU	MU	MU	MU	MU	MU	MU	MU	MU	MU	MU	MU	MU	MU	MU
					Month-wise Net Units to be Scheduled													
1	Auraiya (R)	5	5	1214.12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Dadri (R)	6	6	1194.38	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Auraiya (L)	0	0	1090.22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Anta (R)	1	1	987.84	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Anta (L)	0	0	855.96	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Dadri (L)	0	0	832.44	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Jhajjar(JV)	184	179	419.06	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	DADRI-II TPS	129	125	360.99	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Auraiya (G)	157	152	332.22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Farakha (ER)	142	137	331.38	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Dadri (G)	390	378	326.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Pragati-III(Bawana)PPCL	510	494	323.37	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Kahal gaon - I(ER)	297	288	282.14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Anta (G)	235	227	273.63	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Kahal gaon-II (ER)	730	707	266.39	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Unchachar-I	258	250	262.61	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Rajpura TPS (2x700 = 1400 MW)	9829	9829	260.36	0	0	0	353	730	106	98	0	0	0	0	0	1287	1287
18	Unchahar-III	160	155	256.52	0	0	0	19	18	11	13	0	0	0	0	0	61	63
19	Unchahar-II	489	474	255.99	0	0	0	54	49	36	43	15	0	0	0	0	197	203
20	Goindwal sahib (2 X 270 MW = 540 MW)	1798	1798	253.00	0	0	2	97	97	187	193	187	0	0	0	0	763	763
21	DVC -Durgapur	990	959	244.65	0	0	89	90	51	105	126	114	0	12	0	0	587	605
22	Talwandi Sabo TPS (3x660 = 1980MW)	8388	8388	222.40	87	0	689	712	712	689	712	689	607	712	604	286	6502	6502
23	Rihand - III	434	421	177.24	35	0	35	36	36	35	36	35	36	36	32	36	385	397
24	Rihand - II	768	744	175.35	70	0	54	66	80	41	52	59	68	60	60	69	680	701

Sr. No.	Source	Gross Purchase	Net Purchase	VC (Pc/Unit)	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Total (Net)	Total (Gross)
25	Rihand - I	802	778	168.21	69	61	76	70	51	73	64	61	67	60	59	61	772	796
26	MUNDRA_UMPP	2817	2731	153.00	232	236	247	223	226	224	260	152	250	227	232	221	2731	2817
27	Singrauli	1621	1571	131.57	129	122	135	137	125	143	153	140	139	130	119	98	1571	1621
28	Sasan Ultra Mega TPS 3960 MW (6 Unit)	3130	3034	115.00	249	258	249	258	258	249	258	249	258	258	233	258	3034	3130
	Total	**34270**	**33832**														**18569**	**18887**

For FY 2014-15 (H2)

Table 1: Summary of units scheduled during FY 2014-15 (H2)

Particulars	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Total (Net)
Total energy available for surrender	2068	1969	2166	2249	2085	2439	12976
Total energy left after surrender	1413	1294	1167	1057	1035	772	6739
Total Energy to be surrendered	655	675	999	1191	1050	1666	6236
Net availability at Punjab Periphery (PSPCL)	4637	3919	4054	4126	3891	4480	25107
Requirement	3982	3244	3055	2935	2841	2814	18871
Surplus(+)	655	675	999	1191	1050	1666	6236
Deficit(-)	0	0	0	0	0	0	0

Table 2: Details of units scheduled during FY 2014-15 (H2)

Sr. No.	Source	Gross Purchase	Net Purchase	VC (Pe/Unit)	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Total (Net)	Total (Gross)
		MU	MU	MU	MU	MU	MU	MU	MU	MU	MU	MU
					Month-wise Net Units to be Scheduled							
1	Auraiya (R)	0	0	1156.30	0	0	0	0	0	0	0	0
2	Dadri (R)	0	0	1137.50	0	0	0	0	0	0	0	0
3	Auraiya (L)	0	0	1038.30	0	0	0	0	0	0	0	0
4	Anta (R)	0	0	940.80	0	0	0	0	0	0	0	0
5	Anta (L)	0	0	815.20	0	0	0	0	0	0	0	0
6	Dadri (L)	0	0	792.80	0	0	0	0	0	0	0	0
7	Jhajjar(JV)	43	41	399.10	0	0	0	0	0	0	0	0
8	DADRI-II TPS	18	17	343.80	0	0	0	0	0	0	0	0
9	Auraiya (G)	69	67	316.40	0	0	0	0	0	0	0	0
10	Farakha (ER)	72	70	315.60	0	0	0	0	0	0	0	0
11	Dadri (G)	205	198	310.50	0	0	0	0	0	0	0	0
12	Pragati-III(Bawana)PPCL	254	245	307.97	0	0	0	0	0	0	0	0
13	Kahal gaon -I(ER)	144	139	268.70	0	0	0	0	0	0	0	0
14	Anta (G)	116	112	260.60	0	0	0	0	0	0	0	0
15	Kahal gaon-II (ER)	381	367	253.70	0	0	0	0	0	0	0	0
16	Unchachar-I	106	102	250.10	0	0	0	0	0	0	0	0
17	Rajpura TPS (2x700 = 1400 MW)	4901	4901	247.96	455	391	60	0	0	0	906	906
18	Unchahar-III	62	60	244.30	13	11	10	0	0	0	34	35
19	Unchahar-II	218	210	243.80	43	38	35	0	0	0	116	120
20	DVC -Durgapur	466	450	233.00	125	114	66	0	0	0	305	316
21	Talwandi Sabo TPS (3x660 = 1980MW)	1514	1514	211.81	0	88	183	290	303	33	897	897
22	MUNDRA UMPP	1385	1337	193.82	259	151	249	226	231	220	1337	1385
23	Rihand – III	217	209	168.80	36	34	36	36	32	36	209	217
24	Rihand – II	380	367	167.00	52	59	68	60	59	68	367	380
25	Rihand – I	384	370	160.20	64	61	66	60	59	61	370	384
26	Singrauli	804	776	125.30	153	140	138	129	119	98	776	804
27	Sasan Ultra Mega TPS 3960 MW (6 Unit)	1474	1422	57.66	214	207	257	257	232	257	1422	1474
	Total	**13212**	**12976**								**6739**	**6917**

DETAILED FORMATS

PUNJAB STATE POWER CORPORATION LIMITED

PUNJAB STATE POWER CORPORATION LIMITED

ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16

ENERGY SALES YEAR 2012-13 (Actual)

Format 1

Sr. No.	Category of Consumer	No. of Consumers at the End of the Year (No.)	Connected Load at the End of the Year (KW)	Maximum Demand (MW)		Energy Sale / Demand (MUs)
				Restricted	Unrestricted	
1	2	3	4	5	6	7
1	Domestic	5642850	10138941			9503.86
2	Commercial (NRS)	923854	3130411			2790.29
3	Industrial					
(a)	*Small Supply*	90372	982064			903.10
(b)	*Medium Supply*	26361	1608848			1833.66
(c)	*Large Supply*	6697	5348994			9562.94
(d)	*Total*	*123430*	7939906			12299.70
4	Street Lighting	3015	46963			148.28
5	Bulk Supply					
(a)	*HT*					
(b)	*LT*					
(c)	*Total*	508	291426			570.27
6	Railway Traction	9	72923			134.85
7	**Total Metered Sales (except AP) within State**					**25447.25**
8	AP Consumption					
(a)	*Metered*	12552	87489			
(b)	*Un-metered*	1178855	8028918			
(c)	*Total*	1191407	8116407			10794.27
9	**Total Sale Within State (7+8)**	**7885073**	29736977			36241.52
10	Sales Outside State					99.39
11	Sales to Common Pool Consumers					309.00
12	Sales to Electricity Traders					
13	Sales to Other Distribution Licensees					
14	**Total Sales**					36649.91

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
ENERGY SALES YEAR 2013-14 (Prov.)

Format 1A

Sr. No.	Category of Consumer	No. of Consumers at	Connected Load at the End of the Year (KW)	Maximum Demand (MW)		Energy Sale / Demand (MUs)
				Restricted	Unrestricted	
1	2	3	4	5	6	7
1	Domestic	5820606	10435292			10559.20
2	Commercial (NRS)	938572	3288916			3016.41
3	Industrial	0	0			
(a)	*Small Supply*	90020	985962			906.53
(b)	*Medium Supply*	27117	1652375			1907.95
(c)	*Large Supply*	6890	5591924			9807.05
(d)	*Total*	124027	8230261			12621.53
4	Street Lighting	3491	48853			170.21
5	Bulk Supply	0	0			
(a)	*HT*	0	0			
(b)	*LT*	0	0			
(c)	*Total*	514	314696			603.95
6	Railway Traction	7	72868			143.45
7	**Total Metered Sales (except AP) within State**	6887217	22390886			27114.75
8	AP Consumption					
(a)	*Metered*	10325	88221			
(b)	*Un-metered*	1212741	8300740			
(c)	*Total*	1223066	8388961			10232.06
9	**Total Sale Within State (7+8)**	**8110283**	**30779847**			**37346.81**
10	Sales Outside State					174.24
11	Sales to Common Pool Consumers					303.00
12	Sales to Electricity Traders					
13	Sales to Other Distribution Licensees					
14	**Total Sales**					**37824.05**

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
ENERGY SALES YEAR 2014-15 (RE)

Format 1B

Sr. No.	Category of Consumer	No. of Consumers at the End of	Connected Load at the End of the Year (KW)	Maximum Demand		Energy Sale / Demand (MUs)
				Restricted	Unrestricted	
1	2	3	4	5	6	7
1	Domestic	6047569	11084703			11489.48
2	Commercial (NRS)	963751	3561928			3245.58
3	Industrial					
(a)	*Small Supply*	91062	1019774			923.50
(b)	*Medium Supply*	27913	1744354			1942.65
(c)	*Large Supply*	7209	5947114			11251.83
(d)	*Total*	126184	8711242			
4	Street Lighting	3879	51907			186.88
5	Bulk Supply	0	0			
(a)	*HT*	0	0			
(b)	*LT*	0	0			
(c)	*Total*	535	348195			633.35
6	Railway Traction	7	72458			152.75
7	**Total Metered Sales (except AP) within State**					**29826.01**
8	AP Consumption					
(a)	*Metered*					
(b)	*Un-metered*					
(c)	*Total*	1250885	8971751			10832.33
9	**Total Sale Within State (7+8)**	**8392809**	**32802184**			**40658.35**
10	Sales Outside State					73.33
11	Sales to Common Pool Consumers					309.00
12	Sales to Electricity Traders					
13	Sales to Other Distribution Licensees					
14	**Total Sales**					**41040.68**

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
ENERGY SALES YEAR 2015-16 (Proj.)

Format 1C

Sr. No.	Category of Consumer	No. of Consumers at the End of the Year (No.)	Connected Load at the End of the Year (KW)	Maximum Demand		Energy Sale / Demand (MUs)
				Restricted	Unrestricted	
1	2	3	4	5	6	7
1	Domestic	6272157	11576762			12515.67
2	Commercial (NRS)	987473	3792527			3468.21
3	Industrial	0	0			
(a)	*Small Supply*	91676	1038745			947.27
(b)	*Medium Supply*	28708	1810126			1991.86
(c)	*Large Supply*	7538	6273447			11783.76
(d)	*Total*	127922	9122318			14722.89
4	Street Lighting	4331	54424			203.41
5	Bulk Supply	0	0			
(a)	*HT*	0	0			
(b)	*LT*	0	0			
(c)	*Total*	548	385831			663.63
6	Railway Traction	6	71919			152.56
7	**Total Metered Sales (except AP) within State**					**31726.36**
8	AP Consumption					
(a)	*Metered*					
(b)	*Un-metered*					
(c)	*Total*	1281531	9350587			11373.95
9	**Total Sale Within State (7+8)**	**8673967**	**34354367**			**43100.31**
10	Sales Outside State					53.71
11	Sales to Common Pool Consumers					312.00
12	Sales to Electricity Traders					
13	Sales to Other Distribution Licensees					
14	**Total Sales**					**43466.02**

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
TECHNICAL AND COMMERCIAL DETAILS OF THERMAL PLANTS
GURU NANAK DEV THERMAL PLANT BHATINDA

Format 2

Sr. No.	Item	Unit	FY 2012-13 (Actual)	FY 2013-14 (Prov)	FY 2014-15 H1 (RE)	FY 2014-15 H2 (Proj.)	FY 2015-16 (Proj.)
1	2	3	4	5	6	7	8
1	Installed Capacity	MW	450.00	450.00	460.00	460.00	460.00
2	PLF	%	42.03%	41.49%	51.21%	63.21%	65.48%
3	Plant Availability	%	54.65%	63.95%	68.03%	84.79%	88.94%
4	Gross Generation	MU	1631.69	1635.46	1012.69	1270.00	2646.00
5	Auxillary Consumption						
	(i)	MU	179.75	183.01	111.42	139.70	291.06
	(ii)	%	11.02%	11.19%	11.00%	11.00%	11.00%
6	Net Generation	MU	1451.94	1452.45	901.27	1130.30	2354.94
7	Station Heat Rate	Kcal/kwh	2820.91	2760.48	2756.55	2744.78	2750.00
8	Specific Oil Consumption	ml/kwh	3.55	1.58	2.42	1.50	1.50
9	Calorific Value of Oil	Kcal/Litre	9400.00	9400.00	9400.00	9400.00	9400.00
10	Calorific Value of Coal (Weighted Average)	Kcal/Kg	4041.51	4144.71	4131.06	4100.00	4100.00
11	Overall heat content	GCal	4602843.15	4514655.91	2791543.69	3485870.60	7276500.00
12	Heat from oil	GCal	54507.59	24326.83	23080.78	17907.00	37308.60
13	Heat from coal	GCal	4548335.56	4490329.08	2768462.91	3467963.60	7239191.40
14	Total Oil Consumption	KL	5798.68	2587.96	2455.40	1905.00	3969.00
15	Coal Transit Loss	%	2.81	2.72	-1.41	1.50	1.50
16	Total Coal Consumption excluding transit loss	Tonnes	1125405.00	1083388.00	670158.00	845844.78	1765656.44
17	Quantity of PANAM coal	Tonnes	680969.00	708159.00	356070.00	600000.00	1200000.00
18	Quantity of coal other than PANAM coal	Tonnes	444436.00	375229.00	314088.00	245844.78	565656.44
19	Quantity of coal other than PANAM coal including transit loss	Tonnes	457285.73	385720.60	309659.36	249532.45	574141.29
20	Total Quantity of coal required	Tonnes	1138254.73	1093879.60	665729.36	849532.45	1774141.29
21	Price of Coal	Rs./Tonne	3277.00	3600.00	3745.67	3745.67	3745.67
22	Price of Oil	Rs./KL	47565.00	51782.00	50774.17	50774.17	50774.17
23	Total Coal Cost	Rs. Crores	373.02	393.80	249.36	318.21	664.53
24	Total Oil Cost	Rs. Crores	27.58	13.40	12.47	9.67	20.15
25	Total Fuel Cost	Rs. Crores	400.60	407.20	261.83	327.88	684.69
27	Expense Capitalized	Rs. Crores	2.36				
28	Total Fuel Cost	Rs. Crores	398.24				

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
TECHNICAL AND COMMERCIAL DETAILS OF THERMAL PLANTS
GHTP, LEHRA MOHABBAT

Sr. No.	Item	Unit	FY 2012-13 (Actual)	FY 2013-14 (Prov)	FY 2014-15 H1 (RE)	FY 2014-15 H2 (Proj.)	With Blending FY 2015-16 (Proj.)
1	2	3	4	5	6	7	9
1	Installed Capacity	MW	920	920.00	920.00	920.00	920.00
2	PLF	%	89.53%	82.70%	68.91%	78.91%	89.03%
3	Plant Availability	%	93.84%	97.30%	95.78%	85.30%	96.50%
4	Generation	MU	7215.022	6664.94	2784.28	3171.00	7195.00
5	Auxiliary Consumption						
	(i)	MU	571.940	547.52	242.47	269.54	611.58
	(ii)	%	7.93%	8.21%	8.71%	8.50%	8.50%
6	Net Generation	MU	6643.08	6117.43	2541.81	2901.47	6583.43
7	Station Heat Rate	Kcal/kwh	2324	2396.00	2425.64	2438.00	2438.00
8	Specific Oil Consumption	ml/kwh	0.270	0.32	0.70	0.50	0.50
9	Calorific Value of Oil	Kcal/Litre	9500	9500.00	9500.00	9500.00	9500.00
10	Calorific Value of Coal (Weighted Average)	Kcal/Kg	4068.00	4068.00	3944.00	3860.00	4299.20
11	Overall heat	GCal	16771054.80	15971964.35	6753653.09	7603899.45	17541410.00
12	Heat from oil	GCal	18534.50	20567.50	18610.50	15062.25	34176.25
13	Heat from coal	GCal	16752520	15951396.85	6735042.59	7588837.20	17507233.75
14	Total Oil Consumption	KL	1951	2165.00	1959.00	1585.50	3597.50
15	Coal Transit Loss	%	2.28	0.94	-0.46	1.00	1.00
16	Total Coal Consumption excluding transit loss	Tonnes	4118122	3921189.00	1707668.00	1966020.00	3339210.01
17	Quantity of PANAM coal	Tonnes	2944195	2610513.00	724589.00	0.00	0.00
18	Quantiy of coal other than PANAM coal	Tonnes	1173927	1310676.00	983079.00	1966020.00	3339210.01
19	Quantity of coal other than PANAM coal including transit loss	Tonnes	1201231	1323455.00	986188.00	1985878.79	3372939.40
20	Quantity of Imported coal excluding transit loss	Tonnes					732997.32
21	Transit loss on Imported coal	%					0.20%
22	Quantity of Imported coal with transit loss	Tonnes					734466.25
23	Total Quantity of coal required	Tonnes	4145426	3933968.00	1710777.00	1985878.79	4107405.66
24	Price of Domestic Coal	Rs./Tonne	3365.67	3651.00	3801.66	3801.66	3801.66
25	Price of Imported Coal	Rs./Tonne		0.00	0.00		9300.00
26	Price of Oil	Rs./KL	43553	49485.00	55581.00	55581.00	55581.00
27	Total cost of domestic coal	Rs. Crores					1282.28
28	Total cost of Imported coal	Rs. Crores					683.05
29	Total Coal Cost	Rs. Crores	1395.21	1436.34	650.38	754.96	1965.33
30	Total Oil Cost	Rs. Crores	8.50	10.71	10.89	8.81	20.00
31	Total Fuel Cost	Rs. Crores	1403.71	1447.05	661.27	763.78	1985.33

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
TECHNICAL AND COMMERCIAL DETAILS OF THERMAL PLANTS
GGSSTP ROOPNAGAR

Sr. No.	Item	Unit	FY 2012-13 (Actual)	FY 2013-14 (Prov)	FY 2014-15 H1 (RE)	FY 2014-15 H2 (Proj.)	With Blending FY 2015-16 (Proj.)
1	2	3	4	5	6	7	9
1	Installed Capacity	MW	1260.00	1260	1260.00	1260.00	1260.00
2	PLF	%	83.05%	72.53%	72.63%	75.53%	77.70%
3	Plant Availability	%	92.11%	89.84%	94.05%	88.67%	90.52%
4	Generation	MU	9166.57	8005.87	4019.53	4157.00	8600.00
5	Axuilary Consumption						0.00
	(i)	MU	767.23	675.68	335.33	353.35	731.00
	(ii)	%	8.37%	8.44%	8.34%	8.50%	8.50%
6	Net Generation	MU	8399.34	7330.19	3684.20	3803.66	7869.00
7	Station Heat Rate	Kcal/kwh	2537.77	2575.31	2674.75	2595.26	2544.20
8	Specific Oil Consumption	ml/kwh	0.47	0.72	0.73	0.80	1.00
9	Clorific Value of Oil	Kcal/Litre	9700.00	9700.00	9700.00	9700.00	9700.00
10	Calorific Value of Coal (weighted average)	Kcal/Kg	4053.00	4100.00	3805.00	3750.00	4209.00
11	Overall heat Conent	KCal	23262617.98	20617586.73	10751212.03	10788495.82	21880120.00
12	Heat from oil	KCal	41724.55	56045.73	28531.78	32258.32	83420.00
13	Heat from coal	KCal	23220893.43	20561541.00	10722680.25	10756237.50	21796700.00
14	Total Oil Consumption	KL	4301.50	5777.91	2941.42	3325.60	8600.00
15	Transit loss of coal	%	-0.13	-0.01	-0.94	1.00	1.00
16	Total Coal Consumption excluding transit loss	Tonnes	5729310.00	5015010.00	2818050.00	2868330.00	4246446.66
17	Quantity of PANAM coal	Tonnes	3215682.00	2529993.00	942976.00	0.00	0.00
18	Quantiy of coal other than PANAM coal	Tonnes	2513628.00	2485017.00	1875074.00	2868330.00	4246446.66
19	Quantity of coal other than PANAM coal including transit loss	Tonnes	2510364.53	2484768.52	1857612.44	2897303.03	4289340.06
20	Quantity of Imported coal excluding transit loss						932146.83
21	Transit loss on Imported coal						0.20%
22	Quantity of Imported coal with transit loss						934014.86
23	Total Quantity of coal required	Tonnes	5726046.53	5014761.52	2800588.44	2897303.03	5223354.92
24	Price of Domestic Coal	Rs./Tonne	3572.27	4060.63	4147.92	4147.92	4147.92
25	Price of Imported Coal						9300.00
26	Price of Oil	Rs./KL	42656.98	47916.29	49148.03	49148.03	49148.03
27	Total cost of domestic coal						1779.18
28	Total cost of Imported coal						868.63
29	Cost of coal	Rs. Crores	2045.50	2036.31	1168.90	1189.76	2647.82
30	Cost of oil	Rs. Crores	18.35	27.69	14.46	16.34	42.27
31	Total Fuel cost	Rs. Crores	2063.85	2064.00	1183.36	1206.11	2690.09

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
MAINTENANCE SCHEDULE OF THERMAL POWER STATIONS YEAR
TECHNICAL AND COMMERCIAL DETAILS OF THERMAL PLANTS
2012-13 (Actual)

Format 3

Sr. No.	Plant / Unit	Period	Days	Type of Mtc.
1	2	3	4	5
1	**GNDTP**			
	Unit-I	1/11/12 to 30/11/12	30	Annual overhauling
	Unit-II	1/3/13 to 30/3/13	30	Annual overhauling
	Unit-III	1/4/12 to 6/12/12 (contd. From 14/1/10)	250	R&M
	Unit-IV	01.04.12 to 31.03.13 (contd from 05.11.11)	365	R&M
2	**GGSSTP**			
	I	30/04/12 to 3/6/12	34	Capital mtc, Boiler O/H & its Chemical Cleaning
	II			
	III	4/3/2013 to 31/3/13 (Contd upto 7/4/13)	28	Capital Mtc., HPT, LPT O/H & Boiler O/H
	IV			
	V	21/12/12 to 18/01/13	28	Capital mtc., LPT O/H with NFT & MPI, Boiler O/H
	VI			
3	**GHTP**			
	Unit-I	13/2/13 to 8/3/13	24	Annual Mtc.
	Unit-II	12/11/12 to 12/12/12	31	HP turbine module replacement and capital O/H of IPT, LPTand Generator
	Unit-III	23/1/13 to 9/2/13	17	Annual Mtc
	Unit-IV	NIL		

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
MAINTENANCE SCHEDULE OF THERMAL POWER STATIONS YEAR
TECHNICAL AND COMMERCIAL DETAILS OF THERMAL PLANTS
Apr 13 to march 14 (Actual)

Format 3B

Sr. No.	Plant / Unit	Period	Days	Type of Mtc.
1	2	3	4	5
1	**GNDTP**			
	Unit-I	15.02.2014 to 31.03.2014	45	Capital overhauling
	Unit-II	-----		-
	Unit-III	------		-
	Unit-IV	01.04.13 to 31.03.14 (contd. from 05.11.11)	365	R&M in progress
2	**GGSSTP**			
	Unit-I	24/11/13 to 7/1/14	45	Capital mtc. LPT O/H, Boiler O/H, Replacement of complete re-heater.
	Unit-II	7/4/13 to 18/05/13	42	Capital mtc., HP,IP,LP,Gen. O/H Boiler O/H &Re-heater replacement.
	Unit-III	1/4/13 (Contd. From 4/3/13) to 7/4/13	7	Capital Mtc., HPT,LPT O/H, & Boiler O/H.
	Unit-IV	23/10/13 to 17/11/13	25	Annual mtc.,Boiler O/H.
	Unit-V			
	Unit-VI	25/01/14 to 8/3/14	42	Capital Mtc, TG brg. Insp.,Boiler O/H, Condensor tube replacement, IPT O/H.
3	**GHTP**			
	Unit-I	NIL		
	Unit-II	NIL		
	Unit-III	NIL		
	Unit-IV	18/5/13 to 2/6/13	15	Annual mtc.

