

**BEFORE THE PUNJAB STATE ELECTRICITY REGULATORY COMMISSION,
CHANDIGARH.**

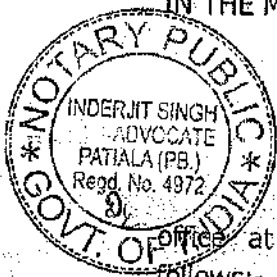
Petition No. of 2017

IN THE MATTER OF:

FILING OF ANNUAL PERFORMANCE REVIEW (APR) FOR FY 2017-18 AND REVISED ESTIMATE FOR FY 2018-19 UNDER REGULATION 11 and 61 OF PSERC (TERMS AND CONDITIONS FOR DETERMINATION OF GENERATION, TRANSMISSION, WHEELING AND RETAIL SUPPLY TARIFF) REGULATIONS 2014.

AND

IN THE MATTER OF :




Punjab State Power Corporation Limited, The Mall, Patiala

Affidavit verifying facts contained in the petition enclosed.

I, Er. Iqbal Singh S/O Sh. Kirpal Singh aged about 58 years, having my office at Shed No. F-4, Shakti Vihar, PSPCL, Patiala do solemnly affirm and declare as follows:-

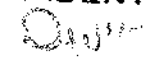
- a) That I am the Chief Engineer/ARR & TR. of Punjab State Power Corporation Limited, the petitioner in the above matter and am duly authorized by the Corporation to make affidavit in this behalf.
- b) That I solemnly affirm:-
 - i) that the contents of the submission for filing Annual Performance Review for FY 2017-18 and Revised Estimate for FY 2018-19 for Electricity Business of PSPCL are true to the best of my knowledge and belief 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.


The Contents of this affidavit/document has been read over to the deponent/excuseant who has accepted it true and correct.


Deponent
(Er. Iqbal Singh)

I, solemnly affirm at Patiala on 29-11-2017 that the contents of the above affidavit are true to the best of my knowledge & belief and nothing has been concealed therein.

ATTESTED AS IDENTIFIED


NOTARY PUBLIC
PATIALA (PB.) INDIA


Deponent
(Er. Iqbal Singh)





**PETITION FOR APR FOR FY 2017-18
&
REVISED ESTIMATES FOR FY 2018-19**

Submitted by



November 30, 2017

Volume -I

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BEFORE THE PUNJAB STATE ELECTRICITY REGULATORY COMMISSION,
CHANDIGARH

Case No. _____

IN THE MATTER OF: Filing of the Petition for the approval of PSPCL's APR for FY.2017-18 & Revised Estimates for FY 2018-19 under Section 62 and 64 of the Electricity Act, 2003 read with Regulation 11 and 61 of PSERC (Terms and Conditions of Determination of Generation, Transmission, Wheeling and Retail Supply Tariff) Regulations, 2014

AND IN THE MATTER OF: Punjab State Power Corporation limited (hereinafter referred as "PSPCL" or "the Petitioner")

The Petitioner respectfully submits as under: -

- 1) 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"
- 2) The Petitioner submits that the Hon'ble Commission has issued the PSERC (Terms and Conditions of Determination of Generation, Transmission, Wheeling and Retail Supply Tariff) Regulations, 2014 (hereinafter referred to as "PSERC MYT Regulations, 2014") in exercise of powers conferred on it by Section 61 read with Section 181(2) of the Electricity Act 2003 (No. 36 of 2003). The said Regulations shall be applicable to Generating Stations, Transmission system, SLDC and Distribution system where; tariff for generation and transmission is not determined under Section 63 of the Electricity Act, 2003 through transparent process of competitive bidding in accordance with the guidelines issued by the Central Government.
- 3) Accordingly, in line with the above provisions of the PSERC MYT Regulations 2014, the Petitioner is hereby filing petition seeking approval of APR for FY 2017-18 & Revised Estimates for FY 2018-19. While filing the application for D&RS Business, PSPCL has endeavoured to comply with the applicable legal and regulatory obligations, directions and stipulations contained in the D&RS License, Tariff Order, the Guidelines and previous ARR and Tariff Orders to the extent possible. In spite of the limitations in the accounting and information systems of the Licensee, inherited from the parent PSEB, it has taken all possible steps to compile and furnish the required details. However, the current ARR application may not be fully compliant in some respects, as are explained with reasons, and therefore, accordingly, PSPCL seeks necessary waivers and relaxation.



PRAYER TO THE HON'BLE COMMISSION

The Petitioner respectfully prays to the Commission:

- a) To admit the Petition seeking approval of APR for FY 2017-18 and Revised Estimates of ARR for FY 2018-19 for Generation and Distribution in accordance with the PSERC MYT Regulations, 2014;
- b) To approve the petition for Generation & Distribution Business for FY 2017-18 to FY 2018-19 as proposed by the Petitioner in the said Petition;
- c) To allow to submit true up for FY 2016-17 as an additional submission.
- d) To pass any other order/s as the Hon'ble Commission may deem fit and appropriate under the circumstances of the case and in the interest of justice;
- e) PSPCL also prays to the Hon'ble Commission to take the appropriate view on the revenue gap projected by PSPCL as per the PSERC MYT Regulations while determining the tariff for the FY 2018-19.
- f) To condone any error/ omission and to give opportunity to rectify the same;
- g) The filing is being done based on the best available information and in case of any change, the Petitioner may be permitted to make further submissions, addition and alteration to this Petition as may be necessary from time to time.

Date: 30 November 2017

BY THE APPLICANT THROUGH

Er. Iqbal Singh,
Chief Engineer / ARR&TR,
PSPCL, Patiala.



VOLUME -I

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List of Abbreviations

Sr.No	Abbreviatio	Descriptions
1.	A&G	Administrative and General
2.	AC	Auxiliary Consumption
3.	APR	Annual Performance Review
4.	ARR	Aggregate Revenue Requirement
5.	AS	Accounting Standard
6.	CAGR	Compound Annual Growth Rate
7.	CAPEX	Capital Expenditure
8.	CERC	Central Electricity Regulatory Commission
9.	CGS	Central Generating Station
10.	CoS	Cost of Supply/Service
11.	CPPs	Captive Power Plants
12.	Cr	Crores
13.	CWIP	Capital Work in Progress
14.	DF	Distribution Franchisee
15.	Discom	Distribution Companies
16.	DPS	Delayed Payment Surcharge
17.	DS	Domestic Service
18.	DSM	Demand Side Management
19.	DTC	Distribution Transformer
20.	EA/The Act	The Electricity Act 2003
21.	F&A	Finance & Accounts
22.	FY	Financial Year
23.	GFA	Gross Fixed Assets
24.	G.O.	Government Order
25.	GoI	Government of India
26.	GoP	Government of Punjab
27.	HR	Human Resource
28.	HRA	House Rent Allowance
29.	HT	High Tension
30.	HEP	Hydro Electric Power
31.	IPP	Independent Power Producers
32.	KV	Kilo Volt
33.	kVA	Kilo Volt Ampere
34.	kVAh	Kilo Volt Ampere Hour
35.	kW	Kilo Watt

Sr.No	Abbreviatio	Descriptions
36.	kWh	Kilo Watt Hour
37.	LF	Load Factor
38.	LT	Low Tension
39.	MD	Maximum Demand
40.	MOD	Merit Order Dispatch
41.	MoP	Ministry of Power
42.	MOU	Memorandum of Understanding
43.	MU	Million Units(Million kWh)
44.	MVA	Mega Volt Ampere
45.	MW	Mega Watt
46.	MYT	Multi Year Tariff
47.	NEP	National Electricity Policy
48.	NTP	National Tariff Policy
49.	NTPC	National Thermal Power Corporation
50.	O&M	Operation & Maintenance
51.	PAF	Plant Availability Factor
52.	PF	Provident Fund
53.	PFC	Power finance Corporation
54.	PLF	Plant Load Factor
55.	PLR	Prime Lending Rate
56.	PPA	Power Purchase Agreement
57.	RE	Revised Estimates
58.	PSD	Power Service Division
59.	REC	Rural Electrification Corporation
60.	R&M	Repair and Maintenance
61.	ROE	Return on Equity
62.	RPO	Renewable Purchase Obligation
63.	Rs	Rupees
64.	SBI	State Bank of India
65.	SLM	Straight Line Method
66.	SHR	Station Heat Rate
67.	T&D	Transmission and Distribution
68.	PSPCL	Punjab State Power Corporation Limited
69.	PSERC	Punjab State Electricity Regulatory Commission
70.	w.e.f.	With effect from
71.	YoY	Year on Year

1 Introduction

1.1 Background

1.1.1 Unbundling of Punjab State Electricity Board

The Electricity Act, 2003 ("the Act") was enacted by the Parliament of India on June 10, 2003 (No. 36 of 2003), which envisaged the restructuring of the State Electricity Boards.

In exercise of the powers conferred under sub-section 4 of Section 131 of the Act, the Government of Punjab vide Notification No. 1/9/08-EB(PR) 196 dated April 16, 2010, restructured and unbundled the erstwhile Punjab State Electricity Board, into two successor companies, viz.

- Punjab State Power Corporation Ltd. (PSPCL), to undertake generation and distribution business,
- Punjab State Transmission Corporation Ltd. (PSTCL), to undertake transmission of electricity along with operation of SLDC functions.

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.

First Amendment in Transfer Scheme notified by Government of Punjab:

Government of Punjab (GoP) amended the Transfer Scheme vide Notification No. 1/4/04EB (PR)/620 on December 24, 2012 known as Punjab Power Sector Reforms Transfer (First Amendment) Scheme, 2012. The salient features of the aforesaid amendments are as under:

- a) 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 PSPCL and PSTCL, respectively, on yearly basis, as may be decided by the Punjab State Electricity Regulatory Commission.
- b) The Terminal Benefit Trusts in respect of pension, gratuity and leave encashment, shall be progressively funded by PSPCL and PSTCL, respectively, as decided by the Punjab State Electricity Regulatory Commission, in the ratio of 88.64:11.36,

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over a period of 15 Financial Years commencing from April 1, 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 PSTCL and the trust shall be administered jointly by the said PSPCL and PSTCL.

- c) It is also mentioned that the actual amount of pension; gratuity and leave encashment paid / to be paid on and with effect from April 16, 2010 to March 31, 2014, shall be shared by PSPCL and PSTCL, in the ratio of 88.64:11.36 on yearly basis.
- d) The General Provident Fund Trust shall be funded by PSPCL and PSTCL both, as per the apportionment made in the opening balance sheet, on and with effect from the April 16, 2010, and the same shall be funded over a period of ten years commencing on and with effect from the April 1, 2013, along with interest as applicable.
- e) Also provided that for the period commencing from April 16, 2010 to March 31, 2013, PSPCL and PSTCL shall be liable to pay interest on the apportioned General Provident Fund liability, at the rate as applicable for the respective financial years.
- f) The PSPCL and PSTCL, 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 April 16, 2010, to the date of issuance of this notification, and thereafter all the General Provident Fund matters, shall be settled through trust.
- g) Until otherwise directed by the State Government, the PSPCL and PSTCL 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.
- h) The Government of Punjab notified the final opening balance sheet for PSPCL and PSTCL as on the April 16, 2010.

1.1.2 Multi Year tariff Regulations

Section 61(f) of the Act confers powers to State Electricity Regulatory Commission to specify the terms and conditions for determination of tariff on the basis of Multi Year Tariff principles. Most of the State Electricity Regulatory Commissions including the Hon'ble Commission have moved from an annual tariff framework to a multi-year tariff (MYT) regime, with an aim to bring about clarity on regulatory principles, to reduce regulatory risks and to incentivize efficient operations by Utilities. The MYT framework provides greater regulatory certainty by providing Utilities a longer period to plan, forecast and implement their efficiency improvement plan.

The Hon'ble Commission, in exercise of the powers conferred on it by section 181



of the Electricity Act 2003 (Act 36 of 2003) and all other powers, notified the PSERC (Terms and Conditions for Determination of Generation, Transmission, Wheeling and Retail Supply Tariff) Regulations, 2014 (hereinafter referred as "PSERC MYT Regulations, 2014") on July 1, 2014. Further, as per the Hon'ble Commission's Notification dated May 28, 2015, the effective date of enforcement of these Regulations shall be April 1, 2017 and the three year MYT Control Period is from FY 2017-18 to FY 2019-20.

As per the Regulations, the Distribution Licensee is required to file a MYT petition for Control Period of three financial years from April 1, 2017 to March 31, 2020. As per PSERC MYT Regulations, 2014, PSPCL is handling both Generation and Distribution Business. In accordance to that PSPCL had submitted the MYT petition for Generation and Distribution in separate sections on dated 30th November 2016.

1.2 Present Approach

1.2.1 Submission of Annual Performance Review

The Hon'ble Punjab State Electricity Regulatory Commission ("the Commission" or "PSERC") has notified the PSERC (Terms and Conditions of Determination of Generation, Transmission, Wheeling and Retail Supply Tariff) Regulations, 2014 (hereinafter referred to as "PSERC MYT Regulations, 2014") in exercise of powers conferred on it by Section 61 read with Section 181(2) of the Electricity Act 2003 (No. 36 of 2003). The said Regulations are applicable to Generating Stations, Transmission system, SLDC and Distribution system where tariff for generation and transmission is not determined under Section 63 of the Electricity Act, 2003 through transparent process of competitive bidding in accordance with the Guidelines issued by the Central Government.

PSPCL submits that, in accordance with Regulation 9 and 10 of PSERC MYT Regulations, 2014, it has filed Petition for approval of Capital Investment Plan and Business Plan (Petition No. 46 of 2016) for the Control Period from FY 2017-18 to FY 2019-20 on May 30, 2016.

Further, PSPCL has filed the Petition for True-up for FY 2014-15, Review of FY 2016-17 and approval of ARR and Transmission Tariff for MYT Control Period from FY 2017-18 to FY 2019-20 (Petition No. 90 of 2016) on November 30, 2016. Subsequently, PSPCL filed Petition (No.33 of 2017) for True-Up of FY 2015-16 in respect of its generation and distribution business on 24 April 2017.

The Commission vide its Order dated October 23, 2017 has approved the True-up



of FY 2014-15, True-up for FY 2015-16, Review of FY 2016-17 and Tariff for PSPCL for MYT Control period FY 2017-18 to FY 2019-20.

However, the Commission provisionally approves the Capital Investment Plan (Petition No. 46 of 2016) and final Order in this regard shall be issued separately.