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
MAINTENANCE SCHEDULE OF THERMAL POWER STATIONS YEAR
TECHNICAL AND COMMERCIAL DETAILS OF THERMAL PLANTS
April-14 to Sept-14 (Actual)

Format 3C

Sr. No.	Plant / Unit	Period	Days	Type of Mtc.
1	2	3	4	5
1	**GNDTP**			
	Unit-I			
	Unit-II			
	Unit-III			
	Unit-IV	01.04.14 to 26.09.14 (Contd from 05.11.11)	179	R&M works
2	**GGSSTP**			
	Unit-I			
	Unit-II			
	Unit-III			
	Unit-IV			
	Unit-V	15/4/14 to 12/5/14	28	Annual Mtc. Boiler O/H, Condenser Tube replacement, Water wall panel replacement.
	Unit-VI			
3	**GHTP**			
	Unit-I	NIL		
	Unit-II	NIL		
	Unit-III	NIL		
	Unit-IV	NIL		

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
MAINTENANCE SCHEDULE OF THERMAL POWER STATIONS YEAR
TECHNICAL AND COMMERCIAL DETAILS OF THERMAL PLANTS
Oct-14 to Mar-15 (Projected)

Format 3D

Sr. No.	Plant / Unit	Period	Days	Type of Mtc.
1	2	3	4	5
1	**GNDTP**			
	Unit-I			
	Unit-II	01.11.14 to 15.12.14	45	Capital Overhauling
	Unit-III	01.03.15 to 30.03.15	30	Annual Overhauling
	Unit-IV			
2	**GGSSTP**			
	Unit-I			
	Unit-II	7/1/15 to 20/2/15	45	Capital mtc., Boiler Overhauling, Complete replacement of Air Pre-heaters with modified design & replacement of Gooseneck area of boiler.
	Unit-III	22/10/14 to 25/11/14	35	Capital mtc., Boiler Overhauling, IPT Capital Overhauling.
	Unit-IV			
	Unit-V			
	Unit-VI			
3	**GHTP**			
	Unit-I	27/11/14 to 5/1/15	40	Capital O/H Generator / LPT
	Unit-II	11/10/14 to 30/10/14	20	Annual Mtc. (Mini O/H)
	Unit-III	22/2/15 to 7/4/15	45	Capital O/H Generator/ HPT/ IPT
	Unit-IV	NIL		

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
MAINTENANCE SCHEDULE OF THERMAL POWER STATIONS YEAR
TECHNICAL AND COMMERCIAL DETAILS OF THERMAL PLANTS
2015-16 (Proj.)

Format 3E

Sr. No.	Plant / Unit	Period	Days	Type of Mtc.
1	2	3	4	5
1	**GNDTP**			
	Unit-I	01.05.2015 to 30.05.2015	30	Annual Overhauling
	Unit-II	01.03.2016 to 30.03.2016	30	Annual Overhauling
	Unit-III			
	Unit-IV	01.01.16 to 30..01.16	30	Annual Overhauling
2	**GGSSTP**			
	Unit-I	1/10/15 to 25/10/15	25	Annual mtc. Boiler O/H, TG Bearing Inspection.
	Unit-II			
	Unit-III			
	Unit-IV	1/4/15 to 30/4/15	30	Annual mtc.,Boiler O/H,LPT O/H, TG Bearing Inspection.
	Unit-V	1/1/16 to 4/2/16	35	Capital Mtc. Boiler O/H, HPT O/H, IPT O/H, TG Bearing Inspection, Up-gradation of C&I System (Migration of WDPF to Ovation Control Sys).
	Unit-VI	1/11/15 to 30/11/15	30	Annual mtc.,Boiler O/H, HPT O/H, TG Bearing Inspection.
3	**GHTP**			
	Unit-I	NIL		
	Unit-II	NIL		
	Unit-III	Continued from 22/2/15 to 7/4/15	7	Capital O/H Generator/ HPT/ IPT
	Unit-IV	15/04/15 to 4/5/15	20	Annual O/H

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
GENERATION AT PSPCL HYDEL STATIONS AND SHARE FROM BBMB
Format 4

Sr. No.	HYDEL STATION	FY 2012-13 (Actual)	FY 2013-14 (Prov.)	FY 2014-15 (RE)	FY 2015-16 (Proj)
1	2	3	4	5	7
A)	**OWN GENERATION**				
I)	**Capacity (MW)**				
1	Shanan HEP	110	110	110	110
2	UBDC Hydel Project	91	91	91	91
	Stage-I				
	Stage-II				
	Total				
3	Mukerian Hydel Project	207	207	207	207
	MHP Stage-II			0	18
4	Anandpur Sahib Hydel Project	134	134	134	134
5	Ranjit Sagar Project	600	600	600	600
6	Micro Hydel Projects	6	6	6	6
7	**Total**	**1148**	**1148**	**1148**	**1166**
II)	**Gross Generation(MU)**				
1	Shanan HEP	439	356	484	525
2	UBDC Hydel Project				
3	Stage-I	143	195	166	185
4	Stage-II	176	167	194	185
5	Total	**319**	**362**	**361**	**369**
6	Mukerian Hydel Project	1421	1247	1128	1000
7	MHP Stage-II			0	67
8	Anandpur Sahib Hydel Project	639	735	701	720
9	Ranjit Sagar Project	1428	1576	1891	1523
10	Micro Hydel Projects	8	11	8	9
11	**Total**	**4254**	**4286**	**4573**	**4213**
12	Aux Consumption (MU) & Transformation Losses (MU)	41	36	26	12
13	Less HP share in RSD	61	68	88	66
14	**Net Hydel Generation (MU) (11-12-13)**	**4152**	**4182**	**4459**	**4135**
B)	**BBMB (MU)**				
15	PSPCL Share excluding Common Pool Share (Net)	3836	4377	4012	4107
16	Common Pool Share (Net)	309	303	309	312
17	Availability from BBMB (15+16)	4145	4680	4321	4419
18	**Total Hydel Availability (MU) (14+17)**	**8297**	**8862**	**8780**	**8554**

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
ENERGY BALANCE
Format 5

(In Mus)

Sr. No.	Item	FY 2012-13 (Actual)	FY 2013-14 (Prov.)	FY 2015-16 (RE)	FY 2015-16 (Proj.)
1	2	3	4	5	6
A)	**ENERGY REQUIREMENT**				
1	Energy sales to metered category within the State	25447	27115	29826	31726
2	Energy sales to AP	10794	10232	10832	11374
3	Total sales within the State	36242	37347	40658	43100
4	T&D losses	0	0		
i)	%	16.77%	16.89%	16.50%	16.00%
ii)	MU	7302	7588	8034	8210
iii)	*Sub-total*	43544	44934	48693	51310
		0	0		
5	Sales to common pool consumers	309	303	309	312
6	Sales to outside state				
a	*Sale through power exchange*	45	121	20	0
b	*Add: Royality to HP from Shannan (MU)*	55	53	53	54
7	*Total sales to outside state (a+b)*	100	174	73	54
d	**Total energy requirement**	43952	45412	49075	51676
B)	**ENERGY AVAILABILITY**				
1	Net thermal generation	16494	14900	14963	16807
2	**Hydel Generation**				
a	*Net Hydel generation including auxillary*	4213	4250	4547	4201
b	*Less: Royality to HP from Shannan (MU)*	0	0	0	0
c	*Less: Share from RSD to HP (MU)*	61	68	88	66
4	Net Hydel Generation (a-b-c)	4152	4182	4459	4135
5	Net power purchase	19161	21650	25332	26314
6	**BBMB & Common Pool**				
a	*Net BBMB Share*	3836	4377	4012	4107
b	*Common Pool*	309	303	309	312
7	BBMB Share (Including Common Pool) (a+b)	4145	4680	4321	4419
c	**Total energy availability**	43952	45412	49075	51676

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
ENTITLEMENT FROM CENTRAL GENERATING STATIONS FOR THE YEAR 2012-13 (Actual)

Format 6

S.No.	Station	Capacity	Firm Allocation to PSPCL		Energy sent out (Scheduled)	Firm Energy Entitlement of PSPCL	Actual Allocation to PSPCL (as per REA)	
		MW	%	MW	MU	MU	MU	%
1	2	3	4	5	6	7	8	9
A	NHPC							
1	B.Sail	180	47%	84			329	46.50%
2	Salal	690	27%	184			872	26.60%
3	Tanakpur	94	18%	17			67	17.93%
4	Chamera-I	540	10%	55			249	10.20%
5	Chamera-II	300	10%	30			177	11.81%
6	Chamera-III	231	8%	18			66	9.48%
7	Uri	480	14%	66			407	13.75%
8	Dhauliganga	280	10%	28			137	11.55%
9	Dulhasti	390	8%	32			206	9.83%
10	SEWA-II	120	8%	10			47	9.88%
11	**Total**						**2557**	
12	NJPC	1500	10%	152			772	11.15%
13	THDC(Tehri)	1000	8%	77			273	8.72%
14	Koteshwar(THDC)	400	6%	25			86	7.38%
15	DVC Durgapur	1000	20%	200			372	
B	**NTPC**							
16	Singrauli	2000	10%	200			1657	11.29%
17	Rihand - I	1000	11%	110			757	12.28%
18	Rihand - II	1000	10%	102			884	11.49%
19	Rihand-III	500	8%	41			79	8.93%
20	Anta(GPP)	419	12%	49			227	13.24%
21	Auraiya(GPP)	663	13%	83			258	13.59%
22	Dadri(GPP)	830	16%	132			526	16.62%
23	Unchachar-I	420	9%	36			234	8.98%
24	Unchahar-II	420	14%	60			417	15.57%
25	Unchahar-III	210	8%	17			126	9.36%
26	Jhajjar(JV)	500	Unallocated share				23	0.78%
27	DADRI-II TPS	980					101	1.28%
28	Total						**5289**	
C	**NTPC(ER)**							
29	Farakha (ER)	1600	1%	22			112	1.39%
30	Kahal gaon -I(ER)	840	6%	51			299	6.07%
31	Kahal gaon-II (ER)	1500	8%	120			653	8.02%
32	**Total**						**1064**	
D	**NPC**							
33	NAPP	440	12%	51			289	13.09%
34	RAPP-B	440	23%	100			807	24.60%
35	RAPP-C	440	10%	46			403	12.68%
36	**Total**						**1499**	
36	**Central sector purchase**						**11912**	
37	**Purchase through Traders/ IPPs (LONG TERM)**							
38	NVVN (Coal & Solar Bundled Power)	Included in respective NTPC plants					17	
39	PTC Tala (Hydro)	1020	Unallocated share				91	2.94%
40	Pragati-III (Bawana) PPCL	1371	10%	137			98	
41	Malana-2 (PTC)	100	86%	86			170	
42	Mundra_UMPP	4000		85			1418	
43	**Total Long Term**						**1795**	

Note: % Actual Allocation to PSPCL is based on the Cummulative Weighted Avg. Entitlements upto March from the REA for March 2013

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
ENTITLEMENT FROM CENTRAL GENERATING STATIONS FOR THE YEAR 2013-14 (Actual)
Format 6A

S.No.	Station	Capacity	Firm Allocation to		Energy sent out (Scheduled)	Firm Energy Entitlement of PSPCL	Actual Allocation to PSPCL (as per REA)	
1	2	3	4	5	6	7	8	9
A	NHPC							
1	B.Suil	180	46.5%	84	0	0	291	46.5%
2	Salal	690	26.6%	184	0	0	861	26.6%
3	Tanakpur	94	17.9%	17	0	0	57	17.9%
4	Chamera-I	540	10.2%	55	0	0	238	10.2%
5	Chamera-II	300	10.00%	30	0	0	185	12.73%
6	Chamera-III	231	7.9%	18	0	0	101	10.13%
7	Uri	480	13.8%	66	0	0	346	13.75%
8	Uri-II	180	8.1%	15	0	0	31	8.45%
9	Dhauliganga	280	10.0%	28	0	0	32	12.27%
10	Dulhasti	390	8.3%	32	0	0	232	10.55%
11	Parbati-III	390	7.9%	31	0	0	0.2	9.13%
11	SEWA-II	120	8.3%	10	0	0	52	10.60%
12	**Total**						**2424**	
13	NJPC	1500	10.1%	152	0	0	853	11.63%
14	THDC(Tehri)	1000	7.7%	77	0	0	385	9.20%
15	Koteshwar(THDC)	400	6.4%	25	0	0	123	7.86%
16	DVC Durgapur	1000	20.0%	200	0	0	1121	20.00%
B	**NTPC**							
17	Singrauli	2000	10.0%	200	0	0	1620	11.34%
18	Rihand - I	1000	11.0%	110	0	0	804	12.34%
19	Rihand - II	1000	10.2%	102	0	0	747	11.59%
20	Rihad-III	500	8.3%	41	0	0	321	9.70%
21	Anta(GPP)	419	11.7%	49	0	0	249	13.97%
22	Auraiya(GPP)	663	12.5%	83	0	0	193	14.09%
23	Dadri(GPP)	830	15.9%	132	0	0	458	16.96%
24	Unchachar-I	420	8.6%	36	0	0	224	9.03%
25	Unchahar-II	420	14.3%	60	0	0	434	15.72%
26	Unchahar-III	210	8.1%	17	0	0	123	9.52%
27	Jhajjar(JV)	480	Unallocated share				123	1.17%
28	DADRI-II TPS	400					72	1.40%
29	Total						**5367**	
C	**NTPC(ER)**							
30	Farakha (ER)	1600	1.39%	22	0	0	141	1.39%
31	Kahal gaon -I(ER)	840	6.07%	51	0	0	297	6.07%
32	Kahal gaon-II (ER)	1500	8.02%	120	0	0	730	8.02%
33	**Total**						**1168**	
D	NPC							
34	NAPP	440	11.60%	51	0	0	324	13.79%
35	RAPP-B	440	22.70%	100	0	0	827	24.61%
36	RAPP-C	440	10.40%	46	0	0	463	13.68%
37	**Central sector purchase**						**13056**	
38	**Purchase through Traders/ IPPs (LONG TERM)**							
39	NVVN (Coal & Solar Bundled Power)	Included in respective NTPC plants					159	
40	PTC Tala (Hydro)	1020	2.94%	30			106	2.94%
41	Pragati-III (Bawana) PPCL	685.5	10.00%	69			52	10.00%
42	Malana-2 (PTC)	100	86.00%	86			277	86.00%
43	SASAN_UMPP	1320	15.00%	198			376	15.00%
44	Mundra_UMPP	3800	12.50%	475			2929	12.50%
45	Rajpura TPP	700	100.00%	700			475	100.00%
46	**Total Long Term**						**4373**	

Note: % Actual Allocation to PSPCL is based on the Cummulative Weighted Avg. Entitlements upto March from the REA for March 2014

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
ENTITLEMENT FROM CENTRAL GENERATING STATIONS FOR THE YEAR 2014-15 (H1) (Actual)
Format 6B

S.No.	Station	Capacity	Firm Allocation to PSPCL		Energy sent out (Scheduled)	Firm Energy Entitlement of PSPCL	Actual Allocation to PSPCL (as per REA)	
		MW	%	MW	MU	MU	MU	
1	2	3	4	5	6	7	8	9
A	NHPC							
1	Bairasiul	180	46.5%	84			250.22	46.50%
2	Salal	690	26.6%	184			668.68	26.60%
3	Tanakpur	94	17.9%	17			31.98	17.93%
4	Chamera-I	540	10.2%	55			195.71	10.20%
5	Chamera-II	300	10.00%	30			153.42	13.57%
6	Chamera-III	231	7.9%	18			87.93	10.83%
7	Uri	480	13.8%	66			265.44	13.75%
8	Uri-II	240	8.1%	20			103.03	11.11%
9	Dhauliganga	280	10.0%	28			65.46	12.98%
10	Dulhasti	390	8.3%	32			163.33	11.26%
11	Parbati-III	520	7.9%	41			64.77	10.84%
12	Rampur	274.68	5.6%	15			64.36	7.96%
13	SEWA-II	120	8.3%	10			41.69	11.31%
14	Total						2156.02	
15	NJPC	1500	10.1%	152			645.9	12.11%
16	THDC(Tehri)	1000	7.7%	77			164.97	9.66%
17	Koteshwar(THDC)	400	6.4%	25			60.44	8.32%
18	DVC Durgapur	1000	20.0%	200			476.87	20.00%
B	NTPC							
19	Singrauli	2000	10.0%	200			781.48	11.74%
20	Rihand - I	1000	11.0%	110			379.92	12.73%
21	Rihand - II	1000	10.2%	102			419.38	12.09%
22	Rihand-III	1000	8.3%	83			313.13	10.36%
23	Anta(GPP)	419	11.7%	49			128.12	14.67%
24	Auraiya(GPP)	663	12.5%	83			95.54	14.59%
25	Dadri(GPP)	830	15.9%	132			170.32	17.29%
26	Unchachar-I	420	8.6%	36			143.95	9.24%
27	Unchahar-II	420	14.3%	60			272.72	16.37%
28	Unchahar-III	210	8.1%	17			99.93	10.16%
29	Jhajjar(JV)	1500	Unallocated share				125.4	1.51%
30	DADRI-II TPS	980					113.03	1.94%
31	Total						3042.92	
C	NTPC(ER)							
32	Farakha (ER)	1600	1.39%	22			65.91	1.39%
33	Kahal gaon -I(ER)	840	6.07%	51			151.54	6.07%
34	Kahal gaon-II (ER)	1500	8.02%	120			345.59	8.02%
35	Total						563.04	
D	NPC							
36	NAPP	440	11.6%	51			156.38	14.48%
37	RAPP-B	440	22.7%	100			394.82	24.61%
38	RAPP-C	440	10.4%	46			194.22	15.24%
	Total						745.42	
39	Central sector purchase						7855.59	0.00%
40	Purchase through Traders/ IPPs (LONG TERM)							
41	Purchase through Traders/ IPPs (LONG TERM)	Included in respective NTPC plants					103.96	
42	PTC Tata (Hydro)	1020	2.94%	30			79.17	2.94%
43	Pragati-III (Bawana) PPCL	685.5	10.00%	69			90.41	10.00%
44	Malana-2 (PTC)	100	86.00%	86			226.47	86.00%
45	SASAN_UMPP	2640	15.00%	396			1068.04	15.00%
46	Mundra_UMPP	3800	12.50%	475			1414.37	12.50%
47	Talwandi Sabo TPP	660	100.00%	660			115.02	100.00%
48	Rajpura TPP (NPL)	1400	100.00%	1400			2528.22	100.00%
49	Total Long Term						5625.66	

Note: % Actual Allocation to PSPCL is based on the Cummulative Weighted Avg. Entitlements upto September 2014 from the REA for September 2014

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
ENTITLEMENT FROM CENTRAL GENERATING STATIONS FOR THE YEAR 2014-15 (H2)
Format 6C

S.No.	Station	Capacity	Firm Allocation to PSPCL		Energy sent out (Scheduled)	Firm Energy Entitlement of PSPCL	Actual Allocation to PSPCL	
		MW	%	MW	MU	MU	MU	
1	2	3	4	5	10	11	12	13
A	NHPC							
1	Bairasiul	180	46.5%	84			87.12	46.50%
2	Salal	690	26.6%	184			221.52	26.60%
3	Tanakpur	94	17.9%	17			21.74	17.93%
4	Chamera-I	540	10.2%	55			52.91	10.20%
5	Chamera-II	300	10.0%	30			37.77	13.57%
6	Chamera-III	231	7.9%	18			11.06	10.83%
7	Uri	480	13.8%	66			121.87	13.75%
8	Uri-II	240	8.1%	20			34.78	11.11%
9	Dhauliganga	280	10.0%	28			19.07	12.98%
10	Dulhesti	390	8.3%	32			59.50	11.26%
11	Parbati-III	520	7.9%	41			21.13	10.84%
12	Rampur	412	10.2%	42			56.15	10.19%
13	SEWA-II	120	8.3%	10			16.86	11.31%
14	Koldam	200	13.9%	28			3.96	13.88%
15	**Total**						**765.41**	
16	Nathpa Jhakri(SJVNL)	1500	10.1%	152			181.18	12.11%
17	Tehri(THDC)	1000	7.7%	77			112.94	9.66%
18	Koteshwar(THDC)	400	6.4%	25			36.78	8.32%
19	DVC -Durgapur	1000	20.0%	200			465.97	20.00%
B	**NTPC**							
20	Singrauli	2000	10.0%	200			804.43	11.74%
21	Rihand - I	1000	11.0%	110			383.50	12.73%
21	Rihand - II	1000	10.2%	102			379.74	12.09%
22	Rihand - III	1000	8.3%	83			216.57	10.36%
22	Anta (GPP)	419	11.7%	49			116.06	14.67%
23	Auraiya (GPP)	663	12.5%	83			69.09	14.59%
23	Dadri (GPP)	830	15.9%	132			204.64	17.29%
24	Unchachar-I	420	8.6%	36			105.95	9.24%
24	Unchahar-II	420	14.3%	60			217.60	16.37%
25	Unchahar-III	210	8.1%	17.01			62.24	10.16%
25	Jhajjar(JV)	1500	Unallocated share				42.92	1.51%
26	DADRI-II TPS	980					17.57	1.94%
26	**Total**						**2620.30**	
C	**NTPC(ER)**							
27	Farakha (ER)	1600	1.39%	22			72.13	1.39%
28	Kahal gaon -I(ER)	840	6.07%	51			144.38	6.07%
28	Kahal gaon-II (ER)	1500	8.02%	120			380.72	8.02%
29	**Total**						**597.23**	
D	**NPC**							
29	NAPP	440	11.6%	51			167.29	14.48%
30	RAPP-B	440	22.7%	100			439.51	24.61%
30	RAPP-C	440	10.4%	46			228.83	15.24%
31	**Total**						835.62	
31	**Central Sector Purchase**						5615.43	
32	**Purchase through Traders / IPPs (LONG TERM)**							
32	NVVN(Bundled Power)	Included in respective NTPC plants					**96.13**	
33	PTC Tala(Hydro)	1020	2.94%	30			19.92	2.94%
33	Pragati-III(Bawana)PPCL	685.5	10.00%	69			254.22	10.00%
34	MALANA-2 (PTC)	100	86.00%	86			**21.47**	**86.00%**
34	SASAN_UMPP	3960	14.10%	558			**1473.71**	**14.10%**
35	MUNDRA_UMPP	3800	12.50%	475			1385.39	12.50%
35	Talwandi Sabo TPP	1980	100%	1980			1514.00	100.00%
36	RAJPURA TPP (NPL)	1400	100%	1400			4901.00	100.00%
36	**Total Long Term**						**9665.84**	

Note: % Actual Allocation to PSPCL is based on the Weighted Avg. Entitlements for SEPT 2014 from the REA for the month of SEPT 2014.

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
ENTITLEMENT FROM CENTRAL GENERATING STATIONS FOR THE YEAR 2015-16 (Projection)

Format 6D

S.No.	Station	Capacity	Firm Allocation to PSPCL		Actual Allocation to PSPCL	
		MW	%	MW	MU	
1	2	3	4	5	12	13
A	**NHPC**					
1	Bairasiul	180	46.5%	84	321.86	46.50%
2	Salal	690	26.6%	184	879.96	26.60%
3	Tanakpur	94	17.9%	17	59.62	17.93%
4	Chamera-I	540	10.2%	55	247.26	10.20%
5	Chamera-II	300	10.0%	30	184.70	13.57%
6	Chamera-III	231	7.9%	18	87.13	10.83%
7	Uri	480	13.8%	66	380.40	13.75%
8	Uri-II (4x60 = 240 MW)	240	8.1%	20	91.39	11.11%
9	Koldam HEP (4x200=800 MW)	800	13.9%	111	400.08	13.88%
10	Parbati-III (4*130 = 520 MW)	520	7.9%	41	180.41	10.84%
11	Rampur HEP (6X68.7=412 MW)	412	10.2%	42	107.91	7.96%
12	Dhauliganga	280	10.0%	28	83.08	12.98%
13	Dulhasti	390	8.3%	32	219.31	11.26%
14	SEWA-II	120	8.3%	10	52.23	11.31%
15	**Total**				**3295.32**	
16	Nathpa Jhakri(SJVNL)	1500	10.1%	152	821.94	12.11%
17	Tehri(THDC)	1000	7.7%	77	322.76	9.66%
18	Koteshwar(THDC)	400	6.4%	25	103.72	8.32%
19	DVC -Durgapur	1000	20.0%	200	989.91	20.00%
B	**NTPC**					
20	Singrauli	2000	10.0%	200	1621.18	11.74%
21	Rihand - I	1000	11.0%	110	802.49	12.73%
22	Rihand - II	1000	10.2%	102	767.53	12.09%
23	Rihand - III	1000	8.3%	83	434.32	10.36%
24	Anta (GPP)	419	11.7%	49	235.79	14.67%
25	Auraiya (GPP)	663	12.5%	83	161.60	14.59%
26	Dadri (GPP)	830	15.9%	132	395.84	17.29%
27	Unchachar-I	420	8.6%	36	257.99	9.24%
28	Unchahar-II	420	14.3%	60	489.26	16.37%
29	Unchahar-III	210	8.1%	17	159.63	10.16%
30	Jhajjar(JV)	1500	Unallocated Share		184.32	1.51%
31	DADRI-II TPS	980			128.91	1.94%
32	**Total**				**5638.86**	
C	**NTPC(ER)**					
33	Farakha (ER)	1600	1.39%	22	141.53	1.39%
34	Kahal gaon -I(ER)	840	6.07%	51	297.28	6.07%
35	Kahal gaon-II (ER)	1500	8.02%	120	729.70	8.02%
36	**Total**				**1168.52**	
D	**NPC**					
37	NAPP	440	11.6%	51	326.07	14.48%
38	RAPP-B	440	22.7%	100	807.84	24.61%
39	RAPP-C	440	10.4%	46	449.83	15.24%
40	**Total**				**1583.75**	
41	**Central Sector Purchase**				**13924.78**	
42	**Purchase through Traders / IPPs (LONG TERM)**	.				
43	NVVN(Bundled Power)	included in respective NTPC plants			212.75	
44	PTC Tala(Hydro)	1020	2.94%	30	98.25	2.94%
45	Pragati-III(Bawana)PPCL	685.5	10.00%	69	509.83	10.00%
46	MALANA-2 (PTC)	100	86.00%	86	231.59	86.00%
47	SASAN_UMPP	3960	14.10%	558	3130.39	14.10%
48	MUNDRA_UMPP	3800	12.50%	475	2817.46	12.50%
49	Goindwal Sahib TPS	540	100%	540	1798.00	100.00%
50	Talwandi Sabo TPP	1980	100%	1980	8388.00	100.00%
51	RAJPURA TPP (NPL)	1400	100%	1400	9829.00	100.00%
52	**Total Long Term**				**27015.27**	

Note: % Actual Allocation to PSPCL is based on the Weighted Avg. Entitlements for SEPT 2014 from the REA for the month of SEPT 2014.

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
POWER PURCHASE COST FOR YEAR 2012-13 (Actual)
Format 7

Sr. No.	Source	Purchase (MU)	External losses (%)	Energy recd. by PSPCL (MU)	AFC (Rs. Crs.)	PSPCL cummulative entitlement as per final REA of Sept. 2011(%)	VC (Pc/Unit)	FC (Rs. Crs.)	VC (Rs. Crs.)	Others (Rs. Crs.)	Total (Rs. Crs.) (9+10+11)
1	2	3	4	5	6	7	8	9	10	11	12
I	NTPC										
1	Anta (G/F)	183.00	3.65	176.32	207.81	13.24	282.61	30.19	51.72	0.23	82.14
2	Anta (R/F)	44.39	3.65	42.77	0.00	0.00	725.11	0.00	32.19	0.00	32.19
3	Anta (L/F)	0.00	3.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Auraiya (G/F)	180.24	3.65	173.66	253.68	13.59	280.70	36.95	50.59	0.20	87.75
5	Auraiya (R/F)	77.41	3.65	74.59	0.00	0.00	870.99	0.00	67.43	0.00	67.43
6	Auraiya (L/F)	0.00	3.65	0.00	0.00	0.00	1006.30	0.00	0.00	0.00	0.00
7	Dadri Gas (G/F)	415.76	3.65	400.59	359.78	16.62	282.13	68.61	117.30	0.00	185.91
8	Dadri Gas (R/F)	109.73	3.65	105.73	0.00	0.00	845.85	0.00	92.82	0.00	92.82
9	Dadri Gas (L/F)	0.03	3.65	0.02	0.00	0.00	792.90	0.00	0.02	0.35	0.37
10	Singrauli	1657.18	3.65	1596.68	693.61	11.29	105.18	86.22	174.30	0.78	261.31
11	Rihand-I	756.78	3.65	729.16	547.26	12.28	107.12	64.35	81.07	0.56	145.99
12	Rihand-II	883.78	3.65	851.52	653.29	11.49	109.59	81.82	96.85	0.21	178.88
13	Rihand-III	79.22	3.65	76.33	606.38	8.93	88.53	17.07	7.01	0.04	24.13
14	Unchahar-I	234.11	3.65	225.57	244.71	8.98	240.84	25.44	56.39	0.16	81.98
15	Unchahar-II	417.35	3.65	402.11	290.87	15.57	241.71	53.20	100.88	0.21	154.29
16	Unchahar-III	125.68	3.65	121.09	198.95	9.36	242.78	20.19	30.51	0.07	50.77
17	Farakka (ER)	111.84	3.65	107.75	880.53	1.39	233.89	10.69	26.16	0.53	37.38
18	Kahalgaon-I (ER)	298.92	3.65	288.01	546.04	6.07	207.38	33.38	61.99	0.94	96.31
19	Kahalgaon-II (ER)	653.05	3.65	629.21	1233.06	8.02	197.39	93.10	128.90	0.59	222.59
20	NCTPS- 2C (DADRI II)	101.05	3.65	97.36	1089.51	1.28	270.87	14.26	27.37	0.01	41.64
21	IGSTPS Jhajjar (NTPC JV)	22.84	3.65	22.00	1134.04	0.78	339.03	8.58	7.74	-0.01	16.31
	NHPC	0.00	3.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
II	Bairasuil	329.26	3.65	317.24	99.95	46.50	80.89	30.53	26.63	0.29	57.45
22	Salal	872.14	3.65	840.31	253.96	26.60	47.30	42.09	41.25	94.57	177.91
23	Tanakpur	67.42	3.65	64.96	87.18	17.93	108.12	8.89	7.29	0.07	16.25
24	Chamera-I	249.02	3.65	239.93	278.34	10.20	90.93	17.52	22.64	0.13	40.30
25	Chamera-II	176.59	3.65	170.14	356.23	11.81	136.60	25.68	24.12	0.10	49.91
26	Uri	407.40	3.65	392.53	355.60	13.75	79.00	37.39	32.18	18.56	88.13
27	Dauli Ganga	136.87	3.65	131.88	281.26	11.55	142.46	20.35	19.50	0.09	39.94
28	Dulhasti	205.92	3.65	198.40	1011.74	9.83	290.79	53.61	59.88	10.51	124.00
29	Sewa-II	46.70	3.65	45.00	198.96	9.88	216.50	11.56	10.11	0.95	22.62
30	Chamera-III	66.22	3.65	63.80	242.59	9.48	200.20	14.99	13.26	0.06	28.31
31	NPCIL	0.00	3.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NAPP	288.63	3.65	278.10	0.00	13.09	247.07	0.00	71.31	0.54	71.85
III	RAPP-3 &4	806.48	3.65	777.04	0.00	24.60	276.25	0.00	222.79	0.26	223.05
32	RAPP-5 & 6	403.81	3.65	389.07	0.00	12.68	341.79	0.00	138.02	0.02	138.04
33	OTHER SOURCES (Central Sector)	0.00	3.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
34	Nathpa Jhakri HEP (SJVNL)	772.15	3.65	743.97	1312.43	11.15	113.37	106.74	87.54	19.95	214.23
	Tehri HEP (THDC)	272.98	3.65	263.02	0.00	8.72	250.00	52.43	68.25	6.40	127.07
IV	Koteshwer HEP (THDC)	86.40	3.65	83.25	0.00	7.38	208.29	19.16	18.00	0.00	37.15
35	Durgapur TPS (DVC)	372.15	3.65	358.57	690.26	20.00	290.06	99.32	107.95	0.00	207.26
36	TRADERS (Short Term Power)	4558.23	3.65	4391.85	0.00	0.00	379.41	0.00	1729.42	0.00	1729.42
37	Open Access Chgs. of Traders for short term power	0.00	3.65	0.00	0.00	0.00	0.00	64.86	0.00	0.00	64.86
38	Beas Valley	257.35	3.65	247.96	0.00	0.00	414.00	0.00	106.54	0.00	106.54
39	TRADERS/IPPs (Long Term Power)	0.00	3.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40	Tala HEP (PTC)	91.14	3.65	87.81	0.00	0.00	202.01	0.00	18.41	0.00	18.41
41	Pragati-III Gas Plant Bawana (PPCL)	98.16	3.65	94.58	0.00	10.00	290.23	47.36	28.49	2.72	78.57
42	Mundra UMPP (CGPL)	1418.41	3.65	1366.64	0.00	12.50	149.83	139.11	212.52	-0.50	351.14
a)	Mallana-II HEP (PTC)	169.87	3.65	163.67	0.00	100.00	363.00	0.00	61.66	0.00	61.66
b)	Long Term POC (OA)Traders	0.00	3.65	0.00	0.00	0.00	0.00	0.00	0.00	11.32	11.32
c)	NVVNL Bundled Power (NTPC Thermal Power + Solar power)	17.44	3.65	16.80	0.00	0.00	496.19	0.00	8.65	0.00	8.65
d)	Long Term NRSE Purchase within Punjab	454.00	0.00	454.00	0.00	0.00	494.47	0.00	224.49	0.00	224.49
e)	Short Term NRSE Purchase within Punjab	97.55	0.00	97.55	0.00	0.00	458.24	0.00	44.70	0.00	44.70
f)	Net Banking with HPSEB,UPCL,J & K & thro. Traders	93.33	0.00	37.24	0.00	0.00	466.81	0.00	43.57	0.00	43.57
43	Open Access Chgs. of Banking	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.89	31.89
44	UI	651.34	0.00	651.34	0.00	0.00	436.92	0.00	284.58	0.00	284.58

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
POWER PURCHASE COST FOR YEAR 2012-13 (Actual)
Format 7

Sr. No.	Source	Purchase (MU)	External losses (%)	Energy recd. by PSPCL (MU)	AFC (Rs. Crs.)	PSPCL cummulative entitlement as per final REA of Sept. 2011(%)	VC (Pc/Unit)	FC (Rs. Crs.)	VC (Rs. Crs.)	Others (Rs. Crs.)	Total (Rs. Crs.) (9+10+11)
1	2	3	4	5	6	7	8	9	10	11	12
45	Reactive Charges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.00	3.49
46	UI (Open access)	-1.00		-1.00					-1.35	0.00	-1.35
47	UI (Open access) Import	75.23	0.00	75.23	0.00	0.00	0.00	0.00			
48	Other Charges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
49	PGCIL	0.00	0.00	0.00	0.00	0.00	0.00	588.12	0.00	0.00	588.12
50	Purchase of RECs for FY 2012-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.08	0.00	45.08
51	Difference	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
52	**Total Power purchase**	19894	3.68	19161	0.00	0.00	250.95	2023.79	4992.21	202.81	7219.09

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2014-15
Net banking data for 2012-13 (Actual)
Format 7 Annex

Sl.No	Particulars	Gross Energy (Mus)	% LOSSES	Net Energy (Mus)	AMOUNT (Rs. Crs.)	Rate (Pc/Unit)
1	2	3	4	5	6	7
2	**Banking (Import)**					
3	HPSEB	404.27	3.65	389.50	129.07	319.28
4	RPPC	0.00	0.00	0.00	0.00	0.00
5	UPCL	83.93	3.65	80.86	32.37	385.68
6	J&K	290.45	3.65	279.84	92.60	318.82
7	MPPTCL	145.21	3.65	139.91	46.18	318.00
8	TRADERS	0.00	3.65	0.00	0.00	0.00
9	Mittal	53.96	3.65	51.99	18.86	349.44
10	JSW	355.72	3.65	342.73	114.11	320.78
11	Shree Cement Ltd.	128.01	3.65	123.33	42.68	333.38
12	Knowledge Infrastructure	73.75	3.65	71.06	26.27	356.23
13	Premium	0.00	0.00	0.00	0.00	0.00
14	**Total Banking Purchase**	1535.31	0.00	1479.22	502.13	327.06
15	**Banking (Export)**	0.00	0.00	0.00	0.00	0.00
16	HPSEB	-492.49	0.00	-492.49	-156.61	318.00
17	RPPC	0.00	0.00	0.00	0.00	0.00
18	UPCL	-0.82	0.00	-0.82	-0.26	318.00
19	J&K	-305.81	0.00	-305.81	-97.25	318.00
20	MPPTCL	-285.43	0.00	-285.43	-90.77	318.00
21	TRADERS	0.00	0.00	0.00	0.00	0.00
22	Mittal	0.00	0.00	0.00	0.00	0.00
23	JSW	-274.70	0.00	-274.70	-87.35	318.00
24	Shree Cement Ltd.	0.00	0.00	0.00	0.00	0.00
25	Knowledge Infrastructure	-82.72	0.00	-82.72	-26.32	318.21
26	Premium	0.00	0.00	0.00	0.00	0.00
27	**Total Banking Sale**	-1441.98	0.00	-1441.98	-458.57	318.01
28	Banking (NET)	0.00	0.00	0.00	0.00	0.00
29	HPSEB	-88.23	0.00	-102.99	-27.54	312.15
30	RPPC	0.00	0.00	0.00	0.00	0.00
31	UPCL	83.11	0.00	80.04	32.11	386.35
32	J&K	-15.36	0.00	-25.97	-4.65	302.54
33	MPPTCL	-140.21	0.00	-145.52	-44.59	318.00
34	TRADERS	0.00	0.00	0.00	0.00	0.00
35	Mittal	53.96	0.00	51.99	18.86	349.44
36	JSW	81.02	0.00	68.03	26.75	330.19
37	Shree Cement Ltd.	128.01	0.00	123.33	42.68	333.38
38	Knowledge Infrastructure	-8.97	0.00	-11.67	-0.05	5.81
39	Premium	0.00	0.00	0.00	0.00	0.00
40	**Net Banking Total**	93.33	0.00	37.24	43.57	466.81

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
POWER PURCHASE COST YEAR 2013-14 (ACTUAL)

Format 7A

Sr. No.	Source	Gross Purchase (MU)	External losses (%)	Energy recd. by PSPCL (MU)	AFC (Rs. Crs.)	PSPCL cummulative entitlement as per final REA of March 2014(%)	VC (Ps/Unit)	FC (Rs. Crs.)	VC (Rs. Crs.)	Others (Rs. Crs.)	Total (Rs. Crs.) (9+10+11)
1	2	3	4	5	6	7	8	9	10	11	12
I	NTPC										
1	Anta (G/F)	247.65	2.99	240.26	211.86	13.97	285.96	34.20	70.82	0.14	105.16
2	Anta (R/F)	0.83	2.99	0.80	0.00	0.00	756.93	0.00	0.63	0.00	0.63
3	Anta (L/F)	0.00	2.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Auraiya (G/F)	190.43	2.99	184.74	253.18	14.09	319.41	41.11	60.63	0.00	101.75
5	Auraiya (R/F)	2.46	2.99	2.38	0.00	0.00	895.98	0.00	2.20	0.00	2.20
6	Auraiya (L/F)	0.00	2.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Dadri Gas (G/F)	453.96	2.99	440.40	324.57	16.96	328.15	62.99	148.97	-1.12	210.83
8	Dadri Gas (R/F)	3.58	2.99	3.47	0.00	0.00	941.25	0.00	3.37	0.00	3.37
9	Dadri Gas (L/F)	0.00	2.99	0.00	0.00	0.00	792.90	0.00	0.00	0.00	0.00
10	Singrauli	1619.84	2.99	1571.48	749.79	11.34	109.28	92.42	177.02	0.89	270.33
11	Rihand-I	803.74	2.99	779.74	567.00	12.34	131.67	75.88	105.83	0.53	182.25
12	Rihand-II	747.42	2.99	725.10	650.90	11.59	130.94	76.02	97.87	0.23	174.12
13	Rihand-III	321.06	2.99	311.47	623.12	9.70	129.58	61.06	41.60	0.09	102.76
14	Unchahar-I	223.94	2.99	217.26	250.07	9.03	267.71	26.15	59.95	0.13	86.23
15	Unchahar-II	434.31	2.99	421.34	258.60	15.72	266.10	46.98	115.57	0.22	162.77
16	Unchahar-III	122.93	2.99	119.26	198.12	9.52	263.85	19.62	32.44	0.08	52.14
17	Farakka (ER)	140.81	2.99	136.60	941.58	1.39	305.60	14.27	43.03	0.42	57.72
18	Kahalgaon-I (ER)	297.45	2.99	288.57	558.18	6.07	276.55	37.70	82.26	1.08	121.04
19	Kahalgaon-II (ER)	730.11	2.99	708.31	1261.55	8.02	263.25	103.53	192.20	1.02	296.75
20	NCTPS- 2C (DADRI II)	71.75	2.99	69.61	1089.12	1.40	296.48	13.29	21.27	0.02	34.58
21	IGSTPS Jhajjar (NTPC JV)	122.72	2.99	119.05	1625.00	1.17	360.37	19.93	44.22	5.95	70.11
II	NHPC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	Baira Siul	291.25	2.99	282.55	104.79	46.50	83.82	30.41	24.41	0.59	55.41
23	Salal	860.65	2.99	834.95	257.36	26.60	47.90	43.83	41.22	68.47	153.53
24	Tanakpur	56.65	2.99	54.95	90.76	17.93	115.20	7.72	6.53	0.06	14.31
25	Chamera-I	237.84	2.99	230.74	291.05	10.20	94.54	18.25	22.49	0.35	41.09
26	Chamera-II	185.34	2.99	179.81	357.33	12.73	142.42	27.97	26.40	0.26	54.63
27	Uri	345.53	2.99	335.21	362.14	13.75	80.50	34.42	27.81	11.05	73.29
28	Dauli Ganga	31.52	2.99	30.58	286.70	12.27	145.30	4.95	4.58	0.24	9.77
29	Dulhasti	231.50	2.99	224.59	1020.99	10.55	282.09	63.59	65.30	8.13	137.42
30	Sewa-II	52.30	2.99	50.74	198.90	10.60	240.53	14.72	12.58	0.74	28.04
31	Chamera-III	100.51	2.99	97.50	351.62	10.13	159.14	21.34	20.01	0.09	41.44
32	Uri-II	30.82	2.99	29.90	116.92	8.45	166.70	8.02	5.14	0.05	13.21
III	NPCIL	0.00	2.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
33	NAPP	324.04	2.99	314.37	0.00	13.79	248.50	0.00	80.52	0.09	80.61
34	RAPP-3 &4	826.52	2.99	801.84	0.00	24.61	277.62	0.00	229.46	0.13	229.59
35	RAPP-5 & 6	463.35	2.99	449.51	0.00	13.67	343.19	0.00	159.02	0.07	159.09
IV	OTHER SOURCES (Central Sector)	0.00	2.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
36	Nathpa Jhakri HEP (SJVNL)	853.04	2.99	827.57	1312.43	11.63	111.57	112.00	95.17	22.27	229.45
37	Tehri HEP (THDC)	385.11	2.99	373.61	1108.43	9.20	185.73	65.30	71.53	12.86	150.69
38	Koteshwer HEP (THDC)	123.40	2.99	119.72	488.67	7.86	175.48	18.84	21.66	0.07	40.57
39	Durgapur TPS (DVC)	1121.46	2.99	1087.98	1380.55	20.00	304.42	263.38	341.40	0.00	604.78
40	TRADERS (Short Term Power)	3461.44	2.99	3358.08	0.00	0.00	370.13	0.00	1281.18	0.00	1281.18
41	Open Access Chgs. of Traders for short term power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74.35	74.35
VI	TRADERS/IPPs (Long Term Power)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
42	Tala HEP (PTC)	106.41	2.99	103.23	0.00	0.00	202.00	0.00	21.49	0.00	21.49
43	Pragati Gas Plant Bawana (PPCL)	51.73	2.99	50.18	607.13	10.00	282.94	74.23	14.64	3.04	91.90
44	Mundra UMPP (CGPL)	2928.54	2.99	2841.10	0.00	12.50	150.20	301.39	439.86	0.46	741.72
45	Malana-II HEP (PTC)	276.69	2.99	268.43	0.00	100.00	365.23	0.00	101.05	0.00	101.06
46	NVVNL Bundled Power (NTPC Thermal Power + Solar power)	159.12	2.99	154.37	0.00	0.00	455.50	0.00	72.48	0.00	72.48
47	Sasan UMPP (RPL)	375.58	2.99	364.37	0.00	15.00	57.65	4.68	21.65	0.12	26.45
48	NABHA POWER LTD. RAIPURA	474.65	0.00	474.65	0.00	0.00	193.67	67.73	91.93	-9.17	150.49
49	Long Term NRSE Purchase within Punjab	610.57	0.00	610.57	0.00	0.00	504.11	0.00	307.79	0.00	307.79
50	Short Term NRSE Purchase within Punjab	4.50	0.00	4.50	0.00	0.00	404.00	0.00	1.82	0.00	1.82
51	Beas Valley NRSE Short Term(PTC)	45.96	2.99	44.59	0.00	0.00	0.00	0.00	20.22	0.00	20.22
52	Net Banking with HPSEB,UPCL,J & K & thro. Traders	796.27	0.00	716.41	0.00	0.00	323.61	0.00	257.68	0.00	257.68
53	Banking Premium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.27	0.00	26.27
54	UI	-55.05	0.00	-55.05	0.00	0.00	-1374.33	0.00	75.66	0.00	75.66
55	Reactive Charges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.87	0.00	5.87
	UI (Open Access)										
56	PGCIL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	729.58	0.00	729.58
57	Mercadoz	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.15
58	Open Access Intra state UI Import	48.20	0.00	48.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
59	Purchase of RECs for FY 2013-14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	72.50	0.00	72.50
59	Previous Payment made during 13-14										157.00
59	Total Power purchase	22340.44	3.09	21649.60	0.00	0.00	272.90	1909.36	6096.80	204.18	8367.33

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2014-15
Net banking data for 2013-14 (Actual)
Format 7A Annex

Sr.No.	Particulars	Gross Energy (Mus)	External losses (%)	Net Energy (Mus)	Amount (Rs. Crs.)	Rate (Ps/Unit)
1	Banking (Purchase)					
2	HPSEB	384.39	2.99	372.91	124.36	323.52
3	RPPC	0.00	2.99	0.00	0.00	0.00
4	UPCL	0.00	2.99	0.00	0.00	0.00
5	J&K	93.93	2.99	91.13	30.21	321.64
6	MPPTCL	847.45	2.99	822.15	277.31	327.23
7	TRADERS	0.00	2.99	0.00	0.00	0.00
8	TATA	147.02	2.99	142.63	48.37	329.00
9	GMR	47.25	2.99	45.84	15.55	329.00
10	JSW	840.83	2.99	815.73	276.64	329.00
11	PTC	135.33	2.99	131.29	44.52	329.00
12	Mittal	178.54	2.99	173.21	58.74	329.00
13	Shree Cement Ltd.					
14	Knowledge Infrastructure					
15	Total Banking Purchase	2674.74	0.00	2594.88	875.70	327.39
16	Banking (Sale)					
17	HPSEB	-377.65	0.00	-377.65	-124.25	329.00
18	RPPC	0.00	0.00	0.00	0.00	0.00
19	UPCL	0.00	0.00	0.00	0.00	0.00
20	J&K	-78.04	0.00	-78.04	-25.68	329.00
21	MPPTCL	-749.05	0.00	-749.05	-246.44	329.00
22	TRADERS	0.00	0.00	0.00	0.00	0.00
23	TATA	-75.65	0.00	-75.65	-24.89	329.00
24	GMR	-45.00	0.00	-45.00	-14.81	329.00
25	JSW	-242.16	0.00	-242.16	-79.67	329.00
26	PTC	-113.27	0.00	-113.27	-37.27	329.00
27	Mittal	-197.65	0.00	-197.65	-65.03	329.00
28	Shree Cement Ltd.	0.00	0.00	0.00	0.00	0.00
29	Knowledge Infrastructure	0.00	0.00	0.00	0.00	0.00
30	Total Banking Sale	-1878.47	0.00	-1878.47	-618.02	329.00
31	Banking (NET)					
32	HPSEB	6.74	0.00	-4.74	0.11	16.64
33	RPPC	0.00	0.00	0.00	0.00	0.00
34	UPCL	0.00	0.00	0.00	0.00	0.00
35	J&K	15.89	0.00	13.09	4.54	285.49
36	MPPTCL	98.40	0.00	73.09	30.88	313.78
37	TRADERS					
38	TATA	71.37	0.00	66.98	23.48	329.00
39	GMR	2.25	0.00	0.84	0.74	329.00
40	JSW	598.67	0.00	573.57	196.96	329.00
41	PTC	22.06	0.00	18.02	7.26	329.00
42	Mittal	-19.11	0.00	-24.44	-6.29	329.00
43	Shree Cement Ltd.	0.00	0.00	0.00	0.00	0.00
44	Knowledge Infrastructure	0.00	0.00	0.00	0.00	0.00
45	Net Banking Total	796.27	0.00	716.41	257.68	323.61