Further, Regulation 11 of PSERC MYT Regulations, 2014 specifies as under:

"11. ANNUAL REVIEW OF PERFORMANCE

11.1. *The Applicant shall make an application for Annual Performance Review and tariff resetting not less than 120 days before the close of each year of the control period.*

11.3. *The Applicant shall publish its application filed for Annual Performance Review as required by Conduct of Business Regulations. The Applicant shall also display the application on its official website.*

11.4. *The Annual Performance Review shall include the details of actual capital expenditure, details of income tax paid and actual operational and cost data to enable the Commission to monitor the implementation of its order including comparison of actual performance with the approved forecasts (and reasons for deviations). In addition, the Applicant shall also submit Annual Statement of its performance of generation business (indicating the cost data - plant-wise, and performance parameters - unit-wise), transmission business or distribution business, as the case may be, including a copy of its latest audited accounts.*

11.5. *The Applicant shall provide any other information, as may be asked for by the Commission with a view to assess the reasons and extent of any variation in the performance from the approved forecast and the need for tariff resetting.*

11.6. *In the application, Applicant shall submit information for the purpose of calculating expected tariff and expenditure along with information on financial and operational performance for the previous year(s). The information for the previous year(s) shall be based on audited accounts and in case audited accounts for the previous year(s) are not available, audited accounts for the latest previous year shall be filed along with unaudited accounts (provisional accounts) for all the succeeding years.*

11.7. *The scope of the Annual Performance Review shall be a comparison of the performance of the Applicant with the approved forecast of ARR along with the performance targets specified by the Commission.*

11.8. *The Commission shall review the application made under the preceding clauses based on the same principles as approved in the MYT Order on original application for determination of ARR and Tariff and upon completion of such review, either approve the proposed modification(s) with such changes as it deems appropriate, or reject the application for reasons to be recorded in writing. "*



Also, Regulation 61 of PSERC MYT Regulations, 2014 specifies as under:

"61. ANNUAL PERFORMANCE REVIEW FILING

The Applicant shall file the Annual Performance Review on or before 30th November in each year of the control period as per the details mentioned in regulation 11 for the Commission's review and approval."

In line with the above provisions of regulations, PSPCL is filing the present Petition for Annual Performance Review for FY 2017-18 and approval of revised ARR forecast for FY 2018-19 and determination of tariff for FY 2018-19.

1.3 Overall approach for filing Annual Performance Review

Regulation 11 of PSERC MYT Regulations specifies that Annual Performance Review shall include the details of actual capital expenditure, details of income tax paid and actual operational and cost data. Also, it is mentioned that the information for the previous year(s) shall be based on audited accounts and in case audited accounts for the previous year(s) are not available, audited accounts for the latest previous year shall be filed along with unaudited accounts (provisional accounts) for all the succeeding years.

PSPCL submits that Hon'ble Commission vide its MYT Order dated October 23, 2017 has approved ARR for FY 2017-18 to FY 2019-20 on the basis of audited accounts for FY 2015-16 and provisional accounts for FY 2016-17. The audited accounts for FY 2015-16 and provisional accounts for FY 2016-17 have already been submitted to the Hon'ble Commission. PSPCL further submits that the annual accounts for FY 2016-17 are yet to be finalised.

In view of the above, PSPCL submits the present Petition on the basis of provisional accounts for FY 2016-17, actual values for first half for FY 2017-18, estimated values for second half for FY 2017-18 and revised projections for FY 2018-19.

SECTION-I - TRUE UP FOR FY 2016-17

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2 Background

The Hon'ble Commission had approved the ARR and Tariff for FY 2017-18 in its Tariff Order dated 23rd October 2017, which was based on the costs and revenue estimated by PSPCL. PSPCL in its ARR petition for FY 2017-18 had submitted the revised estimates of costs and revenue pertaining to Generation, Trading and Distribution functions for FY 2016-17. 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 2017-18 and approved the revised ARR for FY 2016-17 in the Review.

Provisional True up for FY 2016-17

As the Hon'ble Commission in the Tariff Order for FY 2016-17 had decided not to undertake provisional true-up of PSPCL for FY 2014-15 on grounds of non-availability of audited annual accounts for the year, PSPCL now prays that the trueing up of costs and revenue for FY 2016-17 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 2016-17 is under process. The True up of costs and revenue for FY 2016-17 will be submitted as soon as the audited accounts for FY 2016-17 are available.

**SECTION-II - APR FOR FY 2017-18
AND REVISED ESTIMATES FOR
FY 2018-19**



3 PROJECTION FOR FY 2017-18 and FY 2018-19

3.1 Metered sales (other than Agriculture)

Revised estimate of metered energy Sale for FY 2017-18 and FY 2018-19.

The energy sales to metered categories for FY 2017-18 have been re-estimated on the following basis:

- Actual figures of first 6 months (April 2017 to September 2017)
- For the next six months (October 2017 to March 2018) category wise half yearly CAGR of the second half year for the period FY 2013-14 to FY 2016-17 has been calculated.

Table 1: Three year CAGR

Consumer Category	3 Yr CAGR (FY 2013-14 to FY 2016-17)	3 Yr CAGR Half Yearly (FY 2013-14 to FY 2016-17)
Domestic	7.40%	4.98%
Commercial (NRS)	8.02%	6.87%
Small Supply	2.77%	2.01%
Medium Supply	5.10%	6.34%
Large Supply	4.26%	5.41%
Street Lighting	4.10%	0.72%
Bulk Supply	3.06%	0.81%
Railway Traction	8.46%	7.72%

- For the energy sales to the metered consumers categories for FY 2018-19 has been projected based on categories wise annual CAGR for the period of the FY 2013-14 to FY 2016-17.
- The total revised estimates of sales for FY 2017-18 and FY 2018-19 are as follows

Table 2: Revised Estimates of Sales for FY 2017-18 and FY 2018-19 (MUs)

Consumer Category	FY 2017-18 MY1 order	FY 2018-19 MY1 order	FY 2017-18 H1 (Actual)	FY 2017-18 H2	FY 2017-18 (APR)	FY 2018-19 (RE)
Domestic	14387.66	15597.33	7,868.45	5,927.86	13,796.31	14,816.97
Commercial (NRS)	4190.92	4527.60	2,194.93	1,833.45	4,028.39	4,351.47
Small Supply	1005.93	1023.63	527.90	480.03	1,007.93	1,035.80
Medium Supply	2310.47	2421.70	1,132.32	1,211.58	2,343.90	2,463.43
Large Supply	12072.94	12289.62	6,254.69	6,393.30	12,647.99	13,187.05
Street Lighting	255.47	283.59	94.36	93.34	187.70	195.39
Bulk Supply	744.99	782.65	363.26	310.61	673.87	694.47
Railway Traction	187.22	200.38	108.50	98.05	206.55	224.02
Total Metered Sales	35155.60	37126.50	18,544.42	16,348.21	34,892.63	36,968.61

3.2 Agricultural Consumption

Revised estimate of Agriculture consumption for FY 2017-18 and FY 2018-19:

The Agricultural consumption for FY 2017-18 and FY 2018-19 has been re-estimated on the following basis:

- a) Actual consumption of first 6 months (April 2017 to September 2017) is 9100.88 MUs. PSPCL submits that it has been observed that the agriculture consumption for first half of FY 2017-18 has increased to 9100.88 MUs over the consumption of 9,036.02 MUs for first half of FY 2016-17 which showed a nominal growth.
- b) For the next six months (October 2017 to March 2018) sales has been estimated by considering increased actual sales of H2 of FY 2016-17 by 3 year CAGR i.e. (9.48%), Therefore, base on the above consideration agricultural consumption for the second half of FY 2017-18 has been projected at 3254.95 MUs.
 - i. As per revised estimates AP consumption for FY 2017-18 and FY 2018-19 is projected to be 12,355.83 MUs and 13,313.88 MUs respectively.
 - ii. Hereby, it is to be noted that for the estimation of agriculture sales PSPCL has adopted AP consumption based on pumped energy from FY 2016-17. For the computation of AP consumptions for FY 2017-18 and FY 2018-19 on pumped energy; PSPCL has considered CAGR of last three years based on pumped energy agriculture sales. However, for the AP consumption of Kandi area mixed feeders PSPCL has calculated the same as 45% of the total consumption.
- c) PSPCL prays the Hon'ble Commission to kindly accept the PSPCL submission and allow AP consumption of Kandi area mixed feeders as 45% of the total consumption.
 - i. 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. All new AP connections and shifting of connections are on HVDS line only and therefore losses on AP feeders are nowhere more than 6-10%.

3.3 Total Energy Sales

The Sales to common pool consumers for FY 2017-18 and FY 2018-19 has been projected based on the provisional figures of sales to common pool consumers for FY 2016-17.

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

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is submitted that the Hon'ble Commission may approve the revised estimated sales for FY 2017-18 and FY 2018-19.

Following table summarizes the consolidated sales for FY 2017-18 and FY 2018-19.

Table 3: Total Energy Sales (MUs)

Description	FY 2017-18 MYT order	FY 2018-19 MYT order	FY 2017-18 (APR)	FY 2018-19 (RE)
Metered Sale	35155.60	37126.50	34,892.63	36,968.61
AP sales	11811.90	12078.05	12,355.83	13,313.88
Total sales within state	46967.50	49204.55	47,248.46	50,282.49
Sales to common	311.68	341.64	308.99	341.64
Sales outside state	52.66	52.66	353.88	126.18
Total Energy Sales	47331.84	49598.85	47,911.34	50,750.32

3.4 Power Purchase and Fuel Cost for FY 2017-18

3.4.1 Power Purchase

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) IPP's
- c) Co-Generation Plants
- d) Banking Arrangements
- e) Traders

Assessment of Availability

The energy availability from PSPCL's Own Thermal and Hydro generating Stations has been considered based on Generation Plan prepared for the FY 2017-18 and FY 2018-19. PSPCL has projected the power procurement from own thermal plant as per Merit Order principal excluding one Unit for each GGSSTP and GHTP. The Royalty to HP from Shanan and Share to HP from RSD has been taken as the same %age of Gross Generation for the corresponding period of previous year.

PSPCL has scheduled its procurement from various CGSs and IPP's on the merit order principles. Following factors have been considered for deciding the



procurement/generation schedule:

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

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.

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.

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

Projected energy availability from all existing Central Hydro Generating Stations and BBMB stations has been taken as per target provided by Central Hydro Generating Stations and BBMB stations for the FY 2017-18 and FY 2018-19. Inter-State Transmission losses have been taken same % age of actual grid losses to the Gross power import for March 2016.

Projected Energy from the New Hydro and Thermal projects has been calculated in accordance to the CEA regulations / Designed Energy as mentioned in the PPA.

Furthermore, State of Punjab is also purchasing the power from Independent Power Producers (IPPs) including Talwandi Sabo, Rajpura TPS (NPL), Goindwal Sahib, etc.

However it should be noted that during the FY 2017-18 and FY 2018-19, PSPCL is projected to have surplus energy available from tied up sources. In order to manage demand and maintain energy balance, the surplus energy has been projected to be surrendered. Surrendering has been projected as per Merit Order of



power purchase from existing thermal and gas stations on monthly basis. Merit Order is based upon the variable rates of September 2017. After surrender of energy, only variable charges have been reduced and fixed/other charges are assumed same. Accordingly, the surplus power available from thermal and gas stations has been surrendered as per merit order schedule.

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 4: New Power Plants considered for projections

Name of Plant	Installed Capacity	Commissioning Schedule
Bokaro TPS -A (DVC)	500	Plants 2017-18
Meja#1: 2*660 MW	660	
Kishan Ganga HEP	330	
Tanda Stage-II TPS 2*660 = 1320 MW	1320	Plants 2018-19
Parbati-II HEP	800	
Karcham Wangtoo HEP (PTC)	1000	

Note: (i) Teesta-III HEP is not included as per the WTDs decision taken in its 191st meeting held on 06.04.2017.

(ii) Vishnugarh pipalkoti project is not included as per the decision of Long Term Power Purchase Committee.

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.

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.

The quantum of projected gross energy purchased from various sources for FY 2017-18 and FY 2018-19 is provided in the Format 7 for FY 2017-18 and FY 2018-19.

For projection of power availability during the year FY 2017-18, actual data for H1 is considered while for projection of power availability for H2, as PSPCL has scheduled power from own thermal power plants under MOD as per Commission Directive, except one unit of each GHTP and GGSSTP as must run. The projection



of power purchase in H2 is based on the difference of expected total schedule of plant in the year and the actual scheduled in H1.

For the projection of variable cost for own generation PSPCL has considered characteristic as submitted under MYT petition. However, fuel price and GCV have been taken as approved by Hon'ble Commission in tariff order for FY 2017-18.

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

Basis of fixation of Annual Fixed Charges:

PSPCL has scheduled its 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.

CERC Tariff Regulations, 2014 are effective from April 1, 2014 for a period of 5 years i.e. up to March 31, 2019. The generating companies or the transmission licensees 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 Alternate/Corporate Income Tax Rate of the respective financial year directly without making any application before the CERC. Further, Annual Fixed Charges 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 have been considered. AFC's for FY 2017-18 and FY 2018-19 for various plants have been assumed same as applicable for H1 of FY 2017-18.

Basis for Fixation of Variable Charges

PCPCL has not considered any upward rise in cost for the projection of energy charges for the FY 2017-18 and FY 2018-19. PSPCL understands that any change in cost from the level approved by the Hon'ble Commission shall be determined in accordance with the fuel cost adjustment (FCA) formula specified by the Hon'ble Commission in the Conduct of Business Regulations, and recovered from the consumers after following the procedure detailed in the Conduct of Business Regulations.



The following assumptions have been taken for the estimation of Power purchase cost for FY 2017-18 and FY 2018-19.

(April 2017 to Sept. 2017) (H1)

All Power purchase data upto September 2017 is on actual basis except the water usage charges for NHPC stations (Salal, Uri, Dulhasti, Sewa-II & Uri-II). These charges for the period April, 2017 to September, 2017 has been calculated on the basis of previous year i.e 2016-17 per unit rate of water charges, as bills for 2017-18 are yet to be received.

(Oct. 2017 to March 2018) (H2)

The variable rates of plants for the period 2017-18 H2 has been taken same as that of September 2017.

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.

Under the title of 'OTHERS' charges, water usage charges for NHPC stations has been assumed for the period of Oct'17 to March'18. The per unit rate of water charges for plants Salal, Uri, Dulhasti, Sewa-II & Uri-II have been assumed same as that of previous year i.e. FY 2016-17.

Fixed charges for SASAN UMPP, Mundra UMPP, Mallana-II, Pragati, NPL and TSPL have also been assumed same as that of H1. For GVK, fixed charges has been calculated at normative rate 192.60 Ps/Unit.

Energy rates of NRSE power and Bundle power thro. NVVNL has been assumed same as rate of H1 period.

Banking:- Cost of banking for H2 has been assumed same as that for H1 i.e. 365 Ps/unit.

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 Sept. 2017. After surrender of energy, only variable charges have been reduced and fixed / other charges are assumed same.

DN

(Year 2018-19)

The variable rates of 2018-19 have been assumed same as that of H2 (2017-18). For existing hydro plants, VC is based upon the applicable AFC.

The variable rates of new plants whose rates have been quoted by the company have escalated by 5% every year from quotation to the COD, after wards the same rates have been assumed.

The variable rates of new plants whose rates have not been quoted have been assumed maximum rates of Thermal & Hydro Plants.

Under the title of 'OTHERS' charges, water usage charges for NHPC stations has been assumed at the per unit water charges rate of FY 2016-17 for Salal, Uri, Dulhasti, Sewa-II & Uri-II.

Energy rates of NRSE power and Bundle power thro. NVVNL has been assumed same as rate of H2 period.

Banking:- Cost of banking for 2018-19 has been assumed same as that for H2 i.e. 365 Ps/unit.

Fixed charges for SASAN UMPP, Mundra UMPP, NPL and TSPL have been evaluated as per PPA (Schedule 11). For GVK and Mallana-II, fixed charges has been calculated at normative rate 192.60 Ps/Unit and 231.36 Ps/Unit respectively.

The surplus energy has been surrendered. Surrendering has been done as per the merit order of power purchase from own generation, existing thermal and gas plants. After surrender of energy, only variable charges are reduced and fixed/other charges are assumed to be the same.