PUNJAB STATE POWER CORPORTION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
POWER PURCHASE COST YEAR 2014-15 H1 (ACTUAL)

Format 70

Sr. No.	Source	Purchase (MU)	External losses (%)	Energy recd. by PSPCL (MU)	AFC (Rs. Crs.)	PSPCL entitlement as per provisional REA of September 2014(%)	VC (Ps/Unit)	FC (Rs. Crs.)	VC (Rs. Crs.)	Others (Rs. Crs.)	Total (Rs. Crs.) (9+10+11)
1	2	3	4	5	6	7	8	9	10	11	12
1	NTPC										
2	Anta (G/F)	125.95	2.25	123.12	211.72	14.67	250.87	15.53	32.73	0.03	48.29
3	Anta (R/F)	2.17	2.25	2.12	0.00	0.00	922.38	0.00	2.00	0.00	2.00
4	Anta (L/F)	0.00	2.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Auraiya (G/F)	89.29	2.25	87.28	253.18	14.59	315.67	18.46	28.19	0.04	46.69
6	Auraiya (R/F)	6.25	2.25	6.11	0.00	0.00	1118.27	0.00	6.99	0.00	6.99
7	Auraiya (L/F)	0.00	2.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Dadri Gas (G/F)	162.23	2.25	158.59	324.57	17.29	315.68	28.09	51.21	0.06	79.33
9	Dadri Gas (R/F)	8.08	2.25	7.90	0.00	0.00	1100.70	0.00	8.90	0.00	8.90
10	Dadri Gas (L/F)	0.00	2.25	0.00	0.00	0.00	792.90	0.00	0.00	0.00	0.00
11	Singrauli	781.48	2.25	763.93	743.24	11.37	119.42	42.26	93.32	0.28	135.86
12	Rihand-I	379.92	2.25	371.39	560.64	12.36	162.67	32.22	61.88	0.17	94.27
13	Rihand-II	419.38	2.25	409.97	650.90	11.68	165.20	38.00	69.28	0.07	107.35
14	Rihand-III	313.13	2.25	306.10	908.69	9.91	164.65	41.68	51.56	0.04	93.28
15	Unchahar-I	143.96	2.25	140.73	250.07	9.10	293.11	11.37	42.20	0.19	53.76
16	Unchahar-II	272.74	2.25	266.62	258.60	15.93	284.91	20.59	77.71	0.36	98.65
17	Unchahar-III	99.93	2.25	97.69	198.12	9.72	286.08	9.62	28.55	0.51	38.72
18	Farakka (ER)	65.91	2.25	64.43	941.58	1.39	314.86	6.08	20.75	0.03	26.87
19	Kahalgaon-I (ER)	151.54	2.25	148.14	552.84	6.07	267.21	16.78	40.49	0.04	57.31
20	Kahalgaon-II (ER)	345.59	2.25	337.83	1261.55	8.02	250.17	46.69	86.46	0.07	133.22
21	NCTPS- 2C (DADRI II)	113.03	2.25	110.50	1069.12	1.53	338.25	8.30	38.23	0.01	46.53
22	IGSTPS Jhajjar (NTPC JV)	125.36	2.25	122.54	1625.00	1.51	391.83	10.98	49.12	9.60	69.70
23	NHPC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	Bairasuil	250.22	2.25	244.60	104.79	46.50	85.98	13.73	21.52	0.14	35.38
25	Salal	668.68	2.25	653.66	257.36	26.60	47.90	29.41	32.03	71.05	132.49
26	Tanakpur	31.98	2.25	31.27	90.76	17.93	115.20	5.24	3.68	0.03	8.95
27	Chamera-I	195.71	2.25	191.31	291.05	10.20	99.10	9.43	19.39	0.02	28.84
28	Chamera-II	153.42	2.25	149.97	357.33	14.60	147.80	15.53	22.68	0.02	38.22
29	Uri	265.44	2.25	259.48	362.14	13.75	80.50	19.36	21.37	12.00	52.73
30	Dauli Ganga	65.46	2.25	63.99	286.70	13.83	145.30	5.28	9.51	0.05	14.85
31	Dulhasti	163.33	2.25	159.66	1020.99	12.11	307.90	34.94	50.29	8.00	93.23
32	Sewa-II	41.69	2.25	40.75	298.90	12.16	233.90	7.83	9.75	0.78	18.36
33	Chamera-III	87.93	2.25	85.95	351.62	11.69	219.80	12.94	19.33	0.01	32.27
34	Uri-II	103.03	2.25	100.72	338.75	11.97	181.65	18.83	18.72	8.81	46.36
35	Parbati-III	64.77	2.25	63.32	382.95	11.69	317.60	8.43	20.57	-0.01	28.99
36	Koldam	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
37	NPCIL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
38	NAPP	156.19	2.25	152.69	0.00	14.48	248.64	0.00	38.84	0.00	38.84
39	RAPP-3 &4	394.34	2.25	385.49	0.00	14.61	277.92	0.00	109.60	0.06	109.66
40	RAPP-5 & 6	194.06	2.25	189.70	0.00	15.74	343.47	0.00	66.65	0.03	66.69
41	OTHER SOURCES (Central Sector)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
42	Nathpa Jhakri HEP (SJVNL)	645.90	2.25	631.40	1652.60	14.41	138.38	64.00	89.38	3.38	156.76
43	Rampur HEP (SJVNL)	64.36	2.25	62.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44	Tehri HEP (THDC)	164.97	2.25	161.26	1116.48	10.23	229.21	28.46	37.81	5.94	72.21
45	Koteshwer HEP (THDC)	60.44	2.25	59.08	393.33	8.89	197.39	10.97	11.93	0.03	22.93
46	Durgapur TPS (DVC)	479.09	2.25	468.34	1380.55	20.00	243.74	112.28	116.78	0.00	229.05
47	TRADERS (Short Term Power)	3399.49	2.25	3323.15	0.00	0.00	384.31	0.00	1306.46	0.00	1306.46
48	Open Access Chgs of Traders for short term power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.42	24.42
49	TRADERS/IPPs (Long Term Power)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	Tala HEP (PTC)	79.17	2.25	77.40	0.00	0.00	202.00	0.00	15.99	0.00	15.99
51	Pragati-III Gas Plant Bawana (PPCL)	90.41	2.25	88.38	1187.39	10.00	306.43	59.37	27.70	0.00	87.07
52	Mundra UMPP (CGPL)	1414.37	2.25	1382.61	0.00	12.50	144.31	135.73	204.11	0.15	340.00
53	Malleria-II HEP (PTC)	202.31	2.25	197.77	0.00	100.00	363.00	0.00	73.44	0.23	73.67
54	NVVNL Bundled Power (NTPC Thermal Power + Solar power)	117.50	2.25	114.85	0.00	0.00	492.48	0.00	57.86	0.00	57.86
55	Sasan UMPP (RPL)	1068.04	2.25	1044.06	0.00	0.00	57.66	13.61	61.58	0.12	75.32
56	Talwandi Sabo TPS (Sterlite)	160.26	0.00	160.26	0.00	0.00	210.85	0.21	33.79	0.00	34.00
57	NPL Rajpura TPS (L & T)	2595.90	0.00	2595.90	0.00	0.00	230.84	346.03	599.23	0.00	945.26
58	Long Term NRSE Purchase within Punjab	281.49	0.00	281.49	0.00	0.00	521.94	0.00	146.92	0.00	146.92
59	Short Term NRSE Purchase within Punjab	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	Net Banking with HPSEB,UPCL,J & K & thro. Traders	719.98	2.86	699.43	0.00	0.00	342.00	0.00	246.23	0.00	246.23
61	Open Access Chgs. of Banking	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09
62	UI	134.89	0.00	134.89	0.00	0.00	1526.33	0.00	205.89	0.00	205.89
63	Reactive Charges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.60	0.00	2.60
64	Other Charges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	PGCIL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	427.15	0.00	427.15
66	Purchase of RECs for FY 2013-14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
67	Mercadoz	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.23
68	Total Power purchase	18120.79	1.88	17780.72	0.00	0.00	271.42	1298.24	4918.38	147.05	6363.68
69	Previous Payments made during 2014-15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	279.31
70	Grand Total Power purchase (2014-15)	18120.79	1.88	17780.72		0.00	271.42	1298.24	4918.38	147.05	6642.99

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2014-15
Net banking data for 2014-15 H1 (Actual)
Format 7B Annex

Sl.No	Particulars	Gross Energy	% LOSSES	Net Energy	AMOUNT (Rs. Crs.)	Rate (Pc/Unit)
1	**Banking (Purchase)**					
2	HPSEB	588.30	2.25	575.09	201.20	342.00
3	RPPC	0.00	2.25	0.00	0.00	0.00
4	UPCL	0.00	2.25	0.00	0.00	0.00
5	J&K	36.45	2.25	35.63	12.47	342.00
6	MPPTCL	123.55	2.25	120.78	42.25	342.00
7	TRADERS	0.00	2.25	0.00	0.00	0.00
8	TATA	0.00	2.25	0.00	0.00	0.00
9	J & K (Thro. PTC)	113.32	2.25	110.78	38.76	342.00
10	JSW	0.00	2.25	0.00	0.00	0.00
11	PTC	45.00	2.25	43.99	15.39	342.00
12	Mittal	8.82	2.25	8.62	3.02	342.00
13	Shree Cement Ltd.	0.00	2.25	0.00	0.00	0.00
14	Knowledge Infrastructure	0.00	2.25	0.00	0.00	0.00
15	**Total Banking Purchase**	915.44	0.00	894.88	313.08	342.00
16	**Banking (Sale)**	0.00	0.00	0.00	0.00	0.00
17	HPSEB	0.00	0.00	0.00	0.00	0.00
18	RPPC	0.00	0.00	0.00	0.00	0.00
19	UPCL	0.00	0.00	0.00	0.00	0.00
20	J&K	0.00	0.00	0.00	0.00	0.00
21	MPPTCL	0.00	0.00	0.00	0.00	0.00
22	TRADERS	0.00	0.00	0.00	0.00	0.00
23	TATA	-77.04	0.00	-77.04	-26.35	342.00
24	J & K (Thro. PTC)	0.00	0.00	0.00	0.00	0.00
25	JSW	-89.15	0.00	-89.15	-30.49	342.00
26	PTC	-29.27	0.00	-29.27	-10.01	342.00
27	Mittal	0.00	0.00	0.00	0.00	0.00
28	Shree Cement Ltd.	0.00	0.00	0.00	0.00	0.00
29	Knowledge Infrastructure	0.00	0.00	0.00	0.00	0.00
30	**Total Banking Sale**	-195.46	0.00	-195.46	-66.85	342.00
31	**Banking (NET)**	0.00	0.00	0.00	0.00	0.00
32	HPSEB	588.30	0.00	575.09	201.20	342.00
33	RPPC	0.00	0.00	0.00	0.00	0.00
34	UPCL	0.00	0.00	0.00	0.00	0.00
35	J&K	36.45	0.00	35.63	12.47	342.00
36	MPPTCL	123.55	0.00	120.78	42.25	342.00
37	TRADERS	0.00	0.00	0.00	0.00	0.00
38	TATA	-77.04	0.00	-77.04	-26.35	342.00
39	J & K (Thro. PTC)	113.32	0.00	110.78	38.76	342.00
40	JSW	-89.15	0.00	-89.15	-30.49	342.00
41	PTC	15.73	0.00	14.72	5.38	0.00
42	Mittal	8.82	0.00	8.62	3.02	0.00
43	Shree Cement Ltd.	0.00	0.00	0.00	0.00	0.00
44	Knowledge Infrastructure	0.00	0.00	0.00	0.00	0.00
45	**Net Banking Total**	719.98	2.86	699.43	246.23	342.00

PUNJAB STATE POWER CORPORTION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
POWER PURCHASE COST YEAR 2014-15 R2 (Proj.)
Format 7C

Sr. No.	Source	Purchase (MU)	External losses (%)	Energy reqd. by PSPCL (MU)	AFC (Rs. Crs.)	PSPCL entitlement as per provisional REA of September' 2014(%)	VC (Ps/Unit)	FC (Rs. Crs.)	VC (Rs. Crs.)	Others (Rs. Crs.)	Total (Rs. Crs.) (9+10+11)
1	2	3	4	5	6	7	8	9	10	11	12
1	NTPC										
2	Anta (G/F)	0.00	3.48	0.00	211.72	14.67	260.60	15.53	0.00	0.00	15.53
3	Anta (R/F)	0.00	3.48	0.00	0.00	0.00	940.80	0.00	0.00	0.00	0.00
4	Anta (L/F)	0.00	3.48	0.00	0.00	0.00	815.20	0.00	0.00	0.00	0.00
5	Auraiya (G/F)	0.00	3.48	0.00	253.18	14.59	316.40	18.46	0.00	0.00	18.46
6	Auraiya (R/F)	0.00	3.48	0.00	0.00	0.00	1156.30	0.00	0.00	0.00	0.00
7	Auraiya (L/F)	0.00	3.48	0.00	0.00	0.00	1038.30	0.00	0.00	0.00	0.00
8	Dadri Gas (G/F)	0.00	3.48	0.00	324.57	17.29	310.50	28.06	0.00	0.00	28.06
9	Dadri Gas (R/F)	0.00	3.48	0.00	0.00	0.00	1137.50	0.00	0.00	0.00	0.00
10	Dadri Gas (L/F)	0.00	3.48	0.00	0.00	0.00	792.80	0.00	0.00	0.00	0.00
11	Singrauli	804.43	3.48	776.44	743.24	11.37	125.30	42.26	100.80	0.00	143.05
12	Rihand-I	383.50	3.48	370.15	560.64	12.36	160.20	32.22	61.44	0.00	93.66
13	Rihand-II	379.74	3.48	366.53	650.50	11.68	167.00	38.00	63.42	0.00	101.42
14	Rihand-III	216.57	3.48	209.03	908.85	9.10	168.80	41.68	36.56	0.00	78.24
15	Unchahar-I	0.00	3.48	0.00	250.07	15.93	250.10	11.37	0.00	0.00	11.37
16	Unchahar-II	120.00	3.48	115.82	258.60	9.72	243.80	20.59	29.26	0.00	49.85
17	Unchahar-III	35.00	3.48	33.78	198.12	15.93	244.30	9.62	8.55	0.00	18.18
18	Farakka (ER)	0.00	3.48	0.00	941.58	1.39	315.60	6.08	0.00	0.00	6.08
19	Kahalgaon-I (ER)	0.00	3.48	0.00	552.84	6.07	268.70	16.78	0.00	0.00	16.78
20	Kahalgaon-II (ER)	0.00	3.48	0.00	1261.55	8.02	253.70	46.69	0.00	0.00	46.69
21	NCTPS- 2C (DADRI II)	0.00	3.48	0.00	1089.22	1.53	343.80	8.30	0.00	0.00	8.30
22	IGSTPS Jhajjar (NTPC JV)	0.00	3.48	0.00	1625.00	1.51	399.80	10.98	0.00	0.00	10.98
23	NHPC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	Baitarani	87.12	3.48	84.09	104.79	46.50	77.20	13.73	6.73	0.00	20.45
25	Salal	221.52	3.48	213.81	257.36	26.60	48.35	29.41	10.71	23.48	63.60
26	Tanakpur	21.74	3.48	20.98	90.76	17.93	115.20	5.24	2.50	0.00	7.74
27	Chamera-I	52.91	3.48	51.07	291.05	10.20	90.00	9.43	4.76	0.00	14.19
28	Chamera-II	37.77	3.48	36.46	357.33	14.60	147.80	15.53	5.58	0.00	21.12
29	Uri	121.87	3.48	117.63	362.14	13.75	80.04	19.36	9.75	5.48	34.60
30	Dauli Ganga	19.07	3.48	18.41	286.70	13.83	145.30	5.28	2.77	0.00	8.05
31	Dulhasti	59.50	3.48	57.43	1020.99	12.11	307.41	34.94	18.29	2.92	56.15
32	Sewa-II	16.86	3.48	16.27	198.90	12.16	234.31	7.83	3.95	0.30	12.08
33	Chamera-III	11.06	3.48	10.68	351.62	11.69	219.80	12.94	2.43	0.00	15.37
34	Uri-II	34.75	3.48	33.54	338.75	11.97	175.34	18.83	6.09	2.97	27.89
35	Parbati-III	21.13	3.48	20.39	382.95	11.69	317.60	8.43	6.71	0.00	15.14
36	Koldam	3.96	3.48	3.82	0.00	13.88	447.50	0.00	1.77	0.00	1.77
37	NPCIL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
38	NAPP	167.29	3.48	161.47	0.00	14.48	248.62	0.00	41.59	0.00	41.59
39	RAPP B-(3 & 4)	439.51	3.48	424.22	0.00	14.61	270.90	0.00	119.06	0.00	119.06
40	RAPP C-(5 & 6)	228.83	3.48	220.87	0.00	15.24	343.46	0.00	78.59	0.00	78.59
41	OTHER SOURCES (Central Sector)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
42	Nathpa Jhakri HEP (SJVNL)	181.18	3.48	174.87	1652.60	14.41	143.70	64.00	26.04	18.85	108.89
43	Rampur HEP (SJVNL)	56.15	3.48	54.20	0.00	7.96	394.00	0.00	47.48	0.00	47.48
44	Tehri HEP (THDC)	112.94	3.48	109.01	1116.48	10.23	229.60	28.46	25.93	5.94	60.33
45	Koteshwer HEP (THDC)	36.78	3.48	35.50	393.33	8.89	195.50	10.97	7.19	0.00	18.16
46	Durgapur TPS (DVC)	316.00	3.48	305.00	1360.55	20.00	233.00	112.28	73.63	0.00	185.90
47	TRADERS (Short Term Power)	0.00	3.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
48	Open Access Chgs. of Traders for short term power	0.00	3.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
49	TRADERS/IPPs (Long Term Power)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	Tala HEP (PTC)	19.92	3.48	19.23	0.00	2.94	202.00	0.00	4.02	0.00	4.02
51	Pragati-III Gas Plant Bawana (PPCL)	0.00	3.48	0.00	1187.39	10.00	307.97	59.37	0.00	0.00	59.37
52	Mundra UMPP (CGPL)	1365.00	3.48	1336.80	0.00	12.50	145.30	135.73	201.24	0.00	336.97
53	Malana-II HEP (PTC)	21.47	3.48	20.72	0.00	100.00	363.00	0.00	7.79	0.00	7.79
54	NVVNL Bundled Power (NTPC Thermal Power + Solar power)	96.13	3.48	92.78	0.00	0.00	492.48	0.00	47.34	0.00	47.34
55	Sasan UMPP (RPL)	1473.71	3.48	1422.42	0.00	0.00	57.66	19.04	84.97	0.00	104.01
56	Talwandi Sabo TPS (Sterlite)	897.48	0.00	897.48	0.00	100.00	211.81	205.00	190.10	0.00	395.10
57	NPL Rajpura TPS (L & T)	906.48	0.00	906.48	0.00	100.00	247.96	709.91	224.77	0.00	934.68
58	Long Term NRSE Purchase within Punjab	565.28	0.00	565.28	0.00	0.00	521.94	0.00	295.56	0.00	295.56
59	Short Term NRSE Purchase within Punjab	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	Net Banking with HPSEB,UPCL,J & K & thro. Traders	-1752.43	0.00	-1752.43	0.00	0.00	342.00	0.00	-599.33	0.00	-599.33
61	Open Access Chgs. of Banking	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.03	0.00	21.03
62	UI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
63	Reactive Charges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
64	Other Charges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	PGCIL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	427.15	0.00	427.15
66	Purchase of RECs for FY 2014-15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.00	0.00	98.00
67	Mercadoz	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
68	Total Power purchase	7801.22	3.20	7551.24	0.00	0.00	231.28	1872.35	1804.24	59.94	3736.53
69	Previous Payments made during 2014-15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70	Grand Total Power purchase (2014-15)	7801.22	3.20	7551.24		0.00	231.28	1872.35	1804.24	59.94	3736.53

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2014-15
Net banking data for 2014-15 H2 (Proj.)
Format 7C Annex

Sl.No	Particulars	Gross Energy (Mus)	% LOSSES	Net Energy (Mus)	AMOUNT (Rs. Crs.)	Rate (Pc/Unit)
1	**Banking (Purchase)**					
2	HPSEB		3.48	0.00		
3	RPPC		3.48	0.00		
4	UPCL		3.48	0.00		
5	J&K		3.48	0.00		
6	MPPTCL		3.48	0.00		
7	TRADERS		3.48	0.00		
8	TATA		3.48	0.00		
9	J & K (Thro. PTC)		3.48	0.00		
10	JSW		3.48	0.00		
11	PTC		3.48	0.00		
12	Mittal		3.48	0.00		
13	Shree Cement Ltd.		3.48	0.00		
14	Knowledge Infrastructure		3.48	0.00		
15	**Total Banking Purchase**		0.00	0.00		
16	**Banking (Sale)**		0.00	0.00		
17	HPSEB	-848.40	0.00	-848.40	-290.15	0.00
18	RPPC	0.00	0.00	0.00	0.00	0.00
19	UPCL	0.00	0.00	0.00	0.00	0.00
20	J&K	-247.90	0.00	-247.90	-84.78	342.00
21	MPPTCL	-129.68	0.00	-129.68	-44.35	0.00
22	TRADERS	0.00	0.00	0.00	0.00	0.00
23	TATA	0.00	0.00	0.00	0.00	0.00
24	J & K (Thro. PTC)	0.00	0.00	0.00	0.00	0.00
25	JSW	-517.00	0.00	-517.00	-176.81	342.00
26	PTC	-9.45	0.00	-9.45	-3.23	0.00
27	Mittal	0.00	0.00	0.00	0.00	0.00
28	Shree Cement Ltd.	0.00	0.00	0.00	0.00	0.00
29	Knowledge Infrastructure	0.00	0.00	0.00	0.00	0.00
30	**Total Banking Sale**	-1752.43	0.00	-1752.43	-599.33	342.00
31	**Banking (NET)**	0.00	0.00	0.00	0.00	0.00
32	HPSEB	-848.40	0.00	-848.40	-290.15	342.00
33	RPPC	0.00	0.00	0.00	0.00	0.00
34	UPCL	0.00	0.00	0.00	0.00	0.00
35	J&K	-247.90	0.00	-247.90	-84.78	342.00
36	MPPTCL	-129.68	0.00	-129.68	-44.35	342.00
37	TRADERS	0.00	0.00	0.00	0.00	0.00
38	TATA	0.00	0.00	0.00	0.00	0.00
39	J & K (Thro. PTC)	0.00	0.00	0.00	0.00	0.00
40	JSW	-517.00	0.00	-517.00	-176.81	342.00
41	PTC	-9.45	0.00	-9.45	-3.23	0.00
42	Mittal	0.00	0.00	0.00	0.00	0.00
43	Shree Cement Ltd.	0.00	0.00	0.00	0.00	0.00
44	Knowledge Infrastructure	0.00	0.00	0.00	0.00	0.00
45	**Net Banking Total**	-1752.43	0.00	-1752.43	-599.33	342.00

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
POWER PURCHASE COST FOR YEAR 2014-15 (RE)
Format 7D