Basis of fixation of transmission charges

Power Grid (Transmission) charges, the actual charges paid to Power Grid on account of Transmission charges for the period 01.04.2017 to 30.09.2017 (H1 2017-18) have been assumed same for H2 2017-18 i.e. 1.10.2017 to 31.03.2018. The PGCIL charges for FY 2018-19 have been escalated by 5% from the FY 2017-18.

Intra-state transmission charges payable to PSTCL is taken as approved by Hon'ble Commission in tariff order for FY 2017-18.

Based on above, projections for power purchase cost for the Control period have



been summarized in following table:

Table 5: Power Purchase Cost (Rs. Cr)

Particulars	FY 2017-18 MYT order	FY 2018-19 MYT order	FY 2017-18 (APR)	FY 2018-19 (RE)
Power purchase cost	17681.12	18864.56	17,001.58	19,120.37
Intra-state transmission charges (PSTCL)	1,234.87	1,283.86	1,234.87	1,283.86
Total Power Purchase Cost	18915.99	20148.42	18,236.45	20,404.23

The quantum of projected gross energy purchased from various sources for FY 2017-18 and FY 2018-19 is provided in the Format 7 for FY 2017-18 and FY 2018-19.

3.4.2 Own Generation - Thermal Generating Stations

Power availability from State's own thermal generating stations, GGSSTP, Ropar and GHTP, Lehra Mohabbat for FY 2017-18 and FY 2018-19 has been projected on the basis of various parameters such as plant load factor, gross generation and auxiliary consumption. Further, as per the direction of Government PSPCL has not scheduled power from GNDTP, Bathinda during H2 of FY 2017-18 and FY 2018-19. However, actual fuel cost of Rs. 95.1 Cr.; has been claimed for GNDTP generation during for H1 of FY 2017-18.

PSPCL has not claimed any performance parameters and fuel cost against the GNDTP during the H2 of FY 2017-18 and FY 2018-19, as no power has been scheduled. Furthermore, PSPCL would like to mention here that during the real time operation any variable expense of GNDTP shall be claimed during the tried up of respective years.

Various aspects of Generation & cost relating to the units have been discussed below.

Plant Availability

PSPCL submits that provisional Plant availability factor for H1 of FY 2017-18 is as under:

Table 6: Plant availability for FY 2017-18 H1 (%)

Description	FY 2017-18 (H1)
GNDTP	99.32
GGSSTP	99.38
GHTP	96.77

The plant availability of GHTP, Lehra Mohabbat and GGSSTP, Roopnagar for the second half of FY 2017-18 and for the FY 2018-19 is estimated based on the provisional plant availability figures attained till H1 of FY 2017-18 and the planned maintenance schedule. The details of overhauling schedule are provided in the prescribed formats.

PSPCL has undertaken consistent & regular maintenance apart from timely renovation & overhaul of its Units to sustain the generation from each of these power plants for the year 2018-19 at the target output level set by the CEA. The plant availability for all three plants GNDTP Bathinda, GGSSTP Roopnagar & GHTP Lehra Mohabbat for H1 of FY 2017-18 is above 85%.

Plant availability for the H2 of FY 2017-18 is also estimated to be above 85% for all the plants. Moreover Plant availability during FY 2018-19 for all the plants has been proposed to be above 85%.

Auxiliary Consumption

The auxiliary consumption for FY 2017-18 and FY 2018-19 for GGSSTP and GHTP plants has been projected based on normative parameters further relaxed by CERC wide regulation 6.3B of CERC (Indian Electricity Grid Code) (Fourth Amendment) Regulations, 2016 which also provides the compensation for auxiliary consumption on account of part load operations. The Regulation provides as under:

“6.3B - Technical Minimum Schedule for operation of Central Generating Stations and Inter-State Generating Stations

.....
 (ii) *In case of coal / lignite based generating stations, the following Auxiliary Energy Consumption degradation or actual, whichever is lower, shall be considered for the purpose of compensation:*

S. No.	Unit Loading (% of MCR)	% Degradation in AEC admissible
1	85-100	Nil
2	75-84.99	0.35
3	65-74.99	0.65
4	55-64.99	1.00

In view of the above, PSPCL has considered the actual Auxiliary Consumption considering base years for MYT Control Period i.e.; FY 2015-16 (as the base values for the projection of Control Period) and further, based on projected loading of thermal generating stations during the FY 2017-18 and FY 2018-19, Auxiliary

Consumption applicable as per CERC Tariff Regulations, 2014 has consider for FY 2017-18 and FY 20118-19.

Table 7: Assumptions for FY 2017-18 and FY 2018-19

Plant	AFC as per CERC Norms	Increase in AC as per CERC revised Norm	FY 2015-16 Actual	A.C. for FY 18 and FY19
GNDTP ¹	12.00%	1.00%	13.00%	11.26%
GGSTP	8.50%	1.00%	9.50%	9.05%
GHTP	8.50%	1.00%	9.50%	8.98%

Auxiliary Consumption projected for the FY 2017-18 and FY 2018-19 is as under:

Table 8 Auxiliary Consumption (%) for FY 2017-18 and FY 2018-19

Plant	FY 2017-18 MYT order	FY 2018-19 MYT order	FY 2017-18	FY 2018-19
GNDTP ²	11.00%	11.00%	11.26%	11.26%
GGSTP	8.5%	8.5%	9.05%	9.05%
GHTP	8.5%	8.5%	8.98%	8.98%

Hence, the auxiliary consumption for FY 2017-18 H-1 is based on the actual while for H-2 it has been projected based on the auxiliary consumption as proposed by PSPCL in MYT petition for the FY 2017-18 as per CERC. For H2 auxiliary consumption is considered as 9.05% for GGSSTP, 8.98% for GHTP.

Furthermore, as per power demand scenario in the State of Punjab, PSPCL own units remained under reserve outage for longer period and during running period units remained running on backing down for maximum time as per directions of PC, Patiala. During frequent stop/start after reserve outage and running of units under backing down affects the performance of units. During backing down, power generation is reduced but most of the auxiliaries remained running at nearly full load which results in increase in percentage aux. consumption. Under the above circumstances, PSPCL prays the Hon'ble Commission to consider the actual Auxiliary Consumption at the time of True Up exercise.

Station Heat rate

For GHTP, Hon'ble Commission has approved different Station heat rate as 2450

¹ GNDTP runs in H1 of FY 2017-18

² GNDTP runs in H1 of FY 2017-18

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. Further, for GHTP, the actual Station Heat Rate during H1 of FY 2017-18 was 2526.77 kcal/kWh. The increasing life of the asset and lower Plant load factor affects the Station Heat Rate of the plant.

As regards GGSSTP the normative Station Heat Rate approved by Hon'ble Commission is 2450 kcal/kWh. For GGSSTP, the actual Station Heat Rate during H1 of FY 2017-18 is 2699.10 kcal/kWh. Further, it may be noted that CERC has recognised the fact that Station Heat Rate and Auxiliary Consumptions of the plant are affected on account of partial load. Regulation 6.3B of CERC (Indian Electricity Grid Code) (Fourth Amendment) Regulations, 2016 specifies as under:

"6.3B - Technical Minimum Schedule for operation of Central Generating Stations and Inter-State Generating Stations

1. The technical minimum for operation in respect of a unit or units of a Central Generating Station of inter-State Generating Station shall be 55% of MCR loading or installed capacity of the unit of at generating station.

3. Where the CGS or ISGS, whose tariff is either determined or adopted by the Commission, is directed by the concerned RLDC to operate below normative plant availability factor but at or above technical minimum, the CGS or ISGS may be compensated depending on the average unit loading duly taking into account the forced outages, planned outages, PLF, generation at generator terminal, energy sent out ex-bus, number of start-stop, secondary fuel oil consumption and auxiliary energy consumption, in due consideration of actual and normative operating parameters of station heat rate, auxiliary energy consumption and secondary fuel oil consumption etc. on monthly basis duly supported by relevant data verified by RLDC or SLDC, as the case may be.

Provided that:

(i) In case of coal / lignite based generating stations, following station heat rate degradation or actual heat rate, whichever is lower, shall be considered for the purpose of compensation:

S. No.	Unit loading as a % of Installed Capacity of the Unit	Increase in SHR (for supercritical units) (%)	Increase in SHR (for sub-critical units) (%)
1	85-100	Nil	Nil
2	75-84.99	1.25	2.25
3	65-74.99	2	4

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4	55-64.99	3	6
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In view of the above, PSPCL has considered the Station Heat Rate based on projected loading of thermal generating stations during the Control period, as per CERC vide regulation 6.3B of CERC (Indian Electricity Grid Code) (Fourth Amendment) Regulations, 2016

Table 9: Assumption of Station Heat Rate (kCal/kWh)

Plant	SHR as per CERC Norms	Increase in SHR as per CERC Norms	Actual FY 2015-16	SHR for FY 18 and FY 19
GNDTP ³	2750	6%	2,915	2,864.79
GGSSTP	2450	6%	2,597	2,597.00
GHTP	2450	6%	2,597	2,512.15

Station Heat Rate projected for the FY 2017-18 and FY 2018-19 is as under:

Table 10: Station Heat Rate (kCal/kWh)

Plant	FY 2017-18 MYT order	FY 2018-19 MYT order	FY 2017-18	FY 2018-19
GNDTP ⁴	2750	2750	2,864.79	2,864.79
GGSSTP	2450	2450	2,597.00	2,597.00
GHTP	2450 (Unit 1&2) 2428 (Unit 3&34)	2450 (Unit 1&2) 2428 (Unit 3&34)	2,512.15	2,512.15

Hence, PSPCL has considered heat rate of 2512.15 kCal/kWh for H2 of FY 2017-18 and FY 2018-19 inline with MYT petition and request to the Hon'ble Commission kindly allow common Station Heat rate for GHTP for all the units.

For GGSSTP, the Hon'ble Commission has approved the Station heat rate of 2450 kcal/kWh for FY 2017-18 and FY 2018-19. The actual Station heat rate achieved in H1 of FY 2017-18 is 2699.10 kcal/kWh which is quite higher than the approved figure. However, PSPCL has considered the Station heat rate of 2597 kcal/kWh for H2 and FY 2017-18 and FY 2018-19 as per SHR submitted in MYT petition for Control Period for GGSSTP, Roopnagar.

Further, as per power demand scenario in the State of Punjab, PSPCL own units remained under reserve outage for longer period and during running period units

³ GNDTP runs in H1 of FY 2017-18

⁴ GNDTP runs in H1 of FY 2017-18

remained running on backing down for maximum time as per directions of PC, Patiala. During frequent stop/start after reserve outage and running of units under backing down affects the performance of units. During backing down, power generation is reduced and the station heat rate (SHR) percentage got increased. Under the above circumstances, PSPCL prays the Hon'ble Commission to consider the actual station heat rate at the time of True Up exercise.

Secondary Fuel Oil Consumption

The Secondary Fuel Oil Consumption for all three Thermal Generating Stations has been considered as 0.5 ml/kWh in line with CERC Tariff Regulations, 2014 and approve by Hon'ble Commission in the MYT order.

Furthermore, as per power demand scenario in the State of Punjab, PSPCL own units remained under reserve outage for longer period and during running period units remained running on backing down for maximum time as per directions of PC, Patiala. During frequent stop/start after reserve outage and running of units under backing down affects the performance of units. During backing down, power generation is reduced but most of the auxiliaries remained running at nearly full load which results in increase in secondary fuel oil Consumption. Under the above circumstances, PSPCL prays the Hon'ble Commission to consider the actual secondary fuel oil consumption at the time of True Up exercise.

Price of Coal and Oil

GGSSTP and GHTP

Actual Coal and Oil price for H1 of FY 2017-18 for GGSSTP is 5177.84 Rs./MT and 31561.01 Rs./KL and for GHTP it is 5226 Rs./MT and 29945 Rs./KL. Getting the fair estimate of coal price and oil price PSPCL has considered as validated price for Coal and Oil as approved by Hon'ble Commission for GGSSTP and GHTP in tariff order for FY 2017-18.

The coal and oil price for FY 2017-18 and FY 2018-19 is considered as Rs. 5124.72/MT and Rs. 23165.07/KL for GGSSTP and Rs. 5324/MT and Rs. 31945/KL GHTP respectively.

As regards the price of fuel, PSPCL has considered the validated price of Fuel as approved by Hon'ble Commission in tariff order for FY 2017-18. Further, PSPCL has not considered any upward rise in price of fuel for the projection of energy charges for the FY 2017-18 and FY 2018-19.



PSPCL understands that any change in fuel cost from the level approved by the Hon'ble Commission shall be determined in accordance with the fuel cost adjustment (FCA) formula specified by the Hon'ble Commission in the Conduct of Business Regulations, and recovered from the consumers after following the procedure detailed in the Conduct of Business Regulations.

Transit Loss

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:

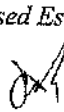
- a) Calibration of measuring instruments- Weighing of coal at two different locations having different calibration of weighing machines lead to error more than permissible limits.
- b) The transit loss occurred because of seasonal variation during the transportation of the coal which changes the moisture 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 PSPCL.
- 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.

Hence, the actual transit losses as per actual Q1 of FY 2017-18 i.e. (-0.68) % for GHTP & (-0.41) % for GGSSTP However, PSPCL has take transit losses 1% as normative for FY 2017-18 and FY 2018-19 and prays the Hon'ble Commission to approve the transit losses on normative basis @ 1%.

The various performance parameters considered by PSPCL for revised estimates of H2 of FY 2017-18, FY 2017-18 and FY 2018-19 are summarized as under:

Table 11: Performance parameters

Parameters	FY 2017-18	FY 2018-19	FY 2017-18	FY 2018-19
	GGSSTP		GHTP	
Availability	96.96%	91.25%	90.65%	99.12%
PLF	21.51%	35.98%	34.37%	24.20%
Auxiliary consumption	9.05%	9.05%	8.98%	8.98%
Heat Rate (kcal/kWh)	2,597	2,597.00	2,512	2,512.15
Transit Loss	1.0%	1.0%	1.0%	1.0%



Parameters	FY 2017-18	FY 2018-19	FY 2017-18	FY 2018-19
SFOC (ml/kWh)	0.50	0.50	0.50	0.50
GCV of FO (kcal/l)	9857.06	9857.06	9888.58	9888.58
GCV of Coal (kcal/kg)	4544.86	4544.86	4277.62	4277.62
Landed Price of Coal (Rs/MT)	5,124.72	5,124.72	5,324.00	5,324.00
Landed Price of Oil (Rs/KL)	23,165.07	23,165.07	31,945.00	31,945.00

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."



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

GNDTP Bathinda

The calculation of fuel cost for FY 2017-18 (H1), is provided in the Format 2-A of this Petition.

GGSSTP Roopnagar

The calculation of fuel cost for FY 2017-18 (H1), FY 2017-18 (H2) and FY 2017-18 and FY 2018-19 is provided in the Format 2-B of this Petition.

GHTP Lehra Mohabbat

The calculation of fuel cost for FY 2017-18 (H1), FY 2017-18 (H2) and FY 2017-18 and FY 2018-19 is provided in the Format 2-C of this Petition.

Summary of Fuel Cost

Table 12: Summary of Fuel Cost (Cr.)

Generating Stations	FY 2017-18 MYT order	FY 2018-19 MYT order	FY 2017-18 (APR)	FY 2018-19 (RE)
GNDTP ⁵	0.00	0.00	95.10	0.00
GHTP	643.32	646.40	682.25	1073.85
GGSSTP	979.01	969.98	824.00	587.75
Total	1622.332	1616.384	1,601.35	1,661.60

Own Generation - Hydel Stations

Hon'ble Commission in the MYT order has approved the Gross Own Hydel generation as projected by PSPCL for the Control Period.

Further, availability from own Hydel plants for FY 2017-18 and FY 2018-19 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 2017-18 are considered same as that of H1.

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 2017-18 (H2) has been taken as average for the last three years i.e., FY

⁵ GNDTP runs in H1 of FY 2017-18

2014-15 to 2016-17.

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.

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

The net hydro generation from own plants for FY 2017-18 (H1), FY 2017-18 (H2) and FY 2017-18 and FY 2018-19 is provided in the Format 4 of this Petition.

3.5 Energy Balance and Transmission & Distribution Loss Projection

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 14.71% has been achieved during FY 2015-16 which indicates the efficient and consistent performance of the PSPCL.

PSPCL has been taking steps to reduce the distribution loss through various loss reduction and network planning initiatives. 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. 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. The main assumption is to continue to pursue the loss reduction programs initiated in earlier years and also increasingly use the technology to target erring consumers and reduce the losses further during the projection for FY 2017-18 and FY 2018-19. The investments being made under sub transmission and distribution strengthen schemes are also expected to aid in the reduction of distribution loss both in urban and rural areas.

Hereby, it is to be noted that after a certain level; further T&D loss reduction requires adequate capital investment to be incurred for the sub-transmission and distribution system strengthening and modernisation. Further, PSPCL has adopted AP consumption based on pumped energy methodology from FY 2016-17. Hereby, it is to be noted that AP Consumptions are one of the key rider that make substantial impact on overall T&D loss of state. Based on all these circumstances the distribution loss target expected during FY 2017-18 and FY 2018-19 by PSPCL as 14.75% and 14.50% respectively.

The energy balance for the year FY 2017-18 (revised estimates) and FY 2018-19 are shown in the following table:



Table 13: Proposed Energy Balance (MU)

Particulars	FY 2017-18 MYT order	FY 2018-19 MYT order	FY 2017-18 (ARR)	FY 2018-19 (RE)
ENERGY REQUIREMENT				
Energy sales to metered category	35155.60	37126.49	34892.63	36968.61
Energy sales to AP	11811.90	12078.05	12355.83	13313.88
Total sales within the State	46967.5	49204.54	47248.46	50282.49
T&D losses				
%	14.25%	14.00%	14.75%	14.50%
MU	7805	8010	8174.95	8527.44
Sub-total	54772.5	57214.54	55423.42	58809.93
Sales to common pool consumers	311.68	311.68	308.99	341.64
Sales outside state	128.40	52.66	353.88	126.18
Sale to outside states (grid sales)			218.68	0.00
Add: Royalty to HP from Sharnan			52.92	52.92
Add: Share from RSD to HP			82.29	73.27
Total Energy Requirement	55824.22	55136.84	56086.29	59277.76
ENERGY AVAILABILITY				
Net thermal generation	5089.30	5118.60	4727.15	4984.38
GNDTP			265.72	0.00
GGSSTP			2093.77	3295.55
GHTP			2367.66	1688.84
Hydel Generation (own)	4537.31	4436.79	4620.55	4375.24
Net power purchase	42735.31	42119.15	42857.21	46154.61
UI (Open Access)			3.92	0.00
BBMB Share (Including Common Pool)	3462.30	3462.30	3877.46	3763.52
Net BBMB Share			3568.47	3421.88
Common Pool			308.99	341.64
Total Energy Availability	55824.22	55136.84	56086.29	59277.76

It is submitted that Hon'ble Commission is approving T&D loss target as a collectively for PSPCL and PSTCL. Hereby, it is to be noted that while approving T&D loss targets; Hon'ble Commission is considering transmission losses 2.5%. However, in actual scenario transmission losses are much higher than approve



level. PSPCL submits that this additional burden of transmission losses is being laden to PSPCL which make adversary impact on PSPCL technical and financial performance. PSPCL prays Hon'ble Commission to kindly set separate target of transmission and distribution losses for both the companies PSTCL and PSPCL.

3.6 Renewable Purchase Obligation (RPO)

Hon'ble Commission has specified the RPO compliance for FY 2017-18 and FY 2018-19 as per table below

Sr. No.	Description	FY 2017-18	
1.	Input Energy (MU)	53403.50 (for Non-Solar) 39521.10 (for Solar)	
2.	RPO specified	%	MU
	i. Non-Solar	4.2 %	2242.95
	ii. Solar	1.8 %	711.38
3.	RE generation/purchase (RPO compliance)		
	i. Non-Solar	3.37 %	1799.95
	ii. Solar	4.33 %	1712.28
4.	Net RE shortfall / (surplus) (2-3)		
	i. Non-Solar	0.83 %	443.00
	ii. Solar	(2.50%)	(1000.90)

Sr. No.	Description	FY 2018-19	
1.	Input Energy (MU)	55784.54 (for Non-Solar) 41447.43 (for Solar)	
2.	RPO specified	%	MU
	i. Non-Solar	4.3 %	2398.74
	ii. Solar	2.2 %	911.84
3.	RE generation/purchase (RPO compliance)		
	i. Non-Solar	3.23 %	1799.95
	ii. Solar	7.60 %	3151.99
4.	Net RE shortfall / (surplus) (2-3)		
	i. Non-Solar	1.07 %	598.79
	ii. Solar	(5.40%)	(2240.15)

The Commission has notified Punjab State Electricity Regulatory Commission (Renewable Purchase Obligation and its compliance) (Amendment-1) Regulations, 2015 on May 06, 2015. The Commission has given the RPO target up to FY 2019-20 considered procurement of power from renewable energy sources through PPA or short term market to ensure RPO compliance.

Projected Month Wise Generation Targets of Existing NRSE/ PEDAs Projects & Upcoming Projects during FY 2017-18 (H2) and FY 2018-19 required for ARR for FY 2018-19

Non SOLAR

Particulars	FY 2017-18 (H2)	FY 2018-19
Non Solar Purchase	659.45 MUs*	1799.95**

*Purchase till Sep 2017 is 1628.79 MUs. The estimated Non-solar power available from all sources in FY 2017-18 shall be available to the extent of 2288.24 MUs (1296 MUs as routine purchase +273.37 MUs from TE 08/2016 +718.87 MUs from HPSEBL Tender). Accordingly, estimated purchase for the second half of FY 2017-18 shall be 2288.24 - 1628.79 = 659.45 MUs.

** As per projections of Tariff Order 2017-18

Particulars	2017-18	2018-19
Expected Non Solar Shortfall in MUs	2179.74 (including carry forward of previous years)#	598.79##
Cost @ Rs 1500/REC	326.96 Cr.	89.82 Cr.

As per estimates, proposal for purchase of net shortfall for FY 2017-18 through Short Term power purchase and/ or purchase of RECs has been forwarded to higher authorities for consideration. It is estimated that the net shortfall for FY 2017-18 may be to the tune of 2179.74 MUs in light of fresh figures from Tariff Order 2017-18

1	Non Solar Target for FY 17-18 as per tariff order	2242.95 MUs
2	Non Solar Net Shortfall of FY 16-17 as per Tariff Order	2225.03 MUs
3	Non Solar Estimated purchase for FY 2017-18	2288.24 MUs
4	Non Solar Net Shortfall Estimate (1+2-3)	2179.74 MUs

Here it is being assumed that entire shortfall will be met by purchase of Non Solar RECs. Any Shortfall not complied with in FY 2017-18 will be complied with in the next year.

As per data from Tariff Order 2017-18 and assuming that entire shortfall will be met by purchase of Non Solar RECs.

SOLAR

Source		FY 2017-18	FY 2018-19
Long Term Purchase from NRSE/PEDA inside State Solar by PSPCL	Solar	556.354 MU from 869.27MW	1408.905 MU from 994.27MW
Long Term Purchase from NVVN & SECI outside State by PSPCL	Solar	27.021 MU from 65MW	95.500 MU from 65MW

Note: Energy purchased from Solar projects till Sep-2017 is 790.530MU (720.051 MU from Solar Projects and 70.479MU from NVVN & SECI). Estimated generation from Solar projects during FY 2017-18 is 1373.905 MU (1276.405 MU from Solar Projects and 97.5MU from NVVN & SECI)

3.7 Capital Expenditure for FY 2017-18 and FY 2018-19

Capital Expenditure Plan for Control Period had been submitted before Hon'ble Commission on dated 31 May 2016, as petition No. 46/2016. It is submitted the approval of Capital Expenditure Plan is still pending. However, Hon'ble Commission has approved provisional Capital Expenditure Plan Rs.1310.67 Cr.; for FY 2017-18 and Rs. 1303.25 Cr.; for FY 2018-19 in the tariff order for FY 2017-18.

Based on the capital expenditure incurred during H1 of FY 2017-18 and payable dues during H2 of FY 2017-18 and estimated spillover works and capital expenditure for FY 2017-18 PSPCL has taken an estimated amount of Rs. 1,468.91 Cr., to be incurred as capital expenditure for FY 2017-18, and Rs. 1922.02 Cr.; for FY 2018-19. Scheme wise details of capital expenditure are shown under Format 21.

It is further submitted that same may be revised based on decision on petition no. 46/2016.

3.8 Depreciation Expenses

As regards the Depreciation, Regulation 21 of PSERC MYT Regulations, 2014 specifies as under:

"For the purpose of tariff determination, depreciation shall be calculated in the following manner:

21.1. The value base for the purpose of depreciation shall be historical cost of the assets, that is actual expenses limited to approved capital cost where such capital cost has been approved by the Commission:

Provided that the land is not a depreciable asset and its cost shall be excluded from the capital cost while computing depreciation;

Provided that the depreciation has been calculated after deduction of consumer contributions, capital subsidies/Government grants as per methods prescribed in Accounting Standards issued by The Institute of Chartered Accountants of India.

21.2. The residual/salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of historical capital cost of the asset: Provided that in case of hydro generating stations, the salvage value shall be as provided in the agreement signed by the developers with the State Government for creation of the site; Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciable value shall correspond to the percentage of sale of electricity under longterm power purchase agreement at regulated tariff.

21.3. The depreciation for generation, transmission and distribution assets shall be calculated annually based on straight line method over the useful life of the asset at the rates specified in CERC Regulations, as amended from time to time. The depreciation for distribution assets not covered in CERC Regulations shall be as per the rates notified in the Companies Act, as may be revised from time to time: Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from date of commercial operation shall be spread over the balance useful life of the assets.

21.4. Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

21.5. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

As per PSERC MYT Regulations 2014, salvage value of asset is considered at 10 per cent of the allowable capital cost and depreciation is allowed up to a maximum of 90 per cent of the allowable capital cost of the asset. As provided in the PSERC MYT Regulations, 2014, PSPCL has used the rate of depreciation as specified in CERC Tariff Regulations, 2014. The following depreciation rates have been used for calculating depreciation:



Table 14: Asset wise Depreciation rate

Asset Type	Rate of Depreciation
Buildings	3.34%
Hydraulic Works	5.28%
Other Civil Works	3.34%
Plant & Machinery	5.28%
Lines, Cables, Networks etc.	5.28%
Vehicles	18.00%
Furniture & Fixtures	6.33%
Office Equipments	6.33%

PSPCL has computed Depreciation by applying the above said depreciation rate on opening GFA for full year and addition of GFA for half year period. PSPCL has not computed the depreciation on the land. The depreciation charges for the FY 2017-18 and FY 2018-19 are given in the following table:

Table 15: Depreciation for Generation for FY 2017-18 and FY 2018-19 (Rs. Cr)

Particular Generation	FY 2017-18 MYT order	FY 2018-19 MYT order	FY 2017-18 (APR)	FY 2018-19 (RE)
Opening GFA	24013.49	24099.03	24,173.33	24,448.26
Closing GFA	24099.03	24306.17	24,448.26	24,751.15
Depreciation	458.75	461.36	608.34	614.23

Table 16: Depreciation for Distribution for FY 2017-18 and FY 2018-19 (Rs. Cr)

Particular Distribution	FY 2017-18 MYT order	FY 2018-19 MYT order	FY 2017-18 (APR)	FY 2018-19 (RE)
Opening GFA	25336.59	26871.22	25,319.03	26,623.95
Closing GFA	26871.22	28104.55	26,623.95	28,106.22
Depreciation	770.07	810.89	988.96	1,038.55

It is submitted that the Hon'ble Commission may kindly approve the depreciation charges for FY 2017-18 and FY 2018-19 projected as above.

3.9 Return on Equity

Regulation 20 of PSERC MYT Regulations, 2014 provides for recovery of Return on Equity which is reproduced hereunder:

"20. RETURN ON EQUITY



Return on Equity shall be computed at the rate of 15.5% on the paid up equity capital determined in accordance with regulation 19: Provided that assets funded by consumer contributions, capital subsidies/Govt. grants shall not form part of the capital base for the purpose of calculation of Return on Equity"

The Hon'ble Commission has approved a return on equity for FY 2015-16 at the rate of 15.5% worked out at Rs. 942.62 Cr on an equity base of Rs. 6081.43 Cr.;

PSPCL submits that it is facing immense cash crunch due to huge disallowances against actual expenses being incurred by it. In order to achieve the desired operational and financial outcomes/ efficiencies that 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.

It is assumed that there will be no addition in equity during the FY 2017-18 and FY2018-19. PSPCL has estimated the Return on Equity Rs. 577.90 Cr and 364.72 Cr for the PSPCL Generation and distribution business respectively during the FY 2017-18 and FY 2018-19 in line with MYT petition which has been tabulated below:

Table 17: Return on Equity for Generation (Rs. Cr)

Particulars	FY 2017-18 MYT order	FY 2018-19 MYT order	FY 2017-18 (APR)	FY 2018-19 (RE)
Return on Equity PSPCL	942.62	942.62	942.62	942.62
Return on Equity for Generation	445.68	437.15	577.90	577.90
Return on Equity for Distribution	496.94	505.47	364.72	364.72

The PSPCL prays to the Hon'ble Commission to approve the projected RoE for FY 2017-18 and FY 2018-19 as shown in the table above.

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3.10 Interest Expenses

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.