Sl. No.	Source	Purchase (MU)	External losses (%)	Energy recd. by PSPCL (MU)	AFC (Rs. Crs.)	PSPCL entitlement as per provisional REA of Sept.2014 (%)	VC (Ps/Unit)	FC (Rs. Crs.)	VC (Rs. Crs.)	Others (Rs. Crs.)	Total (Rs. Crs.) (9+10+11)
1	2	3	4	5	6	7	8	9	10	11	12
1	NTPC										
2	Anta (G/F)	125.95	0.00	123.12	423.23	15.75	259.87	31.07	32.73	0.03	63.83
3	Anta (R/F)	2.17	0.00	2.12	0.00	0.00	922.38	0.00	2.00	0.00	2.00
4	Anta (L/F)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Auraiya (G/F)	89.29	0.00	87.28	595.56	15.33	315.67	36.93	28.35	0.04	65.15
6	Auraiya (R/F)	6.29	0.00	6.11	0.00	0.00	1118.27	0.00	6.99	0.00	6.99
7	Auraiya (L/F)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Dadri Gas (G/F)	162.23	0.00	158.59	649.14	17.79	315.69	56.12	51.21	0.06	107.39
9	Dadri Gas (R/F)	8.09	0.00	7.90	0.00	0.00	1100.70	0.00	8.90	0.00	8.90
10	Dadri Gas (L/F)	0.00	0.00	0.00	0.00	0.00	799.90	0.00	0.00	0.00	0.00
11	Singrauli	1585.91	0.00	1540.37	1436.48	12.74	122.40	84.51	154.12	0.28	278.92
12	Rihand-I	763.42	0.00	741.54	1121.27	13.72	161.53	64.44	123.31	0.17	187.93
13	Rihand-II	799.12	0.00	776.49	1301.60	12.91	166.06	76.00	132.70	0.07	208.77
14	Rihand-III	529.70	0.00	515.13	1817.77	11.00	165.35	83.36	88.12	0.04	171.52
15	Unchahar-I	143.96	0.00	140.73	500.14	9.44	293.11	22.75	42.20	0.19	65.13
16	Unchahar-II	392.74	0.00	382.44	517.21	17.02	268.45	41.19	106.96	0.35	148.50
17	Unchahar-III	134.93	0.00	131.47	396.25	10.80	271.76	19.25	37.14	0.51	56.89
18	Farakka (ER)	65.93	0.00	64.43	1883.10	1.39	314.86	12.17	20.75	0.03	32.95
19	Kahalgaon-I (ER)	151.54	0.00	148.14	1105.65	6.07	267.21	33.56	40.49	0.04	74.09
20	Kahalgaon-II (ER)	345.59	0.00	337.83	2523.10	8.02	250.17	93.38	86.46	0.07	179.90
21	NCTPS- 2C (DADRI II)	113.03	0.00	110.50	2178.24	2.74	338.25	16.59	38.23	0.01	54.83
22	IGSTPS Jhajjar (NTPC JV)	125.36	0.00	122.54	3250.01	2.05	391.83	21.96	49.12	9.60	80.68
23	NHPC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	Bairasiul	337.34	0.00	328.69	209.58	46.50	83.72	27.45	28.24	0.14	55.83
25	Salal	890.20	0.00	867.47	514.71	26.60	48.01	58.82	42.74	94.53	196.09
26	Tanakpur	53.72	0.00	52.25	181.51	17.93	115.20	10.47	6.19	0.03	16.70
27	Chamera-I	248.62	0.00	242.38	582.10	10.20	97.15	18.86	24.16	0.07	43.03
28	Chamera-II	191.19	0.00	186.43	714.66	14.86	147.80	31.07	28.26	0.02	59.34
29	Uri	387.31	0.00	377.11	724.28	13.75	80.36	38.73	31.12	17.48	87.33
30	Dauli Ganga	84.53	0.00	82.40	573.41	14.05	145.30	10.57	12.28	0.05	22.90
31	Dulhasti	222.83	0.00	217.09	2041.99	12.33	307.77	69.88	68.58	10.92	149.38
32	Sewa-II	58.55	0.00	57.02	397.81	12.38	234.02	15.66	13.70	1.08	30.44
33	Chamera-III	98.99	0.00	96.63	703.25	11.90	219.80	25.88	21.76	0.01	47.65
34	Uri-II	137.78	0.00	134.26	677.50	8.45	180.06	37.66	24.81	11.78	74.25
35	Parbati-III	85.00	0.00	83.71	765.89	0.00	317.60	16.85	27.28	-0.01	44.12
36	Koldam	3.96	0.00	3.82	0.00	0.00	447.50	0.00	1.77	0.00	1.77
37	NPCIL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
38	NAPP	323.48	0.00	314.16	0.00	15.52	248.63	0.00	80.43	0.00	80.43
39	RAPP-3 &4	833.85	0.00	809.70	0.00	24.61	274.22	0.00	228.66	0.06	228.72
40	RAPP-5 & 6	422.89	0.00	410.56	0.00	16.97	343.47	0.00	145.25	0.03	145.28
41	OTHER SOURCES (Central Sector)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
42	Nathpa Jhakri HEP (SJVNL)	827.08	0.00	866.27	3305.20	12.81	139.54	128.00	115.41	22.24	265.65
43	Rampur HEP (SJVNL)	120.51	0.00	117.11	0.00	0.00	447.50	0.00	47.48	0.00	47.48
44	Tehri HEP (THDC)	277.91	0.00	270.27	2232.96	10.37	229.37	56.92	63.74	11.87	133.54
45	Koteshwer HEP (THDC)	97.22	0.00	94.58	786.67	9.03	196.68	21.94	19.12	0.03	41.09
46	Durgapur TPS (DVC)	795.09	0.00	773.34	2761.10	20.00	238.88	224.55	190.40	0.00	414.96
47	TRADERS (Short Term Power)	3399.49	0.00	3323.15	0.00	0.00	384.31	0.00	1305.46	0.00	1305.46
48	Open Access Chgs. of Traders for short term power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.47	24.47
49	TRADERS/IPPs (Long Term Power)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	Tala HEP (PTC)	59.09	0.00	56.62	0.00	0.00	202.90	0.00	20.02	0.00	20.02
51	Pragati-III Gas Plant Bawana (PPCL)	90.41	0.00	88.38	2374.78	10.00	306.43	118.74	27.70	0.00	146.44
52	Mundra UMPP (CGPL)	2799.37	0.00	2719.41	0.00	12.50	144.80	271.47	405.35	0.15	676.97
53	Malana-II HEP (PTC)	223.78	0.00	218.49	0.00	100.00	363.00	0.00	81.23	0.23	81.46
54	NVVNL Bundled Power (NTPC Thermal Power + Solar power)	213.63	0.00	207.64	0.00	0.00	492.48	0.00	105.21	0.00	105.21
55	Sasan UMPP (RPL)	2541.75	0.00	2466.48	0.00	0.00	57.66	32.65	145.55	0.12	179.33
56	Talwandi Sabo TPS (Sterlite)	1057.74	0.00	1057.74	0.00	0.00	211.69	205.21	223.89	0.00	429.10
57	NPL Rajpura TPS (L & T)	3502.38	0.00	3502.38	0.00	0.00	237.26	1055.94	824.00	0.00	1879.94
58	Long Term NRSE Purchase within Punjab	847.77	0.00	847.77	0.00	0.00	521.94	0.00	442.49	0.00	442.49
59	Short Term NRSE Purchase within Punjab	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	Net Banking with HPSEB,UPCL,J & K & thro. Traders	-1032.45	0.00	-1053.00	0.00	0.00	342.00	0.00	-353.10	0.00	-353.10
61	Open Access Chgs. of Banking	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.03	0.09	21.12
62	UI	134.89	0.00	134.89	0.00	0.00	1526.33	0.00	205.89	0.00	205.89
63	Reactive Charges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.66	0.00	2.66
64	Other Charges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	PGCIL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	854.31	0.00	854.31
66	Purchase of RECs for FY 2014-15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.00	0.00	98.00
67	Mercadot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.23
68	Total Power purchase	25922.01	0.00	25331.95	0.00	0.00	259.88	3170.59	6722.62	206.99	10100.22
69	Previous Payments made during 2014-15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	279.31
70	Grand Total Power purchase (2014-15)	25922.01	2.28	25332	0.00	0.00	259.34	3170.59	6722.67	206.99	10379.52

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2014-15
Net banking data for 2014-15 (RE)
Format 7D Annex

Sl.No	Particulars	Gross Energy (Mus)	% LOSSES	Net Energy (Mus)	AMOUNT (Rs. Crs.)	Rate (Pc/Unit)
1	2	3	4	5	6	7
1	**Banking (Purchase)**					
2	HPSEB	588.30	0.00	575.09	201.20	342.00
3	RPPC	0.00	0.00	0.00	0.00	0.00
4	UPCL	0.00	0.00	0.00	0.00	0.00
5	J&K	36.45	0.00	35.63	12.47	342.00
6	MPPTCL	123.55	0.00	120.78	42.25	342.00
7	TRADERS	0.00	0.00	0.00	0.00	0.00
8	TATA	0.00	0.00	0.00	0.00	0.00
9	J & K (Thro. PTC)	113.32	0.00	110.78	38.76	0.00
10	JSW	0.00	0.00	0.00	0.00	0.00
11	PTC	45.00	0.00	43.99	15.39	0.00
12	Mittal	8.82	0.00	8.62	3.02	0.00
13	Shree Cement Ltd.	0.00	0.00	0.00	0.00	0.00
14	Knowledge Infrastructure	0.00	0.00	0.00	0.00	0.00
15	**Total Banking Purchase**	915.44	0.00	2536.89	313.08	342.00
16	**Banking (Sale)**	0.00	0.00	0.00	0.00	0.00
17	HPSEB	-848.40	0.00	-848.40	-290.15	0.00
18	RPPC	0.00	0.00	0.00	0.00	0.00
19	UPCL	0.00	0.00	0.00	0.00	0.00
20	J&K	-247.90	0.00	-247.90	-84.78	342.00
21	MPPTCL	-129.68	0.00	-129.68	-44.35	0.00
22	TRADERS	0.00	0.00	0.00	0.00	0.00
23	TATA	-77.04	0.00	-77.04	-26.35	342.00
24	J & K (Thro. PTC)	0.00	0.00	0.00	0.00	0.00
25	JSW	-606.15	0.00	-606.15	-207.30	342.00
26	PTC	-38.72	0.00	-38.72	-13.24	0.00
27	Mittal	0.00	0.00	0.00	0.00	0.00
28	Shree Cement Ltd.	0.00	0.00	0.00	0.00	0.00
29	Knowledge Infrastructure	0.00	0.00	0.00	0.00	0.00
30	**Total Banking Sale**	-1947.89	0.00	-1947.89	-666.18	342.00
31	**Banking (NET)**	0.00	0.00	0.00	0.00	0.00
32	HPSEB	-260.10	0.00	-273.31	-88.95	342.00
33	RPPC	0.00	0.00	0.00	0.00	0.00
34	UPCL	0.00	0.00	0.00	0.00	0.00
35	J&K	-211.45	0.00	-212.27	-72.32	342.00
36	MPPTCL	-6.13	0.00	-8.90	-2.10	342.00
37	TRADERS	0.00	0.00	0.00	0.00	0.00
38	TATA	-77.04	0.00	-77.04	-26.35	342.00
39	J & K (Thro. PTC)	113.32	0.00	110.78	38.76	342.00
40	JSW	-606.15	0.00	-606.15	-207.30	342.00
41	PTC	6.28	0.00	5.27	2.15	0.00
42	Mittal	8.82	0.00	8.62	3.02	0.00
43	Shree Cement Ltd.	0.00	0.00	0.00	0.00	0.00
44	Knowledge Infrastructure	0.00	0.00	0.00	0.00	0.00
45	**Net Banking Total**	-1032.45	0.00	-1053.00	-353.10	342.00

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
POWER PURCHASE COST FOR YEAR 2015-16 (Proj.)

Format 7E

Sr. No.	Source	Purchase (MU)	External losses (%)	Energy recd. by PSPCL (MU)	AFC (Rs. Crs.)	PSPCL cummulative entitlement as per 3 years average cap. share(%)	VC (Ps/kWh)	FC (Rs. Crs.)	VC (Rs. Crs.)	Others (Rs. Crs.)	Total (Rs. Crs.) (9+10+11)
1	2	3	4	5	6	7	8	9	10	11	12
1	NTPC										
2	Anta (G/F)	0.00	3.07	0.00	221.72	13.55	273.63	28.69	0.00	0.00	28.69
3	Anta (R/F)	0.00	3.07	0.00	0.00	0.00	987.84	0.00	0.00	0.00	0.00
4	Anta (L/F)	0.00	3.07	0.00	0.00	0.00	855.96	0.00	0.00	0.00	0.00
5	Auraiya (G/F)	0.00	3.07	0.00	253.18	13.81	337.27	34.96	0.00	0.00	34.96
6	Auraiya (R/F)	0.00	3.07	0.00	0.00	0.00	1214.12	0.00	0.00	0.00	0.00
7	Auraiya (L/F)	0.00	3.07	0.00	0.00	0.00	1050.22	0.00	0.00	0.00	0.00
8	Dadri Gas (G/F)	0.00	3.07	0.00	357.24	16.77	326.03	59.50	0.00	0.00	59.50
9	Dadri Gas (R/F)	0.00	3.07	0.00	0.00	0.00	1194.33	0.00	0.00	0.00	0.00
10	Dadri Gas (L/F)	0.00	3.07	0.00	0.00	0.00	832.44	0.00	0.00	0.00	0.00
11	Singrauli	1621.48	3.07	1571.63	743.24	11.46	131.29	85.15	212.89	0.00	298.04
12	Rihand-I	796.48	3.07	771.99	560.64	12.45	168.21	69.78	133.96	0.00	203.75
13	Rihand-II	701.00	3.07	679.45	650.90	11.57	175.35	75.98	122.92	0.00	198.90
14	Rihand-III	397.00	3.07	384.80	508.89	9.32	177.24	84.68	70.36	0.00	155.05
15	Unchahar-I	0.00	3.07	0.00	250.07	9.04	262.61	22.60	0.00	0.00	22.60
16	Unchahar-II	203.00	3.07	196.76	258.60	15.77	255.99	40.78	51.97	0.00	92.74
17	Unchahar-III	63.00	3.07	61.06	198.12	9.56	256.52	18.94	16.16	0.00	35.10
18	Farakka (ER)	0.00	3.07	0.00	941.58	1.39	331.38	13.09	0.00	0.00	13.09
19	Kahalgaon-I (ER)	0.00	3.07	0.00	552.84	6.07	282.14	33.56	0.00	0.00	33.56
20	Kahalgaon-II (ER)	0.00	3.07	0.00	1261.55	8.02	266.39	101.18	0.00	0.00	101.18
21	NCTPS- 2C (DADRI II)	0.00	3.07	0.00	1089.12	0.89	360.99	9.73	0.00	0.00	9.73
22	IGSTPS Jhajjar (NTPC JV)	0.00	3.07	0.00	1625.00	0.65	419.06	10.55	0.00	0.00	10.55
23	Koldam HEP	400.08	3.07	387.78	0.00	13.88	469.88	0.00	187.99	0.00	187.99
24	NHPC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	Bairasuil	321.86	3.07	311.97	104.79	46.50	77.20	29.38	24.85	0.00	54.23
26	Salal	879.96	3.07	852.91	257.36	26.60	48.35	42.60	42.55	93.28	178.42
27	Tanakpur	59.62	3.07	57.79	90.76	17.93	115.20	8.75	6.87	0.00	15.62
28	Chamera-I	247.26	3.07	239.66	291.05	10.20	90.00	17.64	22.25	0.00	39.90
29	Chamera-II	184.70	3.07	179.02	357.33	12.21	147.80	26.72	27.30	0.00	54.03
30	Chamera-III	87.13	3.07	84.45	351.62	9.81	219.80	21.36	19.15	0.00	40.51
31	Uri	380.40	3.07	368.71	362.14	13.75	80.04	30.95	30.45	17.12	78.51
32	Dauli Ganga	83.08	3.07	80.53	286.70	11.86	145.30	14.93	12.07	0.00	27.00
33	Dulhasti	219.31	3.07	212.57	1020.99	10.14	307.41	60.05	67.42	10.75	138.21
34	Sewa-II	52.23	3.07	50.62	198.90	10.19	234.31	12.08	12.24	0.94	25.26
35	Uri-II	91.39	3.07	88.58	338.75	8.45	175.34	23.23	16.02	7.80	47.06
36	Parbati-III	180.41	3.07	174.86	382.95	10.67	317.60	18.37	57.30	0.00	75.67
37	NPCIL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
38	NAPP	326.07	3.07	316.05	0.00	0.00	261.05	0.00	85.12	0.00	85.12
39	RAPP-3 &4	807.84	3.07	783.00	0.00	0.00	291.80	0.00	235.72	0.00	235.72
40	RAPP-5 & 6	449.83	3.07	436.00	0.00	0.00	360.63	0.00	162.22	0.00	162.22
41	OTHER SOURCES (Central Sector)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
42	Nathpa Jhakri HEP (SJVNL)	821.94	3.07	796.67	1652.60	11.36	143.70	124.85	118.11	21.84	264.80
43	Rampur HEP (SJVNL)	107.91	3.07	104.59	0.00	0.00	394.00	0.00	42.52	0.00	42.52
44	Tehri HEP (THDC)	322.76	3.07	312.84	1116.48	8.93	229.60	62.42	74.11	12.70	149.22
45	Koteshwer HEP (THDC)	103.72	3.07	100.53	393.33	7.59	195.50	19.71	20.28	0.00	39.99
46	Durgapur TPS (DVC)	607.00	3.07	588.34	1380.55	20.00	244.65	276.11	148.50	0.00	424.61
47	TRADERS (Short Term Power)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
48	Open Access Chgs. of Traders for short term power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
49	TRADERS/IPPs (Long Term Power)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	Tala HEP (PTC)	98.25	3.07	95.23	0.00	0.00	202.00	0.00	19.85	0.00	19.85
51	Mallana-II HEP (PTC)	231.59	3.07	224.47	0.00	100.00	363.00	0.00	84.07	0.00	84.07
52	Pragati-III Gas Plant Bawana (PPCL)	0.00	3.07	0.00	1187.39	10.00	323.37	118.74	0.00	0.00	118.74
53	Mundra UMPP (CGPL)	2817.48	3.07	2730.86	0.00	12.50	152.57	301.12	429.85	0.00	730.97
54	Sasan UMPP (RPL)	3130.48	3.07	3034.24	0.00	15.00	114.80	45.48	359.38	0.00	404.86
55	NVVNL Bundled Power (NTPC Thermal Power + Solar power)	212.75	3.07	206.21	0.00	0.00	517.10	0.00	110.01	0.00	110.01
56	Talwandi Sabo TPS (Sterlite)	6502.48	0.00	6502.48	0.00	0.00	222.40	1136.00	1446.15	0.00	2582.15
57	NPL Rajpura TPS (L & T)	1287.48	0.00	1287.48	0.00	0.00	260.36	1338.38	335.21	0.00	1673.00
58	GVK TPS	761.00	0.00	761.00	0.00	0.00	253.00	295.00	192.53	0.00	487.53
59	Long Term NRSE Purchase within Punjab	1360.35	0.00	1360.35	0.00	0.00	544.85	0.00	741.18	0.00	741.18
60	Short Term NRSE Purchase within Punjab	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
61	Net Banking with HPSEB,UPCL,J & K & thro. Traders	-0.66	0.00	-81.58	0.00	0.00	342.00	0.00	-0.23	0.00	-0.23
62	Open Access Chgs. of Banking								61.18	0.00	61.18
63	UI								0.00	0.00	0.00
64	Reactive Charges								0.00	0.00	0.00
65	Other Charges								0.00	0.00	0.00
66	PGCIL								810.38	0.00	810.38
67	Purchase of RECs for FY 2014-15								0.00	0.00	0.00
68	Total Power purchase	26917.66	2.24	26314	0.00	0.00	245.60	4713.42	6610.87	164.42	11488.12

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2014-15
Net banking data for 2015-16 (Proj.)
Format 7E Annex

Sl.No	Particulars	Gross Energy (Mus)	% LOSSES	Net Energy (Mus)	AMOUNT (Rs. Crs.)	Rate (Pc/Unit)
1						
1	Banking (IMPORT)					
2	Total Banking import	2184.56	3.70	2103.64	747.12	342
3	Banking (EXPORT)					
4	Total Banking export	-2185.22	0.00	-2185.22	-747.35	342
5	Net Banking (Import-Export)					
6	Net Banking Total	-0.66	0.00	-81.58	-0.23	342

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Employee Cost
Format 8

Rs. Crore

Sr. No.	Category of Consumer	FY 2012-13	FY 2013-14	FY 2014-15			FY 2015-16
		Actual	Provisional	H1	H2	Total (RE)	Proj
1	2	3	4	5	6	7	8
	Salaries & Allowances						
1	Basic Pay	1147.11	1112.78	556.14	574.59	1130.73	1136.38
2	Overtime	10.40	9.01	4.10	5.90	10.00	10.00
3	Dearness Allowance	756.27	827.07	490.55	701.80	1192.35	1321.52
4	Fixed medical Allowance	30.28	27.56	12.85	13.67	26.52	25.47
5	Conveyance Allowance	38.41	35.39	16.65	19.35	36.00	35.00
6	Other Allowances	162.25	176.77	83.01	86.99	170.00	172.00
7	Bonus/ Generation Incentive	83.41	49.45	24.12	25.88	50.00	50.00
8	Medical Expenses Reimbursement	14.76	16.56	8.06	9.94	18.00	20.00
9	**Total**	**2242.89**	**2254.59**	**1195.48**	**1438.12**	**2633.60**	**2770.36**
	Terminal Benefits						
10	Earned Leave Encashment	141.34	136.61	82.81	62.19	145.00	152.00
11	Gratuity (including arrear)	211.50	236.15	109.05	140.95	250.00	262.00
12	Commutation of Pension/ progressive funding for terminal benefit as per FRP	0.00	0.00	0.00	0.00	0.00	0.00
13	Workman's compensation	0.25	0.07	0.04	0.06	0.10	0.10
14	Arrear of Pay	210.07	187.13	0.00	0.00	0.00	0.00
15	Ex-gratia	0.00	0.00	0.00	0.00	0.00	0.00
16	Fringe Benefit Tax	0.00	0.00	0.00	0.00	0.00	0.00
17	Progressive Funding of Terminal Benefits as per FRP	0.00	0.00	0.00	0.00	0.00	830.50
18	**Total**	**563.16**	**559.96**	**191.90**	**203.20**	**395.10**	**1244.60**
	Pension Payments	0.00	0.00	0.00	0.00	0.00	0.00
19	Basic Pension	0.00	0.00	0.00	0.00	0.00	0.00
20	Dearness pension	886.98	1012.57	635.93	557.25	1193.18	1272.27
21	Dearness Allowance	0.00	0.00	0.00	0.00	0.00	0.00
22	Any other expense	102.98	104.65	53.83	61.70	115.53	126.05
23	**Total**	**989.96**	**1117.22**	**689.76**	**618.95**	**1308.71**	**1398.32**
24	**Total Expenses**	**3796.01**	**3931.77**	**2077.14**	**2260.27**	**4337.41**	**5413.28**
25	Less: Amount capitalised	111.23	136.91	6.68	133.32	140.00	170.00
26	**Net amount**	3684.78	3794.86	2070.46	2126.95	4197.41	5243.28
27	Prior Period*	0.00	0.00	0.00	0.00	0.00	0.00
28	Add: BBMB share	183.62	205.48	116.69	109.34	226.03	237.33
29	**Net Employee's Cost**	**3868.40**	**4000.34**	**2187.15**	**2236.29**	**4423.44**	**5480.61**

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Total Number of PSPCL Employees

Format 9

Sr. No.	Particulars	FY 2012-13 Actual	FY 2013-14 (Prov.)	FY 2014-15 (RE)	FY 2015-16 (Proj.)
1	2	3	4	5	6
1	Number of employees with PSPCL as on 1st April	52142	48269	44636	40613
2	Number of employees posted with BBMB as on 1st April	605	521	500	520
3	PSPCL employees on deputation/ foreign service as on 1st April	22	25	23	24
4	**Total number of employees (1+2+3)**	**52769**	**48815**	**45159**	**41157**
5	Number of employees retired/retiring during the year	4810	4063	4023	3888
6	**Number of employees at the end of the year (4-5)**	**47959**	**44752**	**41136**	**37269**
7	Number/share of employees required to be posted with BBMB as per agreement	1565	1565	1565	1565

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Employees Productivity Parameters
Format 10