The interest expenditure on account of long-term loans depends on the outstanding loan, repayments, and prevailing interest rates on the outstanding loans. Further, the projected capital expenditure and the funding of the same also have a major impact on the long-term interest expenditure. PSPCL has considered the estimated outstanding loans as on March 31, 2017 as opening loan balance for FY 2017-18. The addition of loan has been considered towards the capital investment proposed during the FY 2017-18 and FY 2018-19. The interest expenses have been computed considering repayment of actual loans and applicable interest rate for loan. The Interest Charges for FY 2017-18 and FY 2018-19 is projected as tabulated below:

Table 18: Interest Expenses for Generation (Rs. Cr)

Particulars	Outstanding Balance (Rs. Cr)	Interest Repayment	Outstanding Balance (Rs. Cr)	Interest Repayment	Outstanding Balance (Rs. Cr)	Interest Repayment
GENERATION LOANS		0.00	0.00	0.00	0.00	
PFC-GENERAL LOANS	8.41	0.00	8.41	0.00	0.07	0.00
PFC-ODDISHA PROJECT	0.00	0.00	0.00	0.00	0.00	0.00
REC- R&M Generation Loans	508.20	14.36	181.11	341.45	54.89	46.98
REC-Loans for Annual Plans	0.00	156.10	0.00	156.10	4.29	192.91
Banks-Loans for Annual Plans	0.00	113.64	0.00	113.64	3.22	128.61
Sub Total	516.61	284.30	189.52	611.19	62.47	321.52
Finance charges- On long term loans		0.00	0.00	0.00	2.27	46.98
NON - SLR BONDS	175.69	0.00	0.00	175.69	17.28	0.00
Total Generation loans	692.30	284.30	189.52	786.88	82.02	321.52
Interest Capitalized					19.82	
Net IFC for Generation				62.21		
						294.47
						349.01
						242.25
						885.73
						2.57
						11.36
						898.66
						21.40
						72.24

Further, as per PSERC MYT Regulations, 2014 specified quantum of long term loan as normative. Outstanding debt as on September 30, 2015 has been restructured under the implementation of UDAY Scheme. As a result of this, interest liability of PSPCL has been reduced in subsequent years. PSPCL expects that this benefit of reduction in interest liability shall be passed on to the consumers. Hence, PSPCL has proposed interest expenses for the FY 2017-18 and FY 2018-19 on actual basis.

PSPCL prays to Hon'ble Commission that the Interest on any adjustment such as liability for RBI Bonds etc. made against subsidy payable by GoP may also be allowed by the Commission.

PSPCL also submits that; PSPCL, Govt.; of India and Govt.; of Punjab has signed MOU under UDAY scheme on March 4, 2016 according to which, 75% of PSPCL loans pertaining to distribution business amounting to Rs 15,628.26 Cr.; has been taken over by the GoP by issue of special GoP Bonds for 10/15 years. PSPCL has repaid the loans of the equivalent amount to PFC/REC/Banks as per the UDAY scheme and now GoP loans appear in the books of PSPCL. The GoP loans are for the period of 10/15 years at the same rate of interest on which the bonds are issued resulting into the significant reduction in interest cost to PSPCL. UDAY scheme was launched by GoI with an objective of operational and financial turnaround of the state distribution utilities. As PSPCL and GoP have adopted the scheme, the interest on GoP loan of Rs 15,628.26 Cr.; appearing in the books of PSPCL needs to be allowed in the tariff in order to make the utility financially viable in line with the objective of UDAY scheme.

PSPCL prays to Hon'ble Commission that the GoP loan under UDAY in the books of PSPCL should be treated as separate item and not included in the normal capex and working capital loans to provide one time relief as per the spirit of the UDAY scheme.

Further, PSPCL has considered the estimated outstanding loans for distribution schemes as on March 31, 2017 as opening loan balance for FY 2017-18. The addition of loan has been considered towards the capital investment proposed during the FY 2017-18 and FY 2018-19. The interest expenses have been computed considering estimated repayment of actual loans outstanding and applicable rate of interest.

The Interest Charges of distribution business for FY 2017-18 and FY 2018-19 is projected as tabulated below:

Table 19: Interest Expenses for Distribution (Rs. Cr)

Particulars	Outstanding as on 1/04/17	Receipt	Repayment	Outstanding as on 31/03/18	Interest payable	Receipt	Repayment	Outstanding as on 31/03/18	Interest payable	Receipt	Repayment	Outstanding as on 31/03/18	Interest payable
DISTRIBUTION LOANS													
Loans not covered under UDAY													
PFC-R-APDRP	411.53	0.00	2.59	408.94	36.92						8.77	400.17	40.69
PFC-Suitanpur Lodhi Scheme	0.00	0.00	0.00	0.00	0.00							0.00	
LTL-COMMERCIAL BANKS	2219.66	250.00	1769.66	700.00	189.06						16.07	683.93	72.32
Banks-Loans for Annual Plans		143.92	0.00	143.92	4.08					552.20		696.12	35.70
CSS Loans-APDRP	39.33	0.00	6.30	33.03	4.30						6.30	26.73	3.60
REC-TOTAL T & D SCHEME/66KV WORK LOANS	3620.76	376.82	2416.46	1581.12	346.64						48.88	1532.24	144.33
WCL-Short Term Loans	967.91	1250.00	1597.26	620.65	148.32						620.65	0.00	13.84
WCL-Medium Term Loans	747.50	1320.00	298.00	1769.50	109.75	2177.00					1556.23	2390.27	217.37
WCL-Term Loans	3000.00	0.00	0.00	3000.00	349.87							3000.00	349.50
REC-Loans for Annual Plans total	11006.69	3554.81	6090.27	8471.23	1194.61	828.30				3557.50	2256.90	9771.83	943.94
Interest to consumers		0.00	0.00	0.00	167.00								163.70
Finance charges- On long term loans		0.00	0.00	0.00	216.26								11.04
Finance charges- On Working capital loans		0.00	0.00	0.00	7.50								10.89
Sub Total	11006.69	3554.81	6090.27	8471.23	1585.37	3557.50				2256.90	9771.83	1149.57	
Loans covered under UDAY		0.00	0.00	0.00	0.00								
GOP LOANS(UDAY BONDS)	15628.26	0.00	0.00	15628.26	1306.46							15628.26	1306.95
DISCOM Bonds		5209.42	0.00	5209.42	110.70							5209.42	442.80
Sub total	15628.26	5209.42	0.00	20837.68	1417.16	0.00				0.00	0.00	20837.68	1749.75
Others Loan		0.00	0.00	0.00	0.00								



Particulars	Outstanding as on 31/03/17	Receipt	Repayment	Outstanding as on 31/03/18	Interest payable	Receipt	Repayment	Outstanding as on 31/03/19	Interest payable
Others		0.00	0.00	0.00	2.07				
Liability for GPF	1542.61	0.00	380.34	1162.27	112.64	0.00	221.52	940.75	93.46
CC/OD Limits	503.77	356.23	0.00	860.00	71.08			860.00	90.30
NON - SLR BONDS	155.91	0.00	0.00	155.91	15.34	0.00	144.44	11.47	10.08
Finance charges- On long term loans		0.00	0.00	0.00	0.00				
Subtotal	2202.29	356.23	380.34	2178.18	201.13	0.00	365.96	1812.22	193.84
Sub Total Distribution loans	28837.24	9120.46	6470.61	31487.09	3203.66	3557.50	2622.86	32421.7	3093.16
Interest Capitalized					98.78				89.93
Net IFC for Distribution					3,104.88				3,003.23

Note: 1: Interest on CC/OD Limits has been considered under distribution loans.
 2: Interest on NON - SLR BONDS have been allocated based on assets ratio.

The Hon'ble Commission has limited the interest on working capital loans on normative basis and approve approves Interest on Working Capital Rs. 208.26 Cr.; for FY 2017-18, and Rs. 209.52 Cr.; for FY 2018-19 Distribution Business. It is submitted that PSPCL has been under severe financial strain and the actual interest on working capital loans is higher. The working capital loans have been taken by the company to fund its deficit in the financials which have been disallowed earlier, for funding the delay payments from the consumers and also due to delayed recovery of subsidy from the GoP. All these reasons stated above are beyond the control of PSPCL and hence PSPCL prays to Hon'ble Commission that the interest on working capital loans needs to be allowed as per actually incurred.

3.11 Interest on Working Capital

Regulation 34.1(a) and Regulation 34.1(c) of PSERC MYT Regulations, 2014 provides for recovery of Interest on working Capital Loan which is reproduced hereunder:

"34.1. Components of Working Capital

a. Coal-based Thermal Generating Plants:

The Working Capital shall cover the following:

- i. Fuel Cost for 2 months corresponding to the normative annual plant availability factor;*
- ii. Operation and maintenance (O&M) Expenses for 1 month;*
- iii. Maintenance spares @ 15% of the O&M expenses;*
- iv. Receivables equivalent to two (2) months of fixed and variable charges for sale of electricity calculated on the normative annual plant availability factor*

c. Hydro based generating stations:

The Working Capital shall cover the following:

- i. Maintenance spares @ 15% of operation and maintenance expenses;*
- ii. Operation & maintenance expenses for 1 month;*
- iii. Receivables equivalent to 2 months of fixed cost."*

PSPCL has calculated the interest on working capital for MYT Control Period as per PSERC MYT Regulations 2014 separately for Thermal and Hydro Generating Stations. The projected components of ARR have been allocated between Thermal and Hydro as per the allocation matrix considered in above section. The interest on the average loans has been computed considering average rate of interest for FY 2017-18 and FY 2018-19 i.e., 11.09 % and 11.11% respectively. PSPCL has computed the interest on working capital for Generation business for the FY 2017-18 and FY 2018-19 as detailed in table below:

Table 20: Interest on Working Capital for Thermal Generation (Rs. Cr)

Particulars		FY 2017-18	FY 2018-19
Cost of Fuel	2 months	266.22	276.93
O&M expenses	1 month	88.16	91.08
Maintenance Spares	15% of O&M	158.68	163.95
Receivables	2 months	571.09	589.09
Total Working Capital		1,084.82	1,121.05
Weighted average rate of interest(Actual)		11.09%	11.11%
Interest on Working Capital		120.31	124.57



Table 21: Interest on Working Capital for Thermal Stations FY 2017-18 (Rs. Cr)

Particulars	MYT Order			APR for FY 2017-18		
	GNDTP	CGSSTP	GHPP	GNDTP	CGSSTP	GHPP
Cost of Fuel	-	163.17	107.22	15.85	113.71	137.33
O&M expenses	18.29	25.76	13.58	25.72	41.40	21.04
Maintenance Spares	32.92	46.36	24.45	46.29	74.51	37.88
Receivables	59.54	239.50	178.85	100.76	227.36	242.97
Total Working Capital	110.75	474.79	324.10	188.61	456.98	439.22
Weighted average rate of interest(FY 2017-18)				11.09%	11.09%	11.09%
Interest on Working Capital	10.37	44.44	30.34	20.92	50.68	48.71

Table 22: Interest on Working Capital for Thermal Stations FY 2018-19 (Rs. Cr)

Particulars	MYT Order			RE for FY 2018-19		
	GNDTP	CGSSTP	GHPP	GNDTP	CGSSTP	GHPP
Cost of Fuel	-	161.66	107.73	-	178.97	97.96
O&M expenses	16.09	26.61	14.01	26.62	42.78	21.68
Maintenance Spares	28.96	47.89	25.22	47.91	77.01	39.03
Receivables	53.75	240.60	179.70	86.68	298.32	204.09
Total Working Capital	98.80	476.76	326.66	161.20	597.08	362.77
Weighted average rate of interest(FY 2018-19)				11.11%	11.11%	11.11%
Interest on Working Capital	9.25	44.62	30.58	17.91	66.35	40.31

Table 23: Interest on Working Capital for Hydel (Rs. Cr)

Particulars		FY 2017-18	FY 2018-19
O&M expenses	1 month	16.44	17.02
Maintenance Spares	15% of O&M	29.60	30.64
Receivables	2 months	138.54	141.14
Total Working Capital		184.58	188.80
Weighted average rate of interest(FY 2017-18)		11.09%	11.11%
Interest on Working Capital		20.47	20.98





Table 24: Interest on Working Capital for Hydel Projects FY 2017-18 (Rs. Cr)

Particulars	Sibbald	Jinn	RSP	MHP	SHP	MSP	TMM	Siddhu	APR for FY 2017-18				
									UppC	RSD	MHP	ASIP	
MYT Order													
O&M expenses	2.02	3.67	-	4.77	3.19	0.02	-	2.19	3.22	2.91	5.22	2.90	-
Maintenance Spares	3.64	6.61	-	8.58	5.74	0.04	-	3.94	5.80	5.25	9.40	5.21	-
Receivables	6.34	11.54	62.58	15.68	8.84	0.13	51.72	5.75	12.40	89.64	18.99	11.21	0.56
Total Working Capital	12.00	21.82	62.58	29.03	17.77	0.19	51.72	11.88	21.42	97.80	33.61	19.32	0.56
Weighted average rate of interest(FY 2017-18) (%)													
Interest on Working Capital	1.13	2.05	5.86	2.72	1.66	0.02	4.84	1.32	2.38	10.8	3.73	2.14	0.06

Table 25: Interest on Working Capital for Hydel Projects FY 2018-19 (Rs. Cr)

Particulars	Sibbald	UppC	RSP	MHP	SHP	MSP	TMM	Siddhu	RE for FY 2018-19				
									UppC	RSD	MHP	ASIP	
MYT Order													
O&M expenses	2.11	3.79	-	4.95	3.29	0.02	-	2.27	3.34	3.02	5.39	3.01	-
Maintenance Spares	3.81	6.82	-	8.90	5.93	0.04	-	4.08	6.01	5.43	9.70	5.41	-
Receivables	7.03	11.85	63.13	18.00	9.13	0.13	53.26	5.92	12.74	90.97	19.44	11.51	0.56
Total Working Capital	12.95	22.46	63.13	31.85	18.35	0.19	53.26	12.28	22.09	99.41	34.53	19.92	0.56
Weighted average rate of interest(FY 2018-19) (%)													
Interest on Working Capital	1.11	2.10	5.91	2.98	1.72	0.02	4.99	1.36	2.45	11.05	3.84	2.21	0.06

3.12 Operating Expenses for FY 2017-18 and FY 2018-19

3.12.1 A&G and R&M Expense

Hon'ble Commission has in MYT order approved R&M and A&G Expenses of Rs.133.56 Cr.; for FY 2017-18, Rs.104.19 Cr.; for FY 2018-19 for Generation Business and Rs. 425.12 Cr., for FY 2017-18, Rs. 455.23 Cr.; for FY 2018-19 for Distribution Business.

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.

It may be noted that R&M expenses and A&G Expenses has been linked to K factor and WPI index. K is the constant governing the relationship between R&M and A&G Expenses and Gross Fixed Assets. For computing K,

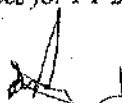
It is submitted that while approving the A&G and R&M expense for Control Period (FY 2017-18 to FY 2019-20) Hon'ble Commission has estimating "K" factor for Control Period considering base R&M expense Rs. 361.31Cr; instead of Rs. 386.83 Cr.; and not considered operating expenses Rs. 25.52 Cr.; under base R&M expense for FY 2015-16. However, in the previous tariff order Hon'ble Commission has considered operating expenses as a part of R&M expense.

Furthermore, PSERC has taken base A&G expenses 171.89 Cr.; instead of Rs.186.11 Cr.; PSPCL request Hon'ble Commission may kindly consider base A&G expenses Rs.186.11 Cr.; as per audited annual accounts for FY 2015-16 for while estimating R&M expenses and A&G Expenses.

PSPCL has analysed R&M and A&G expenses and GFA for FY 2015-16, as given in the following table:

Table 26: Computation of K Factor

Particulars	Generation		Distribution		PSPCL
	As per MYT order			FY 2017-18 (APR)	
Opening GFA	23384.95	21057.16	23545.91	20896.20	44442.11
Closing GFA	23558.65	22897.10	23719.62	22736.12	46455.75
R&M Expenses	179.82	181.49	192.52	194.31	386.83
A&G Expenses	19.75	152.14	21.38	164.73	186.11



Particulars	Generation		Distribution		PSPCL
	As per MYT order				
	FY 2017-18 (APR)				
R&M and A&G Exp. as % of GFA	0.85%	1.52%	0.91%	1.65%	1.26%
K factor	0.85%	1.52%	0.91%	1.65%	1.26%

In view of the above, PSPCL has considered K-factor as 1.65% and 0.91% for distribution and generation business respectively for the FY 2017-18 and FY 2018-19 respectively. Further, PSPCL has considered the license fees and fees for determination of tariff as Rs 13.7 Cr⁶ for the FY2017-18 and FY 2018-19 over and above these expenses.

The increase in WPI index works out to 1.73% as determined by Hon'ble Commission for Control Period. Hence, for the purpose of R&M and A&G Expenses, PSPCL has considered the escalation index of 1.73% (i.e., average of increase in WPI from FY 2015-16 to FY 2016-17 as per latest data available).

Accordingly, PSPCL has projected combined R&M and A&G expenses for Generation and Distribution as under:

Table 27: R&M and A&G Expenses for Generation Business (Rs. Cr)

Particulars	FY 2017-18	FY 2018-19
Opening GFA	24173.33	24448.26
Closing GFA	24448.26	24751.15
Average GFA	24310.79	24599.70
K factor	0.91%	0.91%
Escalation factor	1.73%	1.73%
R&M and A&G Expenses	223.86	226.52

Table 28: R&M and A&G Expenses for Distribution Business (Rs. Cr)

Distribution	FY 2017-18	FY 2018-19
Opening GFA	25319.03	26623.95
Closing GFA	26623.95	28106.22
Average GFA	25971.49	27365.08
K factor	1.65%	1.65%
Escalation factor	1.73%	1.73%
License fees and fees for determination of tariff	13.70	13.70
R&M and A&G Expenses	448.52	471.85

⁶ Shown under the distribution R&M and A&G head for accounting purpose



3.12.2 Employee Cost

Employee cost is the most important constituent of O&M expenses. Employee cost includes the cost incurred on working employees as well as retirees. The cost of working employees includes salary, dearness allowance payable to them and other allowances such as HRA, LTC, medical reimbursement etc. In the case of retired employees and those retiring during the year, the corporation has to discharge liabilities towards pension, gratuity and leave encashment benefits etc, as applicable.

Inflation factor

Hon'ble Commission has taken Other Employee Cost" as per Audited Annual Accounts for FY 2015-16 i.e.; Rs.2356.44 Cr.; which has been considered as base for computing „Other Employee Cost" for subsequent years. The combination $(0.50 \cdot \text{CPI} + 0.50 \cdot \text{WPI})$ i.e., 2.93% is applied for FY 2017-18, FY 2018-19 respectively taking the immediate preceding year as the base year for calculation of „Other Employee Cost" for ensuing years. Accordingly, "Other Employee Cost" of FY 2016-17 works out to Rs.2425.48 Cr.; (Rs.2356.44 + 2.93% of Rs.2356.44); for FY 2017-18 works out to Rs.2496.55 Cr.; (Rs.2425.48 + 2.93% of Rs.2425.48); for FY 2018-19 works out to Rs.2569.70 Cr.; (Rs.2496.55 + 2.93% of Rs.2496.55).

Accordingly the Hon'ble Commission approves Employee Cost of Rs. 722.01 Cr.; for FY 2017-18, Rs.; 746.20 Cr.; for FY 2018-19 for Generation Business and Rs. 3966.29 Cr.; for FY 2017-18, Rs. 4099.19 Cr.; for FY 2018-19 for Distribution Business.

PSPCL submits that Inflation factor 2.93% as consider by Hon'ble Commission is grossly inadequate considering even the average rise in salaries and other expenses. The Hon'ble Commission would appreciate that in any industry with poachable talent, it is important that salaries are raised at least at par with the industry average to retain employees. Considering the fact that Employee Expenses form the biggest chunk in the overall operational expenditure, a mere 2.93% hike in Employee Expenses is grossly insufficient to maintain salaries even at industry average.

Moreover, Employee Expenses are driven primarily by retail inflation, i.e. CPI. The Dearness Allowances in the salaries of the employees is linked to CPI Industrial Workers index numbers. PSERC MYT Regulations, 2014 has linked employee expenses to 50% CPI and 50% WPI Index. The Employee expense forecast will be approved for a period of three years. Correspondingly, the escalation factor considered should also be based on longer-term data and should not rely only on short-term data. Employing a short-term inflation to forecast employee expenses has the potential of leaving the



Company out of pocket and short of cash to pay its employees or incur appropriate level of general and operational expenses.

The PSPCL further submits 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 beyond its control. Hon'ble APTEL in its Judgment dated October 18, 2016 in Appeal Nos. 7, 46 and 122 of 2011 also held as under:

"...In the case of the employees of the PSPCL, they are regular staff of the Corporation and it being a Govt. company, they are to be governed by the rules and regulations of the Govt...

...Reduction of Rs. 100 Crs does not appear to be based on specific premises. Again, reduction as usual on regular basis in terms of the practice of the past by 28.48% does not appear to be justified. Our finding on this issue is the same plus the observation that in course of true up in respect of Tariff Order for FY 2011-12 the Commission will review the matter. The issue is answered in favour of the appellant."

Hon'ble APTEL vide its Judgment dated September 11, 2014 in Appeal No. 174 of 2012 and its subsequent judgment dated March 30, 2015 in review Petition No. 6 of 2015 pertaining to the employees cost had held (paragraph 11 of the Judgment dated March 30, 2015) as under:

"This Appellate Tribunal while dealing with the issue of Wholesale Price Index framed the said issue and discussed the same at length and then decided the said issue. This Appellate Tribunal in its previous judgment also considered the Regulations and the Wholesale Price Index and held that actual costs need to be considered. We after considering the previous judgment and discussion on the said issue at length in our judgment dated 11.09.2014 in the said Appeal No. 174 of 2012, after referring to the decision of the State Commission on the Wholesale Price Index, directed that the actual amount spent, subject to prudence check, is to be considered. We do not find any error apparent on the face of our judgment dated 11.09.2014 warranting us to review our aforesaid judgment. For a moment, if we accept the contention of the Review Petitioner/State Commission that the finding in para no. 40.1. of our judgment dated 11.09.2014 is to be deleted, then it would result in the Issue No. (ii) framed being rendered without any finding and would also result in the previous decisions also being overruled/reversed. While disposing of the Issue Nos. (i) & (ii) in our judgment in Appeal No. 174 of 2012, we expressed our view in-para nos. 17 & 18 of our judgment which we have already quoted above"



In view of the above, PSPCL has proposed the employee expenses for the FY 2017-18 and FY 2018-19 on the basis of actual expenses of past years. PSPCL humbly request the Hon'ble Commission to allow the employee expenses as projected by PSPCL.

Further, PSPCL has not considered the provision for Progressive Funding during the control period since the matter is pending before Hon'ble APTEL. PSPCL has also not considered impact of wage revision of 6th Pay Commission during FY 2017-18 and FY 2018-19. PSPCL craves leave to submit these expenses on actual basis, since these expenses are being allowed on actual basis.

Further, as regards share of BBMB expenses, it is submitted that PSPCL has taken the employee expenses of BBMB for the FY 2017-18 and FY 2018-19 as approved by Hon'ble Commission in the MYT order for Control Period.

Further, as per PSERC tariff order for FY 2017-18

5.10.11 Further, PSPCL vide Memo No. 379/CC/DTR/Dy.CAO/245 Vol-1 dated 28.03.2017 has submitted that it had issued necessary internal instructions regarding grant of interim relief of salary and pension payments by enhancement of 5% of basic pay/pension. The Commission has not considered the impact of this pay enhancement at this stage and shall consider the same at the time of Annual Performance Review / True Up exercise.

Hence, PSPCL has taken impact of the necessary internal instructions regarding grant of interim relief of salary and pension payments by enhancement of 5% of basic pay/pension under revised estimation of Employee expenses.

Accordingly, PSPCL has considered the employee expenses for Distribution and Generation for FY 2017-18 and FY 2018-19 as under:

Table 29: Employee cost for (Rs Cr)

Item	FY 2017-18 (APR)	FY 2018-19 (RE)
Basic Pay	1228.73	1241.34
Overtime	17.79	18.68
Dearness Allowance	1603.27	1721.87
Other Allowances		
Fixed medical Allowance	31.12	29.28
Conveyance Allowance	33.48	33.82



Item	FY 2017-18 (APR)	FY 2018-19 (RE)
Other Allowances	162.00	163.66
Generation incentive (for generation only)	16.80	17.64
Medical Expenses Reimbursement	21.13	22.31
Total (1 to 6)	3114.31	3248.60
Terminal Benefits		
Earned Leave Encashment	151.54	144.36
Gratuity (including arrear)	245.78	234.89
Workman's compensation	0.26	0.26
Total (7 to 14)	397.58	379.51
Pension Payments		
Basic Pension		
Dearness pension	1711.53	1802.26
Dearness Allowance		
Any other expense	164.14	179.74
Total (15 & 16)	1,875.67	1,982.00
Total Expenses	5,387.56	5,610.12
Amount capitalised	131.57	137.01
Net amount	5,255.98	5,473.11
BBMB share	258.23	271.14
Net Employee's Cost	5514.21	5744.25

The above employee expenses have been projected in line with the PSPCL submission for MYT Control Period.

With regard to the employee cost Hon'ble APTEL vide its Judgment dated 11.09.2014 in Appeal No 174/2012 and its subsequent judgment dated 30.3.2015 in review Petition 6/2015 pertaining to the employees cost had held (paragraph 11 of the judgment dated 30.3.2015) as under:

"This Appellate Tribunal while dealing with the issue of Wholesale Price Index framed the said issue and discussed the same at length and then decided the said issue. This Appellate Tribunal in its previous judgment also considered the Regulations and the Wholesale Price Index and held that actual costs need to be considered. We after considering the previous judgment and discussion on the said issue at length in our judgment dated 11.09.2014 in the said Appeal No. 174 of 2012, after referring to the decision of the State Commission on the Wholesale Price Index, directed that the actual



amount spent, subject to prudence check, is to be considered. We do not find any error apparent on the face of our judgment dated 11.09.2014 warranting us to review our aforesaid judgment. For a moment, if we accept the contention of the Review Petitioner/State Commission that the finding in para no. 40.1. of our judgment dated 11.09.2014 is to be deleted, then it would result in the Issue No. (ii) framed being rendered without any finding and would also result in the previous decisions also being overruled/reversed. While disposing of the Issue Nos. (i) & (ii) in our judgment in Appeal No. 174 of 2012, we expressed our view in para nos. 17 & 18 of our judgment which we have already quoted above"

Keeping in view the above judgments of Hon'ble APTEL, Hon'ble Commission is requested to allow the revised estimates and projections of employee cost for the year FY 2017-18 and FY 2018-19. It is prayed that the Hon'ble Commission may consider and approve the employee expenses proposed for the FY 2017-18 and FY 2018-19.

3.13 DSM Fund

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.

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."*

PSPCL proposes to create a DSM fund for funding the DSM activities. It is submitted that total amount of Rs. 10 Cr.; has been proposed for FY 2017-18 and FY 2018-19 as allowed by Hon'ble Commission.

PSPCL submits that it is very difficult for it to implement demand side measures to manage demand efficiently and requires taking 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.



3.14 Revenue from sale of power in FY 2017-18 and FY 2018-19

Revenue from sale of power for FY 2017-18 and FY 2018-19 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 2017-18.

Revenue from sale of power for Control Period has been determined based on the energy sales estimated and category wise tariff approved by the Commission in its Tariff Order 2017-18. The revenue projected at existing tariff is shown as under:

As per Commission's directions in tariff order for FY 2017-18

".....Therefore, within Two Part Tariff structure, the Commission, in order to further encourage the industry for productive use of surplus power, decides to have reduced energy charges for FY 2017-18 @Rs. 4.45 per kWh for Small Power and Rs.4.23 per kVAh for Large Supply/Medium Supply consumers, for all categories of 'Industrial Consumers' who consume power above the threshold limit....."

As per the above PSERC direction, for the projection of revenue for Industrial consumers, maximum threshold sales of last two years have been considered for ABR and further, revenue from any additional sales beyond the threshold limit has been computed @ Rs. 4.23/kWh for Small Power and Rs. 4.23/kVAh per unit for Large Supply/Medium Supply consumers for 50% of additional sales assuming rest of the 50% sales beyond the threshold limit due to sales growth.

Actual PLEC and HV Rebate, TOD tariff and TOD Rebate for adjusting PLEC etc. recorded during FY 2016-17 were Rs. 584.77 Cr.; and Rs. 303.65 Cr.; same has considered for FY 2017-18 and FY 2018-19 respectively.

Revenue from sale of power for FY 2017-18 and FY 2018-19 is estimated considering the category wise average billing rates (ABR) approved by the Hon'ble Commission in the tariff order for FY 2017-18. The revenue expected for current year and ensuing year is shown in the table given below:



Table 30: Revenue for FY 2017-18 and FY 2018-19 (Rs Cr.)

Consumer Category	Revenue as per ABR FY 2017-18	Revenue as per ABR FY 2018-19
Domestic	8,327.53	8,943.60
Commercial (NRS)	2,959.18	3,196.51
Industrial		
<i>Small Supply</i>	614.84	633.91
<i>Medium Supply</i>	1,527.23	1,618.48
<i>Large Supply</i>	8,527.67	9,085.88
Total	10,669.74	11,338.27
Street Lighting	138.71	144.39
Bulk Supply	480.76	495.46
Railway Traction	154.09	167.13
Sub-total	22,730.00	24,285.36
AP Consumption	6,252.05	6,736.82
Total within State	28,982.05	31,022.18
Common Pool	144.15	159.38
Outside State	142.4	50.78
Total Sales	29,268.60	31,232.33
Add: PLEC, MMC etc.	584.77	584.77
Less HV Rebate, TOD tariff and TOD Rebate for adjusting PLEC	-303.65	-303.65
Grand Total	29,549.72	31,513.45

3.15 SUBSIDY

AP consumption- The total sale of respective year and Average Billing rate of FY 2017-18 and FY 2018-19 is considered for calculation of subsidy for the control period.

Scheduled Castes DS Consumers: Subsidy for SCDS has been estimated based on actual per unit subsidy realisation during FY 2016-17 on projected consumption for FY 2017-18 and FY 2018-19 based on 3 years CAGR.

Non- SC BPL DS Consumers: Subsidy for NSC-BPL-DS has been estimated based on actual per unit subsidy realisation during FY 2016-17 on projected consumption for FY



2017-18 and FY 2018-19 based on 3 years CAGR.

Backward Class DS Consumer- Hon'ble Commission has estimated Rs. 707.98 Cr.; for FY 2017-18 same has been considered for the FY 2017-18 and FY 2018-19.

Freedom Fighter: Hon'ble Commission has estimated Rs. 0.83 Cr.; for FY 2017-18 same has been considered for the FY 2017-18 and FY 2018-19.

Small Power Consumer- As per PSERC tariff order for FY 2017-18 Appendix -IV, supply power industrial consumers at concessional tariff of Rs. 4.99 per unit for FY 2017-18, so the total unit consumption is considered for calculation of subsidy for FY 2017-18 and for FY 2018-19 subsidy has been calculated assuming supply energy charge @ Rs.5/kWh.

Medium/Large Power Consumer- No subsidy has been proposed for FY 2017-18 and FY 2018-19.

The following tables provide summary of subsidy receivable for FY 2017-18 and FY 2018-19 as per the projections for the period.