Sr. No.	Particulars	FY 2012-13 (Actual)	FY 2013-14 (Prov.)	FY 2014-15 (RE)	FY 2015-16 (Proj.)
1	2	3	4	5	6
1	Number of consumers in million	7.89	8.11	8.39	8.67
2	Connected load in KW	29736977	30779847	32802184	34354367
3	Line circuit in KM	375435	386698	409900	446791
4	Energy sold in MU	36649.91	37824	41041	43466
5	No. of Employees	47959	44752	41136	37269
6	Employees per unit of energy sold	1.31	1.18	1.00	0.86
7	Employees per 1000 consumers	6.08	5.52	4.90	4.30
8	Share of employees cost in total costs	18.74%	17.82%	17.52%	19.11%
9	Employees cost in paise/ kwh of energy sold	0.11	0.11	0.11	0.13
10	Line circuit KM per employee	7.83	8.64	9.96	11.99

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Value of Assets and Depreciation Charges
Format 11

Sr. No.	Particulars	Assets value at the beginning of the year	Rate of depreciation	Depreciation charges	Accumulated depreciation
1	2	3	4	5	6
	(i)Thermal				
1	Land and land rights				
2	Buildings				
3	Hydraulic works				
4	Other civil works				
5	Plant and machinery				
6	Lines and cable network				
7	Vehicles				
8	Furniture and fixtures				
9	Office equipment				
10	**Total**				
	(ii) Hydel				
1	Land and land rights				
2	Buildings				
3	Hydraulic works				
4	Other civil works				
5	Plant and machinery				
6	Lines and cable network				
7	Vehicles				
8	Furniture and fixtures				
9	Office equipment				
10	**Total**				
	(iii) Internal combustion				
1	Land and land rights				
2	Buildings				
3	Hydraulic works				
4	Other civil works				
5	Plant and machinery				
6	Lines and cable network				
7	Vehicles				
8	Furniture and fixtures				
9	Office equipment				
10	Total				
	(iv)Transmission				
1	Land and land rights				
2	Buildings				
3	Hydraulic works				
4	Other civil works				
5	Plant and machinery				
6	Lines and cable network				
7	Vehicles				
8	Furniture and fixtures				
9	Office equipment				
10	Total				
	(v)Distribution				
1	Land and land rights				
2	Buildings				
3	Hydraulic works				
4	Other civil works				
5	Plant and machinery				
6	Lines and cable network				
7	Vehicles				
8	Furniture and fixtures				
9	Office equipment				
10	**Total**				
	(vi) Others				
	Grand Total(i to vi)				

* These details are not available as the accounts are being maintained at different field offices and later compiled at the Head Office.
PSPCL would like to seek waiver from compilation of this format

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Depreciation Charges
Format 12

(Rs. Crores)

Sr. No.	Item	Assets as on April 1 of 2012	Depreciation for FY 2012-13 (Actual)	Assets as on April 1 of 2013	Depreciation for FY 2013-14 (Prov.)	Assets as on April 1 of 2014	Depreciation for FY 2014-15 (RE)	Assets as on April 1 of 2015	Depreciation for FY 2014-15 (Prov.)	Assets as on April 1 of 2016
1	2	3	4	5	6	7	8	9	10	11
1	Thermal	12224.96	178.07	12444.28	185.32	12509.72	499.63	12660.33	502.62	12660.33
2	Hydel	10781.36	236.88	10784.42	232.07	10821.69	429.62	10821.69	434.78	11081.55
3	Internal Combustion	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00
4	**Total Generation**	23006.32	414.95	23228.70	417.39	23331.41	929.25	23482.02	937.40	23741.88
5	Transmission	0	0.00	0.00	0.00	0.00	0	0.00	0	0.00
6	Distribution	14885.40	369.42	16594.59	433.52	17561.20	747.03	20072.75	839.81	22235.30
7	Others	1324.17	11.95	1328.07	10.33	1335.88	10.00	1335.88	9.50	1335.88
8	**Total**	39215.89	796.32	41151.36	861.24	42228.49	1686.28	44890.65	1786.71	47313.06
9	Less: Revalued amount of Land/Depreciation on Revalued amount					18422.00	731.35	18422	731.35	18422
10	Total after revaluation					23806.49	954.93	26468.65	1055.36	28891.06
11	*Add: Prior Period**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	*Total*	39215.89	796.32	41151.36	861.24	23806.49	954.93	26468.65	1055.36	28891.06

* Considered separately

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
R&M Expense
Format 13

Actual expenses (Rs. Crore)

Sr.No.	Items	FY 2012-13	FY 2013-14	FY 2014-15
		Actual	Provisional	H1
1	2	3	4	5
1	Plant& machinery	255.92	274.11	74.57
2	Building	11.28	14.62	6.05
3	Hydraulic works & civil works	6.80	10.74	3.91
4	Line cable & network	43.01	64.35	7.72
5	Vehicles	1.94	2.00	0.73
6	Furniture & fixtures	0.03	0.03	0.02
7	Office equipments	0.30	0.35	0.13
8	Operating expenses	17.07	26.36	14.49
9	**Total**	**336.35**	**392.56**	**107.62**
10	Add: BBMB share	26.57	27.90	13.92
11	**Total expenses**	**362.92**	**420.46**	**121.54**
12	Less: R&M Expenses Capitalized	3.86	3.31	0.42
13	**Net expenses**	**359.06**	**417.15**	**121.12**
14	Add prior period*	0.00	0.00	0
15	R & M for asset addition during year	0.00	0.00	0
16	Less: Royalty charges payable to GOP		5.00	
17	**Total expenses charged to revenue**	359.06	**412.15**	**121.12**

* Considered Seperately

Normative R&M expenditure which is claimed.

(Rs. Crore)

Sr. No	Particulars	FY 2012-13	FY 2013-14	FY 2014-15 (R.E)	FY 2015-16
1	Plant& machinery	359.33	355.68	384.24	413.26
2	Building	15.84	18.97	20.49	22.04
3	Hydraulic works & civil works	9.55	13.94	15.05	16.19
4	Line cable & network	60.39	83.50	90.20	97.02
5	Vehicles	2.72	2.60	2.80	3.02
6	Furniture & fixtures	0.04	0.04	0.04	0.05
7	Office equipments	0.42	0.45	0.49	0.53
8	Operating expenses	23.97	34.20	36.95	39.74
9	**Total**	**472.27**	**509.37**	**550.28**	**591.85**
10	Add: BBMB share	37.31	36.20	39.11	42.06
11	**Total expenses**	**509.57**	**545.58**	**589.39**	**633.91**
12	Less: R&M Expenses Capitalized	5.42	4.29	4.64	4.99
13	**Net expenses**	**504.15**	**541.28**	**584.75**	**628.92**

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
A&G Expense
Format 14

Actual expenses

(Rs. Crore)

Sr.No.	Items	FY 2012-13	FY 2013-14	FY 2014-15
		Actual	Provisional	H1
1	2	3	4	5
1	Rent Rates & taxes	4.04	5.65	1.15
2	Insurance	0.64	0.69	0.38
3	Telephone, postage & Telegram	4.81	4.75	2.18
4	Consultancy Fee	0.30	0.38	0.04
5	Technical Fee	0.00	0.00	0.00
6	Other Professional Charges	1.83	1.30	0.21
7	Conveyance & Travelling	26.19	31.41	14.70
8	Electricity & Water	14.86	17.88	7.08
9	Other	58.80	100.74	38.01
10	Freight	8.51	9.25	4.50
11	Other Material related expenses	10.52	13.50	6.87
12	**Total Expenses**	**130.50**	**185.55**	**75.12**
13	Add: BBMB share	2.23	1.45	0
14	**Total Expenses**	**132.73**	**187.00**	**75.12**
15	Less: Capitalised	20.00	27.81	5.76
16	**Net Expenditure**	**112.73**	**159.19**	**69.36**
17	Add Prior Period*	0.00	0	0
18	A&G for Asset Addition During the Year	0.00	0.00	
19	**Total**	**112.73**	**159.19**	**69.36**

* Considered seperately

Normative A&G Expense claimed

(Rs. Crore)

Sr. No	Particulars	FY 2012-13	FY 2013-14	FY 2014-15 (R.E)	FY 2015-16
1	Rent Rates & taxes	3.53	4.05	5.34	6.03
2	Insurance	0.56	0.49	0.65	0.74
3	Telephone, postage & Telegram	4.20	3.40	4.49	5.07
4	Consultancy Fee	0.26	0.27	0.36	0.41
5	Technical Fee	0.00	0.00	0.00	0.00
6	Other Professional Charges	1.60	0.93	1.23	1.39
7	Conveyance & Travelling	22.88	22.50	29.67	33.52
8	Electricity & Water	12.98	12.81	16.89	19.08
9	Other	51.37	72.17	74.92	88.32
10	Freight	7.43	6.63	8.74	9.87
11	Other Material related expenses	9.19	9.67	12.75	14.41
12	**Total Expenses**	**114.01**	**132.93**	**155.04**	**178.84**
13	Add: BBMB share	1.95	1.04	1.37	1.55
14	**Total Expenses**	**115.95**	**133.97**	**156.41**	**180.39**
15	Licence Fees	3.99	5.08	5.46	5.46
16	Fees for determination of tariff	4.84	5.73	5.85	5.85
17	**Total A&G Expense**	**124.78**	**144.78**	**167.72**	**191.69**

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Details of loans for the year 2012-13 (Actual)
Format 15

(Rs. Crores)

Sr. No.	Particulars (Source)	Opening balance	Rate of interest	Addition during the year	Repayment during the year	Closing balance	Amount of interest paid
1	2	3	4	5	6	7	8
1	Non SLR Bonds	340.00	9.01%-10.15%	0.00	0.00	340.00	33.33
2	LIC	24.61	11.00%	0.00	10.01	14.60	1.93
3	**Scheme Loans (REC Ltd.)**						
	T &D Scheme Loans	3636.13	8.00%-13.50%	597.49	302.09	3931.53	451.77
	Generation Schemes	1517.44	7.00%-13.50%	67.31	290.99	1293.76	163.95
4	**Commercial Banks**						
	Long term Loans	1872.51	6.80%-12.80%	0.00	167.14	1705.37	192.78
5	PFC	96.78	7.15%-12.75%	0.00	17.91	78.87	6.51
6	GPF	2171.03	0.00	166.39	0.00	2337.42	181.18
7	**CSS**						
	APDRP	70.88	10.50%-12.50%	0.00	6.32	64.56	7.81
	R-APDRP	357.81	9.00%-11.50%	10.26	0.00	368.07	36.46
8	RBI bonds/State Govt. Loan	221.13	0.00	23.27	87.94	156.46	23.27
9	**Working Capital loan**	10819.65	10.20%-14.25%	9197.82	8176.04	11841.43	1340.55
10	Total of interest paid on loan	**21127.97**	**0.00**	**10062.54**	**9058.44**	**22132.07**	**2439.54**
11	Int to Consumer						126.22
12	Total						2565.76
13	Less Capitalisation						295.65
14	Net Interest						2270.11
15	Add Prior Period						0.00
16	Total interest						2270.11
17	Guarantee Fees paid						155.95
18	Others						3.73
19	Total interest & Finance Charge						2429.79

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Details of loans for the year 2013-14 (Actual)
Format 15A

(Rs. in crores)

Sr. No.	Particulars (Source)	Opening balance	Rate of interest	Addition during the year	Repayment during the year	Closing balance	Amount of interest paid
1	2	3	4	5	6	7	8
1	Non SLR Bonds	340.00	9.01%-10.15%	0.00	0.00	340.00	33.38
2	LIC	14.60	11.00%	0.00	8.26	6.34	0.96
3	**Scheme Loans (REC Ltd.)**						
	T &D Scheme Loans	3931.53	8.00%-12.75%	710.58	405.62	4236.49	490.34
	Generation Schemes	1293.76	8.00%-12.75%	75.17	263.67	1105.26	145.52
4	**Commercial Banks**						
	Long term Loans	1705.37	8.45%-12.50%	300.00	249.87	1755.50	195.32
5	PFC	78.87	7.16%-12.75%	73.14	17.72	134.29	12.53
6	GPF	2337.42	0.00	0.00	248.44	2088.98	188.25
7	**CSS**						
	APDRP	64.56	10.50%-12.50%	0.00	6.31	58.25	7.11
	R-APDRP	368.07	9.00%-11.50%	13.50	0.00	381.57	37.88
8	RBI bonds/ State Govt. Loan	156.46	0.00	22.00	87.00	91.46	22.00
9	**Working Capital loan**	11841.43	10.20%-12.75%	1920.17	2101.41	11660.19	1386.23
10	**Total of interest paid on loan**	**22132.07**	**0.00**	**3114.56**	**3388.30**	**21858.33**	**2519.52**
11	Int to Consumer						140.25
12	Total						2659.77
13	Less Capitalisation						290.71
14	Net Interest						2369.06
15	Add Prior Period						0.00
16	Total interest						2369.06
17	Guarantee Fees paid						40.26
18	Others						4.19
19	Total interest & Finance Charge						2413.51

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Details of loans for the year 2014-15 (H1)
Format 15B

(Rs. Crore)

Sr. No.	Particulars (Source)	Opening balance	Rate of interest	Addition during the year	Repayment during the year	Closing balance	Amount of interest paid
1	2	3	4	5	6	7	8
1	Non SLR Bonds	340.00	9.01%-10.15%	0.00	0.00	340.00	12.83
2	LIC	6.34	11.00%	0.00	6.34	0.00	0.35
3	**Scheme Loans (REC Ltd.)**						
	T &D Scheme Loans	4236.49	8.00%-13.50%	349.57	261.72	4324.34	263.53
	Generation Schemes	1105.26	7.00%-13.50%	107.57	169.59	1043.24	67.48
4	**Commercial Banks**						
	Long term Loans	1755.50	8.45%-12.50%	100.00	132.97	1722.53	95.22
5	PFC	134.29	7.16%-12.75%	0.00	8.86	125.43	6.96
6	GPF	2088.98	0.00	0.00	110.76	1978.22	0.00
7	**CSS**						
	APDRP	58.25	10.50%-12.50%	0.00	2.52	55.73	2.56
	R-APDRP	381.57	9.00%-11.50%	0.00	0.00	381.57	19.06
8	RBI bonds/ State Govt. Loan	91.46	0.00	0.00	0.00	91.46	0.00
9	**Working Capital loan**	11660.19	11.10%-12.75%	891.63	1000.12	11551.70	658.80
10	**Total of interest paid on loan**	**21858.33**	**0.00**	**1448.77**	**1692.88**	**21614.22**	**1126.79**
11	Int to Consumer						0.00
12	Total						1126.79
13	Less Capitalisation						0.00
14	Net Interest						1126.79
15	Add Prior Period						0.00
16	Total interest						1126.79
17	Finance Charges						0.00
18	Total interest & Finance Charge						1126.79

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Details of loans for the year 2014-15 (H2)
Format 15C

(Rs. Crore)

Sr. No.	Particulars (Source)	Opening balance	Rate of interest	Addition during the year	Repayment during the year	Closing balance	Amount of Interest paid
1	2	3	4	5	6	7	8
1	Non SLR Bonds	340.00	9.01%-10.15%	0.00	0.00	340.00	20.55
2	LIC	0.00	11.00%	0.00	0.00	0.00	0.00
3	**Scheme Loans (REC Ltd.)**						
	T &D Scheme Loans	4324.34	8.00%-13.50%	0.00	257.01	4067.33	273.53
	Generation Schemes	1043.24	7.00%-13.50%	0.00	109.06	934.18	60.12
	Long term Loans REC/PFC (Annual Plan)	0.00	12.50% (3 Months)	1026.86	0.00	1026.86	32.09
4	**Commercial Banks**						
	Long Term Loans	1722.53	8.45%-12.50%	200.00	156.79	1765.74	118.96
	Long Term Loans (Annual Plan)	0.00	12.25% (3 Months)	400.00	0.00	400.00	12.25
5	PFC Limited	125.43	7.16%-12.75%	0.00	8.86	116.57	7.40
6	GPF	1978.22	0.00	0.00	110.76	1867.46	169.00
7	CSS						
	APDRP	55.73	10.50%-12.50%	0.00	3.80	51.93	3.84
	R-APDRP	381.57	9.00%-11.50%	0.00	0.00	381.57	19.06
8	RBI bonds/ State Govt. Loan	91.46	0.00	18.00	85.73	23.73	18.00
9	**Working Capital loan**	11551.70	11.10%-12.75%	928.25	979.95	11500.00	735.25
10	**Total of interest paid on loan**	**21614.22**	**0.00**	**2573.11**	**1711.96**	**22475.37**	**1470.05**
11	Int to Consumer						160.00
12	**Total**						1630.05
13	Less Capitalisation						338.00
14	Net Interest						1292.05
15	Add Prior Period						0.00
16	Total interest						1292.05
17	Finance Charges						52.73
18	Total interest & Finance Charge						1344.78

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Details of loans for the year 2014-15
Format 15D

(Rs. Crore)

Sr. No.	Particulars (Source)	Opening balance	Rate of interest	Addition during the year	Repayment during the year	Closing balance	Amount of interest paid
1	2	3	4	5	6	7	8
1	Non SLR Bonds	340.00	9.01%-10.15%	0.00	0.00	340.00	33.38
2	LIC	6.34	11.00%	0.00	6.34	0.00	0.35
3	**Scheme Loans (REC Ltd.)**						
	T &D Scheme Loans	4236.49	8.00%-13.50%	349.57	518.73	4067.33	537.06
	Generation Schemes	1105.26	7.00%-13.50%	107.57	278.65	934.18	127.60
	Long term Loans REC/PFC (Annual Pla	0.00	12.50%	1026.86	0.00	1026.86	32.09
4	**Commercial Banks**						
	Long Term Loans	1755.50	8.45%-12.50%	300.00	289.76	1765.74	214.18
	Long Term Loans (Annual Plan)	0.00	12.25%	400.00	0.00	400.00	12.25
5	PFC Limited	134.29	7.16%-12.75%	0.00	17.72	116.57	14.36
6	GPF	2088.98	0.00	0.00	221.52	1867.46	169.00
7	**CSS**						
	APDRP	58.25	10.50%-12.50%	0.00	6.32	51.93	6.40
	R-APDRP	381.57	9.00%-11.50%	0.00	0.00	381.57	38.12
8	RBI bonds/ State Govt. Loan	91.46	0.00	18.00	85.73	23.73	18.00
9	**Working Capital loan**	11660.19	11.10%-12.75%	1819.88	1980.07	11500.00	1394.05
10	**Total of interest paid on loan**	**21858.33**		**4021.88**	**3404.84**	**22475.37**	**2596.84**
11	Int to Consumers						160.00
12	**Total**						2756.84
13	Less Capitalisation						338.00
14	Net Interest						2418.84
15	Add Prior Period						0.00
16	Total interest						2418.84
17	Finance Charges						52.73
18	Total interest & Finance Charge						2471.57

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Details of loans for the year 2015-16 (Proj.)
Format 15E

Rs. Crore

Sr. No.	Particulars (Source)	Opening balance	Rate of interest	Addition during the year	Repayment during the year	Closing balance	Amount of interest paid
1	2	3	4	5	6	7	8
1	Non SLR Bonds	340.00	9.01%-10.15%	0.00	0.00	340.00	33.38
	Non SLR Bonds (Annual Plan)	0.00	10.50%	300.00	0.00	300.00	15.75
2	LIC	0.00	0.00	0.00	0.00	0.00	0.00
3	**Scheme Loans (REC Ltd.)**						
	T &D Scheme Loans	4067.33	8.00%-13.50%	0.00	449.61	3617.72	480.32
	Generation Schemes	934.18	7.00%-13.50%	0.00	298.23	635.95	97.87
	Long term Loans REC/PFC (Annual Plan	1026.86	12.5% (6 months)	2000.00	0.00	3026.86	253.36
4	**Commercial Banks**						
	Long Term Loans	1765.74	8.45%-12.50%	0.00	295.72	1470.02	191.95
	Long Term Loans (Annual Plan)	400.00	12.25% (6 Months)	700.00	0.00	1100.00	91.88
5	PFC Limited	116.57	10.50%-12.75%	0.00	17.73	98.84	13.26
6	GPF	1867.46	0.00	0.00	221.52	1645.94	149.00
7	**CSS**						
	APDRP	51.93	10.50%-12.50%	0.00	6.33	45.60	6.50
	R-APDRP	381.57	9.00%-11.50%	0.00	0.00	381.57	38.12
8	RBI bonds/ State Govt. Loan	23.73	0.00	5.00	28.73	0.00	5.00
9	**Working Capital loan**	11500.00	11.75% - 12.75%	1813.00	2063.00	11250.00	1387.75
10	**Total of interest paid on loan**	**22475.37**		**4818.00**	**3380.87**	**23912.50**	**2764.14**
11	Int to Customer						180.00
12	**Total**						2944.14
13	Less Capitalisation						416.00
14	Net Interest						2528.14
15	Add Prior Period						0.00
16	Total interest						2528.14
17	Finance Charges						65.00
18	Total interest & Finance Charge						2593.14

PUNJAB STATE POWER CORPORATION LIMITED

PUNJAB STATE POWER CORPORATION LIMITED

ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16

Interest & Finance charges

Format16

(Rs. Crore)

Sr. No.	Source of loan	FY 2012-13 (Actual)	FY 2013-14 (Prov.)	FY 2014-15 (H1)	FY 2014-15 (H2) (Projected)	FY 2014-15 (RE)	FY 2015-16 (Proj.)
1	2	3	4	5	6	7	8
1	Non SLR Bonds	33.33	33.38	12.83	20.55	33.38	49.13
2	LIC	1.93	0.96	0.35	0.00	0.35	0.00
3	REC	615.72	635.86	331.01	365.74	696.75	831.55
4	Commercial Banks (Long Term)	192.78	195.32	95.22	131.21	226.43	283.83
5	PFC	6.51	12.53	6.96	7.40	14.36	13.26
6	GPF	181.18	188.25	0.00	169.00	169.00	149.00
7	CSS/APDRP	44.27	44.99	21.62	22.90	44.52	44.62
8	Working Capital Loans	1340.55	1386.23	658.80	735.25	1394.05	1387.75
9	Interest to Consumers	126.22	140.25	0.00	160.00	160.00	180.00
10	Others	3.73	4.19	0.00	0.00	0.00	0.00
11	**TOTAL**	2546.22	2641.96	1126.79	1612.05	2738.84	2939.14
12	State Govt Loans	23.27	22.00	0.00	18.00	18.00	5.00
13	**TOTAL(13+14)**	2569.49	2663.96	1126.79	1630.05	2756.84	2944.14
14	Less:Capitalistion	295.65	290.71	0.00	338.00	338.00	416.00
15	**Net Interest**	2273.84	2373.25	1126.79	1292.05	2418.84	2528.14
16	Add:prior period	0.00	0.00	0.00	0.00	0.00	0.00
17	**Total Interest**	2273.84	2373.25	1126.79	1292.05	2418.84	2528.14
18	Finance Charges	155.95	40.26	0.00	52.73	52.73	65.00
19	**Total Interest And Finance Charges**	**2429.79**	**2413.51**	**1126.79**	**1344.78**	**2471.57**	**2593.14**

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Interest Capitalised
Format 17

(Rs. Crores)

Sr. No.	Interest Capitalised	FY 2012-13 (Actual)	FY 2013-14 (Prov.)	FY 2014-15 (RE)	FY 2015-16 (Proj.)
1	2	3	4	5	6
1	WIP at the end of the year	2000.48	2766.22	2609.12	3514.71
2	GFA at the end of the year	41151.36	42228.49	44890.65	47313.06
3	WIP+GFA at the end of the year	43151.84	44994.71	47499.77	50827.77
4	Interest (excluding interest on WCL & Int to Consumers)	1102.72	1137.48	1202.79	1376.39
5	Interest Capitalised	295.65	290.71	338.00	416.00

PUNJAB STATE POWER CORPORATION LIMITED

ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16

Information regarding restructuring of outstanding loans during the year

Format 18

(Rs. in crores)

Sr. No.	Source of loan	Amount of original loan	Old rate of interest	Amount already restructured	Revised rate of interest	Amount now being restructured	New rate of interest
1	2	3	4	5	6	7	8
			NIL				

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16

Format 19

Lease Details

Sr. No.	Name of Lesser	Gross Assets (Rs.in crores)	Lease entered on	Lease Rentals	Primary period ended / ending by	Secondary period ending by
1	2	3	4	5	6	7
			NIL			

PUNJAB STATE POWER CORPORATION LIMITED

ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16

Non Tariff Income

Format 20

(Rs. Crore)