Table 31: Details of subsidy receivable for FY 2017-18 (Rs Cr)

Consumer Category	Consumption (MU)	Amount of subsidy due from GOP (Rs. Cr.) Single Part
AP Consumers	12355.83	6252.05
Scheduled Castes DS Consumers	2609.40	1359.34
Non- SC BPL DS Consumers	163.48	84.71
Backward Class DS Consumer		707.98
SP	1007.93	106.52
MP	2343.90	
LS	12647.99	
Freedom Fighter		0.83
Total		8511.44

Table 32: Details of subsidy receivable for FY 2018-19 (Rs Cr)

Consumer Category	Consumption (MU)	Amount of subsidy due from GOP (Rs Cr.)
AP Consumers	13313.88	6736.82
Scheduled Castes DS Consumers	2964.09	1544.12
Non- SC BPL DS Consumers	182.54	94.58
Backward Class DS Consumer		707.98
SP	1035.80	49.72
MP	2463.43	
LS	13187.05	
Freedom Fighter		0.83
Total		9134.05

3.16 Non-Tariff Income

PSPCL has projected the Non-tariff income for FY 2017-18 and FY 2018-19 based on the same philosophy as projected for Control Period based on past year trend and increase in energy sales and revenue. The Non-tariff income projected for the FY 2017-18 and FY 2018-19 is as under:

For the projection of Wheeling charges from Open Access, PSPCL has considered the impact of PSERC order dated 11th August 2016, has been considered. Wheeling charges for the FY 2017-18 has been considered same as actual realisation for H1 for FY 2017-18 assuming nil Open Access during the H2 of FY 2017-18 and further nil Open Access during FY 2018-19.

Non-Tariff Income for FY 2017-18 and FY 2018-19 is provided in the table given below:

Table 33: Non-tariff Income (Rs. Cr.)

Particulars	FY 2017-18 MYT order	FY 2018-19 MYT order	FY 2017-18 (APR)	FY 2018-19 (RE)
Meter/service rent	101.81	106.64	99.69	105.59
Late payment surcharge	78.04	78.04	137.70	137.70
Misc. receipts	402.94	402.94	591.02	591.02
Misc. charges* (Fuse, pub. lighting)	24.20	24.20	15.59	15.59

Particulars	FY 2017-18 MYI order	FY 2018-19 MYI order	FY 2017-18 (APR)	FY 2018-19 (RE)
mtc.chgs, recon. fee)				
Wheeling charges	55.06	55.06	9.07	-
Interest on staff loans & advance	55.32	55.32	56.07	56.07
Income staff welfare activities	0.05	0.05	0.04	0.04
Investments & bank balances	11.64	11.64	10.79	10.79
Depreciation from Consumer Contribution	129.46	129.46	129.46	129.46
Total non tariff income	858.52	863.35	1,049.43	1,046.26
Less: Late Payment surcharge			137.70	137.70
Less: Rebate for timely payment for Power Purchase			123.21	123.21
Net Non-tariff Income	858.52	863.35	788.51	785.35

It is further submitted, that the Hon'ble Commission is requested not to consider the amount against the late payment surcharge as part of Non-Tariff Income for the purpose of projections for FY 2017-18 and FY 2018-19. 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.

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 is 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."

Several other SERCs and utilities also follow the same approach with respect to income from late payment surcharge. The excerpt 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

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State	Clause No.	Relevant extract
		<p>same @ 9% per annum.</p> <p>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.</p>
Bihar Electricity Regulatory Commission	Tariff Order for FY 2011-12	<p>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.</p> <p>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.</p>

Also the surcharge for late payment for power purchase is being disallowed by the Hon'ble Commission. On the same analogy the rebate for timely payment of power purchase shall not be considered in the non tariff income.

In view of the above, it is prayed that the Late Payment Surcharge and timely payment of power purchase may not be considered in non tariff income.

3.16.1 O&M impact of BBMB

It is submitted that Hon'ble Commissions order dated: November 8, 2017, on Petition No 80 of 2016 has considered that BBMB O&M expenses Rs. 945.82 Cr., shall be allowed to PSPCL. Relevant extract of the order as follows.

Paragraph 3.13.7 ".....O&M expenses allowed in the previous paras are adjusted to the tune of 154.93 (261.75-106.82) crore as determined by CERC in its earlier order dated 12.11.2015 & 21.03.2016 and O&M expenses will be further adjusted as per Tariff Order of BBMB for FY 2014-19 as and when determined by CERC....."

" Paragraph 4.12.2 ".....O&M expenses allowed in the previous paras are adjusted to the tune of 152.37 (259.19-106.82) crore as determined by CERC in its earlier order dated 12.11.2015 & 21.03.2016 and O&M expenses will be further adjusted as per Tariff Order of BBMB for FY 2014-19 as and when determined by CERC....."

"The revenue gap occurring on this account and carrying cost thereon for these years will be considered in the next Tariff Order of PSPCL, subject to the Central Commission's Tariff Order of BBMB for FY 2009-14 (True-Up) and for FY 2014-19 as and when the same is issued by CERC"

Henceforth, PSPCL has estimated an amount of Rs. 1410.88 Cr.; as an impact of Hon'ble Commission order dated: November 8, 2017, on Petition No 80 of 2016 same as per table below and claimed in the APR for FY 2017-18 as a separate item as (Impact of PSERC order dated November 8, 2017 on BBMB O&M expanses).

PSPCL request to Hon'ble Commission may kindly consider the BBMB O&M expenses along with carrying cost while approving the revised estimates for FY 2017-18 accordance to order on Petition No 80 of 2016.

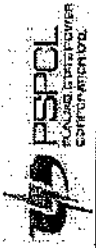


Table 34: Summary of ARR for Hydel FY 2017-18 and FY 2018-19 (Rs. Cr.)

Financial Years	Amount allowable as per the directions of Hon'ble APTEL vide order dated 06.09.2017	Cumulative Impact	Rate of Interest (as considered by PSERC in various tariff orders)								Carrying Cost
			FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19		
			11.25%	11.24%	11.30%	11.31%	9.36%	9.36%			
FY 09-10	76.32										
FY 10-11	126.93										
FY 11-12	133.44										
FY 12-13	114.27	450.96	25.37	53.54	59.87	66.7	61.44	67.19	36.74	370.86	
FY 13-14	128.01	128.01		7.19	15.28	17.02	15.68	17.15	9.38	81.69	
FY 15-16	154.93	154.93				8.76	15.32	16.76	9.16	50	
FY 16-17	152.37	152.37						14.26	7.8	22.06	
	886.27									524.61	
Cumulative impact in the T.O. FY 2017-18											1,410.88

For the computation of carrying cost rate of interest of respective years for have been taken from the Hon'ble Commission tariff orders.

3.17 Overall ARR for FY 2017-18 and FY 2018-19

PSPCL has worked out a cumulative net gap of Rs. 2966.82 Cr.; and 2048.67 Cr.; for FY 2017-18 and FY 2018-19 respectively which has been worked out as per the provisions in the MYT tariff regulations.

The overall summary of the proposed ARR FY 2017-18 and FY 2018-19 is provided in the table below.

Table 35: Summary of ARR for FY 2017-18 and FY 2018-19 (Rs. Cr.)

Particulars	FY 2017-18 (APR)	FY 2018-19 (RE)
Fuel Cost	1,601.35	1,661.60
Cost of power purchase	17,001.58	19,120.37
Employee cost	5,514.21	5,744.25
R&M and A&G Expenses	672.38	698.37
Depreciation	1,597.30	1,652.78
Interest Charges	3,167.08	3,075.47
Return on Equity	942.62	942.62
Interest on Working Capital	140.78	145.55
Transmission Charges Payable to PSTCL	1,234.87	1,283.86
Provision for DSM fund	10.00	10.00
Maintenance charges payable to GoP on account of RSD*	12.00	12.60
Total Revenue Requirement	31,894.17	34,347.47
Less Non-Tariff income	788.51	785.35
Net Revenue Requirement	31,105.66	33,562.12
Less Revenue from existing tariff	29,549.72	31,513.45
Gap (+)/surplus (-) for the year	1,555.94	2,048.67
Impact of PSERC order dated 8.11.17 on BBMB O&M expanses	1410.88	
Total Revenue Gap	2966.82	2,048.67
Gap (+)/surplus (-) previous years	-	2966.82
Carrying cost		323.84
Total revenue Gap (+)/surplus (-) along with carrying cost for the year	2966.82	5,339.33

*On account of Maintenance charges payable to GoP on account of RSD Rs. 12 Cr.; for FY 2017-18 and Rs. 12.60 Cr.; for FY 2018-19 have been considered as per GoP notification dated 24 May 2017. Attached under evidential document section of this petition.

PSPCL has not considered any past period gap/surplus in the Total Revenue Gap of Rs. 2966.82 Cr.; as projected for FY 2017-18, same shall be considered during true up for FY 2016-17.

PSPCL requests the Commission to allow the same based on the rationale submitted in this petition.

3.18. Carrying cost for FY 2017-18

The carrying cost for Revenue Gap/(surplus) for FY 2017-18 has been computed as shown in the following Table

Table 36: Carrying Cost for FY 2017-18 (Rs. Cr.)

Particulars	ROI	PSPCL
Revenue gap for FY 2017-18		2966.82
Carrying cost for FY 2017-18 (half year)	10.63%	157.73
Carrying cost for FY 2018-19 (half year)	10.63%	166.11

RoI has been taken as per actual average rate of interest for FY 2017-18

The total Revenue Gap along with carrying cost for FY 2018-19 works out to Rs. 5,339.33 Cr. The Petitioner prays to the Hon'ble Commission to approve this Revenue Gap, arising out of Annual Performance Review of FY 2017-18.





Table 37: Summary of ARR for Generation and Distribution FY 2017-18 and FY 2018-19 (Rs. Cr.)

Particulars	PSPCL		Generation		Distribution	
	FY 2017-18	FY 2018-19	FY 2017-18	FY 2018-19	FY 2017-18	FY 2018-19
Fuel Cost	1,601.35	1,661.60	1,601.35	1,661.60	-	-
Cost of power purchase	17,001.58	19,120.37	-	-	17,001.58	19,120.37
Employee cost	5,514.21	5,744.25	1,031.34	1,070.73	4,482.87	4,673.52
R&M and A&G Expenses	672.38	698.37	223.86	226.52	448.52	471.85
Depreciation	1,597.30	1,652.78	608.34	614.23	988.96	1,038.55
Interest Charges	3,167.08	3,075.47	62.21	72.24	3,104.88	3,003.23
Return on Equity	942.62	942.62	577.90	577.90	364.72	364.72
Interest on Working Capital	140.78	145.55	140.78	145.55	-	-
Transmission Charges Payable to PSTCL	1,234.87	1,283.86	-	-	1,234.87	1,283.86
Provision for DSM fund	10.00	10.00	-	-	10.00	10.00
Maintenance charges payable to GoP on account of RSD	12.00	12.60	12.00	12.60	-	-
Total Revenue Requirement	31,894.17	34,347.47	4,257.77	4,381.36	27,636.40	29,966.11
Less Non-Tariff income	788.51	785.35	-	-	788.51	785.35
Net Revenue Requirement	31,105.66	33,562.12	4,257.77	4,381.36	26,847.89	29,180.76
Less Revenue from existing tariff	29,549.72	31,513.45	-	-	29,549.72	31,513.45
Gap (+) /surplus (-) for the year	1,555.94	2,048.67	4,257.77	4,381.36	(2,701.83)	(2,332.70)
Past Period Gaps	-	-	-	-	-	-
Total Revenue Gap	1,555.94	2,048.67	4,257.77	4,381.36	(2,701.83)	(2,332.70)

Note: Above allocation has been done as per the base allocation statement for MYT Control Period.

Table 38: Summary of ARR for Wheeling and Retail Supply FY 2017-18 and FY 2018-19 (Rs. Cr.)

Particulars	DISTRIBUTION		WHEELING		RETAIL SUPPLY	
	FY 2017-18	FY 2018-19	FY 2017-18	FY 2018-19	FY 2017-18	FY 2018-19
Cost of Purchase for Own Generation	4,257.77	4,381.36	-	-	4,257.77	4,381.36
Cost of power purchase	17,001.58	19,120.37	-	-	17,001.58	19,120.37
Employee cost	4,482.87	4,673.52	2,913.87	3,037.79	1,569.01	1,635.73
R&M and A&G Expenses	448.52	471.85	291.54	306.70	156.98	165.15
Depreciation	988.96	1,038.55	890.06	934.70	98.90	103.86
Interest Charges	3,104.88	3,003.23	2,794.39	2,702.91	310.49	300.32
Return on Equity	364.72	364.72	328.25	328.25	36.47	36.47
Transmission Charges Payable to PSTCL	1,234.87	1,283.86	-	-	1,234.87	1,283.86
Provision for DSM fund	10.00	10.00	1.00	1.00	9.00	9.00
Total Revenue Requirement	31,894.17	34,347.47	7,219.11	7,311.34	24,675.07	27,036.13
Less Non-Tariff income	788.51	785.35	78.85	78.54	709.66	706.82
Net Revenue Requirement	31,105.66	33,562.12	7,140.26	7,232.81	23,965.40	26,329.31
Less Revenue from existing tariff	29,549.72	31,513.45				
Gap (+) / surplus (-) for the year	1,555.94	2,048.67				

*Allocation of ARR for Wheeling and Retail Supply has been done in line with MYT



Table 39: Summary of ARR for Hydro and Thermal FY 2017-18 and FY 2018-19 (Rs. Cr.)

Particulars	Generation			Hydro			Thermal		
	FY 2017-18	FY 2018-19	FY 2017-18	FY 2018-19	FY 2017-18	FY 2018-19	FY 2017-18	FY 2018-19	
Annual Fixed Charges									
Employee cost	1,031.34	1,070.73	174.41	181.07	856.93	889.66			
R&M and A&G Expenses	223.86	226.52	22.92	23.19	200.94	203.33			
Depreciation	608.34	614.23	311.29	314.31	297.05	299.92			
Interest charges	62.21	72.24	28.10	32.63	34.11	39.61			
Return on Equity	577.90	577.90	262.04	262.04	315.86	315.86			
Interest on Working Capital	140.78	145.55	20.47	20.98	120.31	124.57			
Maintenance charges payable to GoP on account of RSD	12.00	12.60	12.00	12.60	-	-			
Total	2,656.43	2,719.76	831.23	846.82	1,825.19	1,872.94			
Energy Charges									
Fuel Cost	1,601.35	1,661.60			1,601.35	1,661.60			
Net ARR	4,257.77	4,381.36	831.23	846.82	3,426.54	3,534.54			

Note: Above allocation has been done as per the base allocation statement for MYT Control Period.

Table 40: Summary of ARR for Thermal Plants FY 2017-18 (Rs. Cr.)

Particulars	FY 2017-18 as per MYT order			FY 2017-18 (APR)		
	GNDTP	CGSST	GNDFP	GNDTP	CGSST	GNDFP
Employee cost	183.20	276.01	121.22	270.46	407.49	178.97
R&M and A&G Expenses	36.28	33.06	41.78	38.13	89.27	73.53
Depreciation	44.66	23.62	146.09	62.63	32.41	202.01
Interest charges	5.49	10.47	1.41	14.04	9.61	10.46
Return on Equity	77.27	70.41	88.96	103.25	92.45	120.15
Interest on Working Capital	10.37	44.44	30.34	20.77	50.68	48.71
Fuel Cost		979.01	643.32	95.10	682.25	824.00
Net ARR	357.27	1437.02	1073.12	604.39	1,364.17	1,457.83

Table 41: Summary of ARR for Thermal Plants FY 2018-19 (Rs. Cr.)