Sr. No.	Particulars	FY 2012-13 (Actual)	FY 2013-14 (Prov.)	FY 2014-15 (RE)	FY 2015-16 (Proj.)
1	Meter/service rent	93.28	95.17	99.93	104.92
2	Late payment surcharge	199.42	238.89	109.81	0.00
3	Misc. receipts*	218.88	272.47	307.33	330.93
4	Misc. charges (except PLEC)	35.05	38.43	40.35	42.37
5	Wheeling charges	337.94	334.16	342.51	351.08
6	Interest on staff loans & advance	85.73	95.11	99.87	104.86
7	Income from trading	37.65	36.79	38.63	40.56
8	Income staff welfare activities	0.05	0.07	0.07	0.08
9	Excess on verification	0.00	0.00	0.03	0.03
10	Investments & bank balances	64.99	67.59	25.00	11.00
11	Gain on sale of asset	0.02	0.00	0.00	0.00
12	**Total income**	1073.01	1178.68	1063.53	985.83
13	Add prior period income*	0.00	0.00	0.00	0.00
14	BBMB Income	5.17	10.65	11.18	11.74
15	**Total non tariff income**	1078.18	1189.33	1074.72	997.57
16	Less: Late Payment surcharge	199.42	238.89	109.81	0
17	Net Non Tariff Income	878.76	950.44	964.91	997.57

* Considered seperately

* Miscellaneous charges has been increased by 5% for FY 2014-15 & FY 2015-16

* Wheeling charges has been increased by 2.5% for FY 2014-15 & FY 2015-16

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Investment Plan (Schemewise)
Format 21

(Rs. Crore)

Sr. No.	Nameof Project/Scheme	FY 2012-13 (Actual)	FY 2013-14 (Prov.)	FY 2014-15 (RE)	FY 2015-16 (Proj)
1	2	3	4	5	6
A	GENERATION				
I	Hydro Electric Projects				
1	R&M of BBMB Power house & Bhakra Left Bank & Dehar PH			57.00	60
	Secy./BBMB	2.52	7.58		
2	R&M of HEPs of PSPCL	28.65	48.62	131.31	266
	Shahpur Kandi HEP				
3	Mukerian HEP-II				
	CE/HP	49.55	19.87	37.83	35
	CE/CD &C				
II	Other Works				
1	1320 MW State Sector Thermal Project near Mukerian.				
	CE/Thermal Design	0.00	0.00	2.00	350
2	Computerization of TPPs				
	CE/Thermal Design	0.00	0.00	1.00	1.00
3	a) Institute of Power Management, Patiala.				
	CE/CD&C	0.00	0.00	0.10	0
	b) Multistoried Integrated Corporate office complex at Patiala			0.40	5
III	Thermal Projects				
1	GHTP Stage-I, Lehra Mohabbat CE/GHTP	-2.09	3.68	12.06	37
2	GHTP Stage-II, Lehra Mohabbat CE O&M/GHTP	4.13	28.35	20.52	10
	CE/Thermal Design				
3	Gas Based at Ropar				
	CE/Thermal Design	0.00	0.00	0.00	0
IV	R&M under Thermal				
	a. Based on RLA study				
	b. other than RLA Study				
	c. Capital Works other then R&M works				
	1) other works (CE/GNDTP)	106.00	96.10	100.46	133
	2) T&P items (CE/GNDTP)				
	3) Renovation of Lake Building (CE/CD&C)				
	4) Augmentation of Fire Protection System				
V	R&M of GGSSTP	37.90	33.60	54.09	60
	1) GGSSTP scheme (I & II) and proposed R&M				
	2) T&P Items				
	3) Strengthening of micro Hydel Channel.				
	4) Const. of 3 No. HTP & ETP				
	5) Other works				
VI	R&M of PSPCL Hydel PROJECTS				
	Ranjit Sgar Dam				
	Shanan Power House, Joginder Nagar				
	MHP Stage-1	1.38	15.50	33.49	60
	ASHP Anandpur Sahib				
	UBDC stage-I & II				
	Micro Hydel Project				
	TOTAL GENERATION	228.04	253.28	450.26	1037.00
B. TRANSMISSION					
1	Transmission works				
	TOTAL TRANSMISSION (66/33 KV)	223.73	307.67	469.00	515.8
C. DISTRIBUTION					
1	Normal development works including SI schemes			686.00	410.30
	Shifting of Meters out of consumer premises (Demand side			182.00	220
	Civil works of Grid substations (Control room building & surrounding areas) under CE/West Zone, PSPCL Bhatinda	945.77	1116.47	15.00	0
2	Rural Electrification : Providing 11 KV manual Operative switch Gears			5.00	5.70
3	Release of Tubewell connections for general connections and sem-affected area			120.00	132
4	Comprehensive T&D losses reduction plan		56.64	35.00	33
a	Works relating to APDRP-II Part-A CE/IT	223.22	41.75	150.00	50
	Works relating to APDRP-II Part B CE/APDRP			350.00	900
5	IT in Distribution offices CE/IT	0.00	0.00	20.00	22
6	RGGVY - Single Point connections to BPL families	9.47	1.15	0.00	
7	ME Lab CE/Metering	0.00	0.00	2.00	2.2
8	Miscellaneous activities like setting up of staff college, Renovation of TTI construction of IPMP e.t.c	0.00	0.00	0.00	0.00
	TOTAL DISTRIBUTION	1178.46	1216.01	1565.00	1775.20
	TOTAL CAP EXP -PSPCL	1630.23	1776.96	2484.26	3328.00
D)	Non Plan Exp.				
9	REC Non Plan	34.9	33.93	20.21	
10	Head Office Works	1.16	2.33	0.27	
11	Rural Dev. Board	2.94	2.31	0.03	
12	Distt. Planning Board	1.95	4.93	0.15	
13	Survey & Investigation	0.31	0.34	0.14	
14	OYT	9.49	16.65	0	
15	Customer Care Centre	0	0.25	0	
16	Total Non Plan Exp	50.75	60.74	20.8	
17	Total of Plan & Non Plan	1681	1838	2505	3328

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Investment Plan (Year-wise)
Format 22

(Rs. Crores)

Sr. No.	Year	Originally proposed by the Board/PSPCL	Approved by the Commission	Revised by the Board/PSPCL	Revised approval by the Commission in review	Actual expenditure	Final approval by the Commission in true up
1	2	3	4	5	6	7	8
1	FY 2012-13	3286.19	2800.00	1860.00	1300.00	1681.00	
2	FY 2013-14	2200.00	1450.00	1950.56	1450.00	1838.00	
3	FY 2014-15 (RE)	4107.62	2000.00	2505.06			
4	FY 2015-16 (Proj.)	3328.00					

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Capital Base and Return
Format 23

(Rs. Crores)

Sr. No.	Particulars	FY 2012-13 (Actual)	FY 2013-14 (Prov.)	FY 2014-15 (Proj.)	FY 2015-16 (Proj.)
1	2	3	4	5	6
1	Gross block at beginning of the year	39215.89	41151.36	42228.49	44890.65
2	Less accumulated depreciation	9139.52	9855.79	10751.69	11706.62
3	Net block at beginning of the year	30076.37	31295.57	31476.80	33184.03
4	Less accumulated consumer contribution	746.77	1055.58	1355.58	1655.58
5	Net fixed assets at beginning of the year	29329.60	30239.99	30121.22	31528.45
7	Reasonable return @ 3% NFA	879.89	907.20	903.64	945.85

Sr. No.	Particulars	WIP	Fixed Assets
1	2	3	4
1	As on 31st March of previous year (FY 2011-12)	1436.44	39215.89
	Add capital expenditure during current year (FY 2012-13)	1681.00	1935.47
	Total:	3117.44	41151.36
	Less transferred to fixed assets	1116.94	0.00
2	As on 31st March of previous year (FY 2012-13)	2000.50	41151.36
	Add capital expenditure during current year (FY 2013-14)	1838.00	1077.13
	Total:	3838.50	42228.49
	Less transferred to fixed assets	1071.96	0.00
3	As on 31st March of previous year (FY 2013-14)	2766.54	42228.49
	Add capital expenditure during ensuring year (FY 2014-15)	2505.00	2662.16
	Total:	5271.54	44890.65
	Less transferred to fixed assets	2662.16	0.00
4	As on 31st March of ensuring year FY 2014-15	2609.38	44890.65
	Add capital expenditure during ensuring year (FY 2015-16)	3328.00	2422.41
	Total:	5937.38	47313.06
	Less transferred to fixed assets	2422.41	

Sr. No.	Particulars	Amount
1	2	
	Accumulated Depreciation	
1	As on 31st March of the year (FY 2011-12)	9139.52
2	Add: Depreciation for current year (FY 2012-13)	716.27
3	As on 31st March of the year (FY 2012-13)	9855.79
4	Add: Depreciation for current year (FY 2013-14)	895.9
5	As on 31st March of the year (FY 2013-14)	10751.69
6	Add: Depreciation for current year (FY 2014-15)	954.93
7	As on 31st March of the year (FY 2014-15)	11706.62
	Consumers Contribution	
1	As on 31st March of previous year (FY 2011-12)	746.77
2	Addition during the current year (FY 2012-13)	308.81
3	As on 31st March of previous year (FY 2012-13)	1055.58
4	Addition during the current year (FY 2013-14)	300
5	As on 31st March of previous year (FY 2013-14)	1355.58
6	Addition during current year (FY 2014-15)	300
7	As on 31st March of current year (FY 2014-15)	1655.58

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16

Format 24

Cash flow statement for the FY 2015-16 (Proj.)

(Rs. in crores)

Sr. No.	Month	Sources of receipt	Amount	Particulars of payment	Amount
1	2	3	4	5	6
1	April				
2	May				
3	June				
4	July				
5	August				
6	September				
7	October				
8	November				
9	December				
10	January				
11	February				
12	March				
13	**Total**				

* The Format Prescribed by the commission required monthwise cashflow which would require fairly detailed asessment of timing of revenue, costs, investments and borrowings. These details are not available. PSPCL would like to seek waiver from compliance of this Format.

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Original Cost of Fixed Assets
Format 25

(Rs. Crores)

Sr. No.	Assets group	Closing balance at the end of FY 2011-12	Addition during the FY 2012-13	Closing balance at the end of FY 2012-13	Addition during the FY 2013-14	Closing balance at the end of FY 2013-14	Addition during FY 2014-15	Closing balance at the end of FY 2014-15	Addition during FY 2015-16	Closing balance at the end of FY 2015-16
1	2	3	4	5	6	7	8	9	10	11
1	Thermal	12224.96	219.32	12444.28	65.44	12509.72	150.61	12660.33	0.00	12660.33
2	Hydro*	10781.36	3.06	10784.42	37.27	10821.69	0.00	10821.69	259.86	11081.55
3	Internal combustion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Distribution & Transmission	14885.40	1709.19	16594.59	966.61	17561.20	2511.55	20072.75	2162.55	22235.30
5	Others	1324.17	3.90	1328.07	7.81	1335.88	0.00	1335.88	0.00	1335.88
6	**Total**	39215.89	1935.47	41151.36	1077.13	42228.49	2662.16	44890.65	2422.41	47313.06

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Works-in-Progress
Format 26

(Rs. in crores)

Sr. No.	Particulars	FY 2012-13 (Actual)	FY 2013–14 (Prov.)	FY 2014-15 (RE)	FY 2015-16 (Proj.)
1	2	3	4	5	6
1	Opening balance	1436.44	2000.48	2766.22	2609.12
2	Add:New investment	1680.98	1837.70	2505.06	3328.00
3	**Total**	3117.42	3838.18	5271.28	5937.12
4	Less investment capitalized	1116.94	1071.96	2662.16	2422.41
5	Closing balance	2000.48	2766.22	2609.12	3514.71

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Revenue from Existing Tariff FY 2012-13 (Actual)
Format 27

Sr. No.	Category of consumers	Energy sales (MU)	Avg Billing Rate (p/unit)	Revenue (Rs. in crores)
1	2	3	4	5
1	Domestic (Inc. Others)			
	0-100			
	101-300			
	above 300			
	Total	*9503.86*	478.31	*4545.82*
2	Non-Residential Supply	*2790.29*	590.50	*1647.66*
3	Small Power	*903.10*	478.70	*432.31*
4	Medium Supply	*1833.66*	537.37	*985.36*
5	Large Supply	*9562.94*	559.50	*5350.45*
6	Public Lighting	*148.28*	696.12	*103.22*
7	Bulk Supply & Grid Supply	*570.27*	562.49	*320.77*
8	Railway Traction	*134.85*	529.85	*71.45*
	Sub-total metered sales within State	**25447.25**		*13457.04*
9	Agriculture	10794.27	427.87	*4618.51*
10	Common Pool	309.00	436.80	*134.97*
11	Outside State	99.39	168.02	*16.70*
12	PLEC, MMC, Theft			*545.02*
13	Surcharge/Incentive			-46.62
14	**GRAND TOTAL**	**36649.91**		18725.62

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Revenue from Existing Tariff FY 2013-14 (Prov.)
Format 27A

Sr. No.	Category of consumers	Energy sales (MU)	Avg Billing Rate (p/unit)	Revenue (Rs. in crores)
1	2	3	4	5
1	Domestic (Inc. Others)			
	0-100			
	101-300			
	above 300			
	Total	*10559.20*	498.18	*5260.35*
2	Non-Residential Supply	*3016.41*	643.84	*1942.09*
3	Small Power	*906.53*	562.68	*510.09*
4	Medium Supply	*1907.95*	611.15	*1166.04*
5	Large Supply	*9807.05*	642.38	*6299.89*
6	Public Lighting	*170.21*	720.46	*122.63*
7	Bulk Supply & Grid Supply	*603.95*	629.95	*380.46*
8	Railway Traction	*143.45*	566.96	*81.33*
	Sub-total metered sales within State	*27114.75*		*15762.88*
9	Agriculture	*10232.06*	375.03	*3837.34*
10	Common Pool	*303.00*	433.86	*131.46*
11	Outside State	*174.24*		*44.12*
12	PLEC, MMC, Theft			801.26
13	Surcharge/Incentive			-114.50
14	**GRAND TOTAL**	**37824.05**		20462.56

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Revenue from Existing Tariff FY 2014-15 (RE)
Format 27B

Sr. No.	Category of consumers	Energy sales (MU)	Avg Billing Rate (p/unit)	Revenue (Rs. in crores)
1	2	3	4	5
1	Domestic (Inc. Others)			
	0-100			
	101-300			
	above 300			
	Total	11489.48	541.49	6221.41
2	Non-Residential Supply	3245.58	667.47	2166.32
3	Small Power	923.50	585.00	540.25
4	Medium Supply	1942.65	638.04	1239.50
5	Large Supply	11251.83	646.32	7272.24
6	Public Lighting	186.88	669.00	125.02
7	Bulk Supply & Grid Supply	633.35	642.62	407.01
8	Railway Traction	152.75	671.13	102.52
	Sub-total metered sales within State	29826.01		18074.25
9	Agriculture	10832.33	456.00	4939.54
10	Common Pool	309.00	467.00	144.30
11	Outside State	73.33	104.00	7.63
12	Add: PLEC, MMC, Theft			745.00
13	Surcharge			
14	Less: Rebate to Consumer catetered to High Voltage			-143.75
15	Less: TOD Rebate due to extension of two months and rate from Rs. 1 to 1.50 and extension to MS			-132
16	Less: Revenue due to increased metered sale			-271.13
17	Impact of TOD rebate for adjusting the PLEC			-129.00
18	**GRAND TOTAL**	**41040.68**		23234.85

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Revenue from Existing Tariff FY 2015-16 (Proj.)
Format 27C

Sr. No.	Category of consumers	Energy sales (MU)	Avg Billing Rate (p/unit)	Revenue (Rs. in crores)
1	2	3	4	5
1	Domestic (Inc. Others)			
	0-100			
	101-300			
	above 300			
		12515.67	541.46	*6776.80*
2	Non-Residential Supply	*3468.21*	667.52	*2315.09*
3	Small Power	*947.27*	585.00	*554.15*
4	Medium Supply	*1991.86*	638.04	*1270.89*
5	Large Supply	*11783.76*	646.32	*7616.03*
6	Public Lighting	*203.41*	669.00	*136.08*
7	Bulk Supply & Grid Supply	*663.63*	642.62	*426.46*
8	Railway Traction	*152.56*	671.13	*102.39*
	Sub-total metered sales within State	*31726.36*		*19197.88*
9	Agriculture	*11373.95*	456.00	*5186.52*
10	Common Pool	*312.00*	467.00	*145.70*
11	Outside State	*53.71*	104.56	*5.62*
12	Add: PLEC, MMC, Theft			*745.00*
13	Surcharge			
14	Less: Rebate to Consumer catetered to High Voltage			-143.75
15	Less: TOD Rebate due to extension of two months and rate from Rs. 1 to 1.50 and extension to MS			-132
16	Less: Revenue due to increased metered sale			-461.16
17	Impact of TOD rebate for adjusting the PLEC			-129.00
18	**GRAND TOTAL**	**43466.02**		24414.81

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
FY 2012-13 (Actual)
Format 28

(Rs. Crores)

Sr. No.	Item of Expense	As per PSPCL in ARR 12-13	Approved by Commission in T. O. for 12-13	Revised estimates by PSPCL	Approved by the Commission in T.O. 2013-14	Actual as per Accounts
1	2	3	4	5	6	7
1	Cost of fuel	4171.13	3824.34	4318.14	4092.95	3865.80
2	Cost of power purchase	7207.38	5717.04	7417.73	7074.88	7219.09
3	Employee cost	3834.72	3340.97	4049.22	3536.59	3868.40
4	R&M expenses	562.15	457.49	464.46	539.82	504.15
5	A&G expenses	111.45	101.42	110.23	133.06	124.78
6	Depreciation	770.32	768.00	758.47	768.00	796.32
7	Interest charges (Net of Capitalization)	2571.68	1580.35	2587.24	1760.58	2429.79
8	Return on Equity	607.55	405.73	607.55	942.62	942.62
9	Transmission Charges Payable to PSTCL	568.65	830.01	830.01	830.01	830.01
10	Maintenance Charges payable to Punjab Govt. on Power from RSD	10.50	10.50	0.00	10.50	0.00
11	Extraordinary items and debits	0.00	0.00	0.00	0.00	18.81
12	Prior period adjustment	0.00	0.00	0.00	0.00	43.25
13	**Total revenue requirement**	**20415.53**	**17035.85**	**21143.05**	**19689.01**	20643.01
14	Less Non-Tariff income	700.07	1068.72	866.76	1005.30	878.76
15	Less Revenue from existing tariff	16310.62	16003.96	19156.79	19329.38	13500.62
16	Less Subsidy from GOP				0.00	5225.00
17	**Net Gap This year**	**3404.84**	**-36.83**	**1119.50**	**-645.67**	1038.63
18	Add consolidated gap upto 2011-12	5459.17	1656.16	8138.75	1656.16	1946.31
22	**Total Gap/(surplus) for the year**					1038.63
23	Add carrying cost of Gaps	119.98	279.99			363.68
24	**Total cumulative GAP**	**8983.99**	**1899.32**	**9258.25**	**1010.49**	3348.62

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
FY 2013-14 (Provisional)
Format 28A

(Rs. Crores)

Sr. No.	Item of expense	Proposed by the PSPCL in ARR 13-14	Approved by the Commission	Revised Projections By PSPCL	Approved by the Commission in T.O. 2014-15	Actual as per Prov. Accounts
1	2	3	4	5	7	8
1	Cost of fuel	4905.80	4440.20	4511.13	4093.59	3918.25
2	Cost of power purchase	8680.57	7818.98	7705.40	7204.24	8367.33
3	Employee cost	4370.34	3797.85	4306.93	4281.20	4000.34
4	R&M expenses	504.11	595.39	408.10	382.59	541.28
5	A&G expenses	119.60	136.89	161.06	126.75	144.78
6	Depreciation	814.45	813.20	813.59	701.37	861.24
7	Interest charges (Net of Capitalization)	2656.86	1767.18	2508.50	1932.27	2413.51
8	Return on Equity	607.55	942.62	942.62	942.62	942.62
9	Transmission Charges Payable to PSTCL	890.84	1269.64	1269.64	1269.64	1269.64
10	Charges Payable to GoP on Power from RSD	0.00	10.50	31.44	31.44	5.00
11	Extraordinary items & debits	39.49	0.00	37.74	0	17.15
12	Prior Period Expenses	0.00	0.00	0.00		-28.61
13	**Total revenue requirement**	**23589.61**	**21592.45**	**22696.15**	**20965.71**	**22452.48**
14	Non-Tariff income	906.36	779.57	779.58	1041.52	950.44
15	Revenue from existing tariff	20570.91	19889.10	21133.89	20788.08	15766.95
16	Likely Tariff compensation from GoP				107.27	4695.61
17	**Net GAP from this Year**	**2112.34**	**923.78**	**782.68**	**-971.16**	**1039.48**
18	Gap for previous year	9258.26	1010.49	9823.64	1300.64	3348.62
22	**Total Gap/(surplus) for the year**					1039.48
23	Carrying cost on previous year gap	682.80	-	1476.06		558.98
24	Adjustment of impact of commission orders		-151.77		-151.17	
25	**Total Gap**	**12053.40**	**1782.50**	**12082.38**	**177.71**	**4947.08**

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
FY 2014-15 (RE)
Format 28 B

(Rs. Crores)

Sr. No.	Item of expense	Proposed by the PSPCL in ARR of 14-15	Approved by the Commission	Revised Projections By PSPCL
1	2	3	4	5
1	Cost of fuel	4997.60	4795.12	4404.21
2	Cost of power purchase	9247.95	8381.06	10379.52
3	Employee cost	4436.89	4286.13	4423.44
4	Progressive Funding	914.00	0.00	0
5	R&M expenses	442.65	412.17	584.75
6	A&G expenses	172.87	135.73	167.72
7	Depreciation	863.36	764.42	954.93
8	Interest charges (Net of Capitalization)	2763.30	2236.78	2471.57
9	Return on Equity	942.62	942.62	942.62
10	Transmission Charges Payable to PSTCL	1333.12	895.66	895.66
11	Charges Payable to GoP on Power from RSD	14.13	14.13	20.00
12	Provision for DSM fund	40.76	40.76	5.00
13	Prior Period Expenses	0.00		0.00
14	**Total revenue requirement**	**26169.25**	**22904.58**	25249.42
15	Non-Tariff income	818.56	589.79	964.91
16	Revenue from existing tariff	22755.39	21835.49	23234.85
17	Likely Tariff compensation from GoP			
18	**Net GAP from this Year**	**2595.30**	**479.30**	**1049.66**
19	Gap for previous year	12082.38	177.71	4947.08
23	**Total Gap/(surplus) for the year**			1049.66
24	Carrying cost on previous year gap	872.95	-63.38	807.11
25	**Total Gap**	**15550.64**	**593.63**	**6803.85**

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
FY 2015-16 (Projection)
Format 28C

(Rs. Crores)

Sr. No.	Item of expense	Projections by PSPCL
1	2	3
1	Cost of fuel	5360.10
2	Cost of power purchase	11488.12
3	Employee cost	5480.61
4	R&M expenses	628.92
5	A&G expenses	191.69
6	Depreciation	1055.36
7	Interest charges (Net of Capitalization)	2593.14
8	Return on Equity	942.62
9	Transmission Charges Payable to PSTCL	931.08
10	Charges Payable to GoP on Power from RSD	0.00
11	DSM Fund	10.00
12	Prior Period Expenses	0.00
13	**Total revenue requirement**	**28681.65**
14	Non-Tariff income	997.57
15	Revenue from existing tariff	24414.81
16	Likely Tariff compensation from GoP	
17	**Net GAP from this Year**	**3269.26**
21	**Total Gap/(surplus) for the year**	**3269.26**
22	Gap for previous year	6803.85
23	Carrying cost on previous year gap	1244.68
24	**Total Gap**	**11317.78**

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Information regarding Wholesale Price Index (All Commodities)
(To be supported with documentary evidence)
Format 29

(Rs. Crores)

Sr. No.	Period	WPI*	Increase over previous year
1	2	3	4
1	As on April1 of n-3 year (FY 2011-12)	156.13	8.94%
2	As on April1 of n-2 year (FY 2012-13)	167.62	7.36%
3	As on April1 of n-1 year (FY 2013-14)	177.64	5.98%
4	As on April1 of n (current) year (FY 2014-15)	186.04	4.73%
5	As on April1 of n + 1 (ensuing) year (FY 2015-16)	194.84	4.73%

* Source: Office of the Economic Adviser to the Government of India using Base Year 2004-05

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Information regarding amount of Equity & Loan
Format 30

Sr. No.	Period	Amt. of Equity (Rs. in crores)	Amt. of Loan* (Rs. in crores)	Ratio of equity & loan
1	2	3	4	5
1	As on 31-03-2012	6081.43	10308.32	0.59
2	As on 31-03-2013	6081.43	10290.64	0.59
3	As on 31-03-2014	6081.43	10198.14	0.60
4	As on 31-03-2015	6081.43	10975.37	0.55
5	As on 31-03-2016	6081.43	12662.50	0.48

* Loans are excluding working capital loans

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Information regarding Revenue from Other Business
Format 31

Sr. No.	Particulars	Amount (Rs. in crores)
1	2	3
1	Total revenue from other business	Nil
2	Income from other business to be considered for licensed business as per regulations	Nil

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Information regarding Bad and Doubtful Debts
Format 32

Sr. No.	Particulars	Amount (Rs. in crores)
1	2	3
1	Amount of receivable bad and doubtful debts	
2	Provision made for debts in ARR	

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Information regarding Working Capital for the current and ensuing year
Format 33

(Rs. in crores)

Sr. No.	Particulars	FY 2014-15	FY 2015-16
1	2	3	4
1	Two month Fuel Cost	734.04	893.35
2	One month Employee Cost	368.62	456.72
3	One month Repair and Maintenance Expenses	48.73	52.41
4	One month Administration and General Expenses	13.98	15.97
5	Two month Receivables	3872.48	4069.14
6	Maintenance spares @ 15% of O&M expenses	751.24	921.60
7	Less: Consumer Security Deposit	2320.28	2420.00
8	**Total requirement for working capital**	8109.36	8829.19
9	Interest Rate	0.15	0.15
10	Interest	1196.13	1302.31

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2015-16
Information regarding Foreign Exchange Rate Variation (FERV)
Format 34

Sr. No.	Particulars	Amount (Rs. in crores)
1	2	3
1	Amount of liability provided	Nil
2	Amount recovered	Nil
3	Amount adjusted	Nil

PUNJAB STATE POWER CORPORATION LIMITED

Statement showing the amount of Government subsidy due and received FY 2012-13 (Actual)

Format 35

(Rs. Crores)

Sr.No.	Particulars	No. of consumers	Consumption as per account (in MUs)	Revenue required			Revenue actually receivable from consumers	Amount of subsidy due from GOP	Amount of subsidy received from GOP	Amount of subsidy received from GOP excess/short (+/-)
				Energy charges	Meter rentals and service charges etc.	Total				
1	1		2	3	4	5	6	7	8	9
2	(i) AP Consumers	1191407	10779	4597	9	4606	0	4606	5059.39	-521.90
3	(iii) Scheduled Castes DS Consumers	1072767	1305	568	18	586	0	586		
4	(iv) Non- SC BPL DS Consumers	73357	71	30	1	31	0	31		
5	**Total Subsidy for the year**	0	0	5195	28	5224	0	5224		
6	(iv) Subsidy payable on account of waiver of bill of AP consumers by GOP vide decision dated 16.12.2011	0	0	358	0	358	0	358		
7	**Total**	2337531	12155	5553	28	5581	0	5581	5059.39	-521.90

PUNJAB STATE POWER CORPORATION LIMITED

Statement showing the amount of Government subsidy due and received FY 2013-14 (Provisional)

Format 35A

(Rs. In crores)

Particulars	No. of consumers	Consumption as per account (in MUs)	Revenue required			Revenue actually receivable from consumers	Total amount of subsidy due from GOP	Amount of subsidy received from GOP	Amount of subsidy received from GOP excess/short (+/-)
			Energy charges	Meter rentals and service charges etc.	Total				
1	2	3	4	5	6	7	8	9	10
(i) AP Consumers	1223066	10224.00	4370.84	9.00	4379.84	0.00	4379.84	4815.00	-422.32
(ii) Scheduled Castes DS Consumers	1174213	1567.24	782.99	20.09	803.08	0.00	803.08		
(iii) Non- SC BPL DS Consumers	90961	105.19	52.68	1.72	54.40	0.00	54.40		
Total	2488240	11896.43	5206.51	30.81	5237.32	0.00	5237.32	4815.00	-422.32

PUNJAB STATE POWER CORPORATION LIMITED

Statement showing the amount of Government subsidy due and received FY 2014-15(RE)

Format 35 B

(Rs. Crores)

Sr.No.	Particulars	No. of consumers	Consumption as per account (in MUs)	Revenue required			Revenue actually receivable from consumers	Amount of subsidy due from GOP	Amount of subsidy received from GOP	Amount of subsidy received from GOP excess/short (+/-)
				Energy charges	Meter rentals and service charges etc.	Total				
1	1		2	3	4	5	6	7	8	9
2	(I) AP Consumers	1250885	10832	4940	9	4949	0	4949		
3	(iii) Scheduled Castes DS Consumers	1252125	1595	797	20	817	0	817		
4	(iv) Non- SC BPL DS Consumers	102245	107	54	2	55	0	55		
5	**Total Subsidy for the year**	2605255	12534	5790	31	5821	0	5821		
6	(iv) Subsidy payable on account of waiver of bill of AP consumers by GOP vide decision dated 16.12.2011	0	0	0	0	0	0	0		
7	**Total**	**2605255**	**12534**	**5790**	**31**	**5821**	**0**	**5821**	**0.00**	**0.00**

PUNJAB STATE POWER CORPORATION LIMITED

Statement showing the amount of Government subsidy due and received FY 2015-16(Proj.)

Format 35C

(Rs. Crores)

Sr.No.	Particulars	No. of consumers	Consumption as per account (In MUs)	Revenue required			Revenue actually receivable from consumers	Amount of subsidy due from GOP	Amount of subsidy received from GOP	Amount of subsidy received from GOP excess/short
				Energy charges	Meter rentals and service charges etc.	Total				
1	1		2	3	4	5	6	7	8	9
2	(i) AP Consumers	1281531	11374	5187	9	5196	0	5196		
3	(iii) Scheduled Castes DS Consumers	1339774	1707	853	22	875	0	875		
4	(iv) Non- SC BPL DS Consumers	109402	115	57	2	59	0	59		
5	**Total Subsidy for the year**	2730707	13196	6097	33	6130	0	6130		
6	(iv) Subsidy payable on account of waiver of bill of AP consumers by GOP vide decision dated 16.12.2011	0	0	0	0	0	0	0		
7	**Total**	2730707	13196	6097	33	6130	0	6130	0.00	0.00

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DEFAULTING AMOUNT STATEMENT ENDING MARCH-2014 (UNAUDITED) SEPTEMBER-2014 (UNAUDITED)

Category	ENDING MARCH-2014 (UNAUDITED)												ENDING SEPTEMBER-2014 (UNAUDITED)											
	Court Cases		DSC/DSA CASES		Govt.Deptt.		PDCO Cases		Others		Total		Court Cases		DSC/DSA CASES		Govt.Deptt.		PDCO Cases		Others		Total	
	NO.	AMOUNT	NO.	AMOUNT	NO.	AMOUNT	NO.	AMOUNT	NO.	AMOUNT	NO.	AMOUNT	NO.	AMOUNT	NO.	AMOUNT	NO.	AMOUNT	NO.	AMOUNT	NO.	AMOUNT	NO.	AMOUNT
BORDER ZONE																								
DS	797	315.46	129	91.90	322	132.65	69099	4660.52	136765	4830.74	207112	10031.27	713	294.00	256	81.12	349	147.64	73262	4757.77	131145	4522.45	205625	9802.38
NRS	262	393.15	44	84.40	560	1293.27	20164	1426.25	17707	897.87	38737	4094.94	197	340.84	51	95.02	535	1461.72	19971	1417.55	16708	802.32	37462	4117.45
INDUSTARY	259	1396.09	33	56.96	1365	4497.60	3637	570.81	1346	155.11	6642	6676.57	220	1348.87	27	56.43	1380	5914.67	3714	600.14	1196	116.18	6537	8036.49
AGRICULTURE	3	2.11	0	0.00	0	0.00	23	1.11	4845	105.78	4871	109.00	3	2.11	0	0.00	0	0.00	22	0.89	4341	102.37	4356	105.37
OTHER	3	12.79	0	0.00	18	61.97	491	26.93	164	15.32	676	117.01	2	9.28	0	0.00	14	50.55	426	22.92	189	15.48	631	98.23
TOTAL OF BORDER ZONE	1324	2119.60	206	233.26	2265	5985.49	93414	6685.62	160829	6004.82	258038	21028.79	1135	1995.10	234	232.57	2278	7574.78	97395	6799.27	153579	5558.80	254621	22160.52
CENTRAL ZONE																								
DS	1633	476.60	1711	187.94	104	21.80	12538	531.67	34740	731.87	50726	1949.88	1790	546.89	372	124.03	160	55.13	18138	721.29	40090	1249.62	58550	2696.06
NRS	557	534.93	100	144.55	295	326.12	4717	203.48	9743	278.26	15412	1467.34	519	445.63	66	65.62	362	419.31	5154	289.54	11100	442.83	17201	1662.93
INDUSTARY	533	11120.90	116	284.63	510	571.34	603	132.51	810	61.14	2572	12150.52	612	11430.42	104	295.62	400	777.63	812	127.02	614	139.36	2632	12770.05
AGRICULTURE	14	6.47	0	0.00	19	4.71	0	0.00	104	4.73	137	15.91	21	12.99	1	1.86	0	0.00	0	0.00	0	0.00	22	14.85
Other	7	49.17	1	2.73	2	33.12	220	18.42	192	17.23	422	120.67	11	39.64	1	0.83	8	34.87	255	36.99	258	23.83	533	135.16
TOTAL OF CENTRAL ZONE	2744	12168.07	1928	619.85	930	957.09	18078	866.08	45589	1093.23	69269	15704.32	2953	12475.57	544	487.96	1020	1286.94	22359	1174.84	52062	1855.64	78938	17289.95
NORTH ZONE																								
DS	628	234.98	293	80.86	310	164.29	6956	352.97	26842	737.57	35029	1570.67	618	225.94	288	100.17	355	195.78	7503	330.56	24865	628.92	33629	1480.38
NRS	227	386.32	85	163.67	519	521.14	1515	58.01	5306	308.19	7652	1237.33	215	297.52	53	75.11	440	481.60	1584	57.62	4931	104.21	7203	1016.06
INDUSTARY	274	1261.98	48	53.40	1120	3477.40	58	11.81	47	4.97	1497	4809.56	219	1268.68	30	32.09	1104	4243.35	46	7.90	64	7.35	2463	5558.37
AGRICULTURE	89	52.64	9	2.68	102	21.41	74	10.67	265	27.25	539	114.65	121	74.81	7	4.35	102	21.41	69	9.15	256	24.36	555	134.08
OTHER	22	133.87	3	29.34	11	72.20	53	4.54	14	0.69	105	240.64	22	146.48	3	26.32	11	122.96	53	4.50	12	0.55	101	300.81
TOTAL OF NORTH ZONE	1190	2069.79	440	329.95	2062	4256.44	8656	438.00	32474	878.67	44822	7972.85	1195	2013.43	341	237.04	2012	5064.91	9235	418.73	30128	765.39	42951	8499.50
SOUTH ZONE																								
DS	867	254.17	143	86.32	319	139.15	18910	827.42	28997	625.17	49236	1932.23	664	168.51	66	27.53	374	174.64	18506	788.33	28853	621.30	48463	1780.09
NRS	142	183.35	16	57.36	766	897.19	3156	161.89	4251	148.19	8331	1447.98	135	166.52	15	12.53	648	859.02	3244	164.96	4822	161.44	8864	1364.47
INDUSTARY	320	4564.14	18	125.38	1593	3168.77	404	156.97	250	46.49	2585	8061.75	311	4466.95	15	185.55	1749	4553.73	383	139.10	842	41.60	2401	9386.93
AGRICULTURE	41	29.01	0	0.00	0	0.00	15	1.14	0	0.00	56	30.15	44	30.22	1	0.08	0	0.00	15	1.14	0	0.00	60	31.44
OTHER	4	56.79	0	0.00	2	71.40	88	15.83	42	4.70	136	148.72	3	12.48	0	0.00	1	86.31	84	15.83	40	4.70	128	119.82
TOTAL OF SOUTH ZONE	1374	5087.46	177	269.06	2680	4276.51	22573	1163.25	33540	824.55	60344	11620.83	1155	4844.68	98	225.69	2772	5674.20	22232	1109.14	34659	829.04	60316	12682.75
WEST ZONE																								
DS	3898	895.09	3	0.28	315	47.96	56189	5721.00	95715	1993.23	156120	6658.16	3720	878.13	5	1.68	349	63.12	57117	3750.82	93965	1708.73	155156	6402.48
NRS	731	495.31	1	0.25	603	563.80	11170	639.86	9282	336.20	21787	2035.44	731	502.24	2	11.63	543	621.65	13174	692.75	10033	279.30	24483	2107.57
INDUSTARY	254	707.22	1	1.28	1990	5736.77	1279	235.53	487	35.66	4011	6716.46	278	704.57	2	18.94	2001	6885.26	1221	225.66	878	43.93	4380	7878.38
AGRICULTURE	3	1.11	0	0	0	0.00	0	0.00	0	0.00	3	1.11	3	1.11	0	0	0	0.00	0	0.00	0	0.00	3	1.11
OTHER	0	0.00	0	0	2	42.37	0	0.00	0	0.00	2	42.37	0	0.00	0	0	2	59.08	0	0.00	0	0.00	2	59.08
TOTAL OF WEST ZONE	4886	2099.33	5	1.81	2910	6390.90	68638	4596.41	105484	2365.09	181923	15453.54	4732	2086.05	9	32.25	2895	7629.11	71512	4669.23	104876	2031.96	184024	16448.60
PSPCL AS A WHOLE																								
DS	7823	2176.90	2279	447.30	1370	505.85	163692	10093.58	323059	8918.58	498223	22142.21	7505	2113.47	887	334.53	1587	636.32	172526	10357.55	318918	8731.02	501423	22172.89
NRS	1919	1973.06	246	450.23	2743	3601.52	40722	2489.51	46289	1768.71	91919	10283.03	1797	1752.75	187	259.91	3192	3843.30	43107	2622.42	47594	1790.10	95213	10268.48
INDUSTARY	1590	19050.33	216	521.65	6578	17451.88	5981	1087.63	2942	303.37	17307	38414.86	1640	19219.49	179	567.63	5722	22374.64	6176	1099.82	3094	348.42	17811	43610.00
AGRICULTURE	150	91.34	9	2.68	121	26.12	112	12.92	5214	137.76	5606	270.82	192	121.24	9	8.29	11	21.41	106	11.19	4597	126.73	5006	286.85
OTHER	36	252.62	6	32.07	35	281.06	852	65.72	412	37.94	1341	669.41	36	207.88	4	27.15	2037	354.27	818	80.24	501	44.56	1395	714.10
TOTAL OF PSPCL AS A WHOLE	11518	23544.2	2756	1453.93	10847	21866.43	211359	13749.36	377916	11166.36	614396	71780.33	11170	23414.83	1266	1215.51	12549	27229.94	222733	14171.21	374704	11040.83	620450	77072.33

Note:

a) Total figure of defaulting amount excludes the amount Rs.89.61 crore which relates to MC Amritsar prior to its taking over by the erstwhile PSEB now PSPCL i.e. 1.4.95 and the matter already stood taken by CE/Commercial with the Principal Secretary/I&P, Punjab Government.

b) Figures revised in respect of South Zone during March 2014 vide memo no.4831-16 dated 15-5-2014 and West Zone E mail dated 5-6-2014.

DY. CAO/REVENUE,
PSPCL, PATIALA

DEFAULTING AMOUNT OUTSTANDING AGAINST GOVT. DEPARTMENT CONNECTIONS ENDING SEPTEMBER 2014 (UNAUDITED)

SR.NO	DEPARTMENT	ZONE					(Rs. In lacs)
		BORDER	CENTRAL	NORTH	SOUTH	WEST	TOTAL
1	CIVIL DEFENCE	1.59	3.10	9.49	0.00	0.00	**14.18**
2	DC OFFICE	12.25	11.45	9.53	8.11	11.73	**53.07**
3	PSTC	21.70	0.00	21.41	33.73	0.00	**76.84**
4	PUNJAB POLICE	128.03	154.11	331.45	333.33	101.39	**1048.31**
5	M.C.WATER WORKS	694.50	375.03	31.58	427.09	2092.66	**3620.86**
6	PUBLIC HEALTH	2497.88	324.90	4099.18	3581.57	3473.99	**13977.52**
7	MES/BSF	33.55	0.00	0.23	0.00	0.00	**33.78**
8	SDM OFFICE	5.85	23.92	6.44	13.95	14.50	**64.66**
9	TEHSIL COMPLEX	70.95	41.44	37.74	45.05	28.88	**224.06**
10	PUDA COMPLEX	0.00	0.11	0.00	35.82	5.96	**41.89**
11	DISTT. SPORTS OFFICE	0.00	0.00	0.00	3.50	2.16	**5.66**
12	GOVT.HOSPITAL/DISPENSARY	244.39	156.93	304.57	424.81	262.99	**1393.69**
13	FOREST DEPARTMENT	5.27	0.00	1.77	5.12	6.83	**18.99**
14	IRRIGATION DEPTT.	2566.99	2.45	32.43	21.37	663.21	**3286.45**
15	PWD ELECY.DEPTT.	0.20	0.00	3.69	28.81	8.84	**41.54**
16	PWD B&R	11.24	5.42	1.67	29.91	2.03	**50.27**
17	PUNSUP	0.00	0.00	0.00	0.31	3.87	**4.18**
18	GOVT.SCHOOL/COLLEGE/ITI	41.14	9.53	6.67	28.57	56.33	**142.24**
19	M.C./LOCAL BODIES	1047.30	4.54	103.72	102.27	697.34	**1955.17**
20	AGRICULTURE DEPTT	0.88	0.09	2.36	0.00	0.13	**3.46**
21	CENTRAL DEPARTMENT	0.41	0.13	0.51	360.67	1.37	**363.09**
22	ANIMAL HUSBANDARY	0.35	0.00	0.00	0.37	1.11	**1.83**
23	SOCIAL DEPARTMENT	0.00	0.00	0.00	0.00	0.09	**0.09**
24	PANCHYATI RAJ	41.88	23.63	3.42	123.25	70.84	**263.02**
25	STATISTICAL DEPARTMENT	0.00	0.00	0.00	0.00	0.00	**0.00**
26	FOOD AND SUPPLY	0.33	0.00	0.81	0.12	0.00	**1.26**
27	REVENUE DEPARTMEN T	1.99	3.16	0.00	0.65	0.28	**6.08**
28	SEWERAGE BOARD	2.30	0.26	0.06	0.38	17.46	**20.46**
29	BDO OFFICE	1.91	0.00	0.73	0.04	4.11	**6.79**
30	ZILA PARISHAD	0.00	0.00	0.00	0.00	2.42	**2.42**
31	WELFARE DEPARTMENT	0.02	0.00	3.85	0.00	1.47	**5.34**
32	CID	0.00	0.00	0.00	0.00	0.00	**0.00**
33	CIVIL COURTS	29.31	0.00	0.02	3.70	1.81	**34.84**
34	JAIL DEPTT.	22.52	0.00	0.00	0.00	0.00	**22.52**
35	OTHER DEPARTMENTS	90.05	146.74	51.58	61.70	95.31	**445.38**
	TOTAL	**7574.78**	**1286.94**	**5064.91**	**5674.20**	**7629.11**	**27229.94**

SOURCE OF DATA : EIC/CE, DS CONCERNED.

SAS/RM

DY. CAO/REVENUE
PSPCL, PATIALA

Annex - G.1

C-2

Performa for progress of works under APDRP- Part-B during fortnight (16-09-2014 to 30-09-2014)

Name of Firm					M/s A to Z Mantenance and Engineering Pvt. Ltd.			Remarks
Package No					1			
Towns covered					JAITO, KOTKAPURA, MOGA, ZIRA, JALALABAD, FARIDKOT, FEROZPUR CITY, FEROZPUR CANTT, FAZILKA, MUKTSAR, MANSA, BATHINDA, GIDDERBAHA, ABOHAR, MALOUT, RAMPURA (16 No.			
S.No	Description		Unit	Total Scope of Work	Already Completed	Progress during Fortnight	Upto date progress	Work yet not started by the contractor.
1	Erection of Grid Sub Stations	New	no					
		Aug	no					
2	Erection of 66 KV lines/ UG cables	New	Km					
		Aug	Km					
	Erection of 11 KV lines	New	Km					
		Aug	Km					
3	Erection of DT's	New	No					
		Aug	no					
4	Erection of LT lines	New	Km					
		Aug	Km					
		LT cable	Km					
5	Replacement of electromechanical meters		no					
6	Shifting of meters in Pillar boxes		no					

NOTE:

(i)Survey of Distribution network of 9 No. Towns out of 16 No. Completed and commencement orders issued for 9 No. towns. Scope cannot be finalised till the total survey for all the cities is completed.

(ii)No material supplied yet.

(iii)No work started.

Annex. - G 2

Annex-3

Performa for progress of works under APDRP- Part-B during fortnight (16-09-2014 to 30-09-2014)

Name of Firm	M/s Godrej & Boyce
Package No	2,3
Towns covered	KAPURTHALA, NAKODAR, TARNTARAN, PATTI,

S.No	Description		Unit	Total Scope of Work	Already Completed	Progress during Fortnight	Upto date progress
1	Erection of Grid Sub Stations	New	no	10	6 No. Civil Work Commenced	1 No. Civil Work Commenced	7 No. Civil Work Commenced. Arrival of material commenced.
		Additional/ Augmentation	no	4	3 No. Civil Work Completed	1 No. Civil Work Commenced	3 No. Civil Work Completed+1 No. Civil Work Commenced. Arrival of material commenced.
2	Erection of 66 KV lines/ UG cables	New	Km	49.264	Tower material for 25 Km lines is in advance stage of procurement by the contractor. Work will start after receipt of material.		%age of work
		Aug	Km	NIL	NIL	NIL	NIL
	Erection of 11 KV lines	New	Ckt. Km	363.964	2.823	0.43	3.253	0.89
		Aug	Ckt. Km	893.18	26.112	17.891	44.003	4.93
3	Erection of DT's	New	No	1640	28	1	29	1.77
		Aug	no	1140	117	4	121	10.61
4	Erection of LT lines	New	Ckt. Km	75.258	4.06	0.06	4.12	5.47
		Aug	Ckt. Km	1130.817	149.284	11.465	160.749	14.22
		LT cable	Ckt. Km	383.486	2.398	6.482	8.88	2.32
5	Replacement of electromechanical meters		no	95249	7585	146	7731	8.12
6	Shifting of meters in Pillar boxes		no	156863	8241	1191	9432	6.01

Note: (i) Out of 10 new No. New grids, land for 3 No. grids at Malerkotla, Batala and Phagwara not in possession.

Annex. G3

Annex-3

Performa for progress of works under APDRP- Part-B during fortnight (16-09-2014 to 30-09-2014)

Name of Firm	M/s L & T
Package No	4,5,6,7
Towns covered	AMRITSAR, JALANDHAR, LUDHIANA EAST, LUDHIANA WEST (4 No. Towns)

S.No	Description		Unit	Total Scope of Work	Already Completed	Progress during Fortnight	Upto date progress	
1	Erection of Grid Sub Stations	New	no	13	3 No. Civil Work Completed	1 No. Civil Work Commenced	1 No. Commenced + 90% of 3 Substations Completed. Arrival of material started.	
		Aug	no	3	3 No. Power T/F received and will be augmented before 15 Nov.			
2	Erection of 66 KV lines/ UG cables	New	Km	29.368	Work of 1 No. Line at Ludhiana Commenced and tower material for remaining is under dispatch			
		Aug	Km	NIL	NIL	NIL	NIL	
	Erection of 11 KV lines	New	Ckt. Km	860.641	16.216	5.693	21.909	2.55
		Aug	Ckt. Km	795.568	11.146	29.532	40.678	5.11
3	Erection of DT's	New	No	1980	72	23	95	4.80
		Aug	no	4132	343	5	348	8.42
4	Erection of LT lines	New	Ckt. Km	157.18	12.02	0	12.02	7.65
		Aug	Ckt. Km	1543.724	150.523	13.043	163.566	10.60
		LT cable	Ckt. Km	2186.4	24.843	28.609	53.452	2.44
5	Replacement of electromechanical meters		no	105624	4566	0	4566	4.32
6	Shifting of meters in Pillar boxes		no	158649	7325	671	7996	5.04

Note: Out of 13 No. New Grids, land for 6 No. Grid not in possession (3 No. in Jalandhar, 3 No. in Amritsar).

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