Particulars	FY 2018-19 MYT as per MYT order			FY 2018-19 (RE)		
	GNDTP	CGSST	GNDFP	GNDTP	CGSST	GNDFP
Employee cost	189.33	285.25	125.29	280.79	423.05	185.81
R&M and A&G Expenses	3.71	34.01	42.84	38.59	90.33	74.41
Depreciation	44.66	23.89	146.11	63.24	32.72	203.96
Interest charges	0.08	16.79	0.06	16.31	11.16	12.14
Return on Equity	75.49	69.02	86.94	103.25	92.45	120.15
Interest on Working Capital	9.25	44.62	30.58	17.91	66.35	40.31
Fuel Cost	-	969.98	646.40	-	1,073.85	587.75
Net ARR	322.52	1443.56	1078.22	520.09	1,789.92	1,224.54

Note: Above allocation for APR for FY 2017-18 and RE for FY 2018-19 has been done as per the base allocation statement for MYT Control Period.

PSPCL has claimed the Fixed Cost for GNDTP as per the allocation statement considered for MYT Control Period. Further, the fixed cost claimed for GNDTP is a legislative expense which has to be paid by PSPCL. Hon'ble Commission may kindly be allow the same as claimed by PSPCL.



Table 42: Summary of ARR for Hydro Plants FY 2017-18 (Rs. Cr.)

Components	FY 2017-18 (MYT) (Rs. Cr.)						FY 2017-18 (APR) (Rs. Cr.)						
	Shanan	UBDC	RSD	MHP	ASHP	Micro	BBMB	Shanan	UBDC	RSD	MHP	ASHP	Micro
Employee cost	23.17	36.36	-	48.54	33.51	-	-	23.47	36.83	31.00	49.17	33.94	-
R&M and A&G Expenses	1.10	7.68	-	8.69	4.73	0.23	258.23	2.82	1.83	3.98	13.47	0.82	-
Depreciation	7.99	6.51	192.87	12.22	2.93	-	21.86	3.99	8.09	261.82	22.26	15.13	-
Interest charges	2.32	0.24	17.36	3.42	0.13	-	14.30	0.30	2.73	21.06	2.12	1.84	0.05
Return on Equity	2.34	16.36	150.17	18.51	10.08	0.50	11.09	2.58	22.54	197.12	23.20	13.37	3.23
Interest on Working Capital	1.13	2.05	5.86	2.72	1.66	0.02	4.84	1.32	2.38	10.85	3.73	2.14	0.06
Maintenance charges payable to GoP on account of RSD	-	-	9.19	-	-	-	-	-	-	12.00	-	-	-
Net ARR	38.05	69.20	375.45	94.10	53.04	0.75	310.32	34.49	74.40	537.83	113.94	67.24	3.34

Note: Above allocation for (APR FY 2017-18) has been done as per the base allocation statement for MYT Control Period.

Table 43: Summary of ARR for Hydro Plants FY 2018-19 (Rs. Cr.)

Particulars	FY 2018-19 MYT order						FY 2018-19 (RE)						
	Shanan	UBDC	RSD	MHP	ASHP	Micro	BBMB	Shanan	UBDC	RSD	MHP	ASHP	Micro
Employee cost	23.95	37.58	-	50.17	34.63	-	-	24.37	38.24	32.18	51.05	35.23	-
R&M and A&G Expenses	1.42	7.90	-	9.19	4.88	0.24	271.14	2.86	1.85	4.03	13.63	0.83	-
Depreciation	9.20	6.56	193.26	12.87	2.96	-	21.85	4.03	8.17	264.36	22.47	15.28	-
Interest charges	3.50	0.91	23.65	14.15	0.71	-	10.73	0.35	3.17	24.46	2.46	2.13	0.06
Return on Equity	2.89	16.05	146.88	18.65	9.90	0.49	10.84	2.58	22.54	197.12	23.20	13.37	3.23
Interest on Working Capital	1.21	2.10	5.91	2.98	1.72	0.02	4.99	1.36	2.45	11.05	3.84	2.21	0.06
Maintenance charges payable to GoP on account of RSD	-	-	9.07	-	-	-	-	-	-	12.60	-	-	-
Net ARR	42.17	71.10	978.77	108.01	54.80	0.75	319.55	35.55	76.43	545.79	116.64	69.06	3.35

Note: Above allocation for (RE FY 2018-19) has been done as per the base allocation statement for MYT Control Period.

3.19 Submission to the Hon'ble Commission

3.19.1 Disallowances of O&M cost for RSD

PSPCL had claimed O&M expenses under RSD Project for control period as per allocation statement same has been disallowed by Hon'ble Commission in the tariff order for FY 2017-18 on the ground that O&M expenses as claimed by PSPCL in addition to the claim of royalty which is on higher side.

It is submitted that the Hon'ble Commission has disallowed the said expenses without considering the actual facts. Hereby, it is respectfully submitted that the above R&M and A&G expenses under RSD project are the expenses to be incurred by PSPCL R&M works for Power Houses, Switchyard and PSPCL occupied buildings viz. Quarters occupied by PSPCL employees, PSPCL offices & Stores and out of these expenses, nothing will be spent on the Dam, as expenses on the R&M civil works of the Dam are incurred by Punjab irrigation department. Further, employee cost pertaining to RSD Project is a legislative expense as actual item of expense which is to be paid by PSPCL. In view of the above, the employee cost and A&G expenses pertaining to RSD project as claimed by PSPCL in the APR petition for FY 2017-18 and ARR petition for FY 2018-19 may please be allowed.

3.19.2 Separate T&D loss target:

It is submitted that Hon'ble Commission is approving T&D loss target as a collectively for PSPCL and PSTCL. Hereby, it is to be noted that while approving T&D loss targets; Hon'ble Commission is considering transmission losses 2.5%. However, in actual scenario transmission losses are much higher than approved level. PSPCL submits that this additional burden of transmission losses is being laden to PSPCL which make adversary impact on PSPCL technical and financial performance.

PSPCL prays to the Hon'ble Commission to kindly set separate target of transmission and distribution losses for both the companies PSTCL and PSPCL.

3.19.3 Fuel Cost Adjustment as a separate item of expenses:

It is submitted that PCPCL has not considered any upward rise in fuel cost for the projection of energy charges for the FY 2017-18 and FY 2018-19. PSPCL prays to Hon'ble Commission that any change in fuel cost from the level approved by the Hon'ble Commission shall be allowed as a separate item of expense.



3.19.4 Interest on bridge loan

The Hon'ble Commission was allowing interest on working capital loans on normative basis. However the commission was allowing additionally interest on the bridge loans.

The year wise status of Interest allowed by Hon'ble Commission in earlier Tariff orders on short term loans taken as bridge loans is shown in the following table:

Year	Tariff Order	Review	True up	Year of T.O in which True-up held
Interest on loans taken to replace GOP Loans (Cr.)				
2009-10	163.44	151.05	130.62	2011-12
2010-11	239.73	275.74	258.38	2014-15
2011-12	274.71	377.76	322.46	2014-15
2012-13	377.76	339.68	NIL	2016-17
2013-14	339.68	339.68	NIL	2016-17
2014-15	339.68	NIL	---	---
2015-16	NIL	NIL	---	---
2016-17	NIL	---	---	---
Interest on loans taken in lieu of RBI bonds-Bridge loan (Cr.)				
2011-12	---	109.17	89.6	2014-15
2012-13	127.65	110.37	NIL	2016-17
2013-14	110.37	110.37	NIL	2016-17
2014-15	110.37	NIL	NIL	---
2015-16	NIL	NIL	---	---
2016-17	NIL	---	---	---
Interest on loans taken on a/c of non-refund of interest by GoP (Cr.)				
2012-13	---	50.73	NIL	2016-17
2013-14	50.73	NIL	NIL	2016-17

From the above table, it is quite clear that the Hon'ble Commission has allowed interest

- (i) On Bridge loans taken to replace GoP, Loans.
- (ii) On Bridge loans taken in lieu of RBI-Bonds.
- (iii) On Bridge loans taken on a/c of non-refund of interest by GoP in T.O., in Review & at the time of true-up of 2009-10, 2010-11 & 2011-12.

In the circumstances mentioned above and following the past practice of the Hon'ble Commission, it is respectfully submitted that the interest cost need to be allowed on various bridge loans as under

Year of (True up)	Interest on loans taken to replace GOP Loans	Interest on loans taken in lieu of RBI bonds- Bridge loan	Interest on loans taken on a/c of non-refund of interest by GoP	Non release of carrying cost by GoP	Payments towards additional levy of Panam Coal mine	Payment made to PTC Mallana as per order of Hon'ble SC	GoP loan under UDAY Scheme	Total (Cr.)
2014-15	338.60	129.18	46.93	41.84	11.00	4.40	-	514.73
2015-16	331.16	126.34	45.90	44.67	45.85	4.70	3.65	548.29
2016-17	52.22	19.93	7.24	13.73	14.10	1.45	1197.41	528.75

Hereby, PSPCL Submits that from the tariff orders of FY 2015-16 onward PSERC even has not discussed the issue of allowing interest on bridge loan and has also not allowed the same in FY 2012-13 to FY 2015-16 true up.

In this regards PSPCL prays Hon'ble Commission to consider the petitioner submission and allow interest on bridge loan while approving the annual revenue requirements for FY 2018-19.

PSPCL also submits that the performance of generation and distribution is a function of several input parameters, viz., economic changes, change in demand, energy transactions, vintage and technological advancement across its network etc. PSPCL has made sustained efforts to streamline its processes over the years as inherited from the erstwhile PSEB period.

PSPCL humbly submits that it has prepared the Petition considering the factors which are within control of PSPCL, however, PSPCL further requests the Hon'ble Commission to allow submission of further information and/or revision due to change in any accountable and non-accountable or uncontrollable parameters for future years as part of the subsequent submissions. The projections of ARR for FY 2017-18 to FY 2018-19, are in accordance with PSERC MYT Tariff Regulations, 2014.

Further, PSPCL humbly requests the Hon'ble Commission to admit this Petition for Generation and Distribution and approve the Aggregate Revenue Requirement for the FY 2017-18 to FY 2018-19, as provided in Petition.



4 Prayers

The Petitioner respectfully prays to the Hon'ble Commission:

- a) To admit the Petition seeking approval of APR for FY 2017-18 and revised estimates of ARR for FY 2018-19 for Generation and Distribution in accordance with the PSERC MYT Regulations, 2014;
- b) To approve the petition for Generation & Distribution Business for FY 2017-18 to FY 2018-19 as proposed by the Petitioner in the above-said Petition;
- c) To allow to submit true up for FY 2016-17 as an additional submission;
- d) To pass any other order/s as the Hon'ble Commission may deem fit and appropriate under the circumstances of the case and in the interest of justice;
- e) PSPCL also prays to the Hon'ble Commission to take the appropriate view on the revenue gap projected by PSPCL as per the PSERC MYT Regulations while determining the tariff for the FY 2018-19.
- f) To condone any error/ omission and to give opportunity to rectify the same;
- g) The filing is being done based on the best available information and in case of any change, the Petitioner may be permitted to make further submissions, addition and alteration to this Petition as may be necessary from time to time.



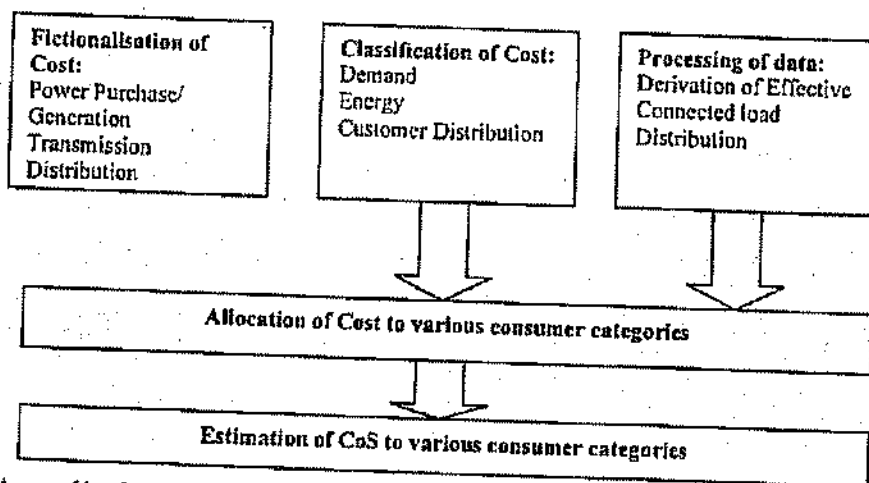
**SECTION-III - VOLTAGE WISE
COST OF SUPPLY**

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5 COST OF SUPPLY DETERMINATION FOR FY 2018-19

5.1 Methodology for determination of Cost of Supply

Hon'ble Commission in Tariff Order for FY 2013-14 has stipulated the methodology (as referred as Methodology-II in Order) for determination of voltage-wise category-wise cost of supply. The methodology has been depicted as under:



Accordingly, PSPCL has determined the voltage-wise category wise cost of supply for FY 2018-19 as discussed under:

5.2 Fictionalization of Cost of Supply of PSPCL into various functions

The projected Aggregate Revenue Requirement for the FY 2018-19 has been allocated to the different functions viz. Generation (Cost of own generation and power purchase), Transmission (Cost of intra-State Transmission System) and Distribution as shown in the following Table:

Sr. No.	Function	(Rs. Cr.)
		FY 2018-19
1	Generation	23,501.73
2	Transmission	1,283.86
3	Distribution	9,561.87
4	Total	34,347.46

The PSPCL submits that, in the Annual Performance Review Petition, it has considered the past Revenue Gaps of Rs. 3290.66 Crore. It is proposed to recover such past Revenue Gaps during FY 2018-19. The above said Table has not included the past Revenue Gaps, however, the Voltage-wise category wise cost of Supply has been determined separately for FY 2018-19 including the past Revenue Gaps in this document subsequently.

5.3 Classification of cost into Demand, Energy and Customer related cost

The cost of different functions for FY 2018-19 has been classified into cost related to Demand, Energy and Customer as per the methodology stipulated, as shown in the following Table:

(Rs. Cr.)					
Sr. No.	Function	Demand	Energy	Customer	Total Cost
1	Generation	-	23,501.73	-	23,501.73
2	Transmission	-	1,283.86	-	1,283.86
3	Distribution	6,737.70	-	2,824.17	9,561.87
4	Total	6,737.70	24,785.59	2,824.17	34,347.46

It is proposed that the past revenue gaps are pertaining to distribution function. Hence, the past revenue gap has been allocated to Demand and energy customer related cost in the same proportion of standalone cost. After taking into account the past revenue gap of Rs. 3290.66 Crore into distribution function, the cost of different functions for FY 2018-19 has been classified into cost related to Demand, Energy and Customer as per the methodology stipulated, as shown in the following Table:

(Rs. Cr.)					
Sr. No.	Function	Demand	Energy	Customer	Total Cost
1	Generation	-	23,501.73	-	23,501.73
2	Transmission	-	1,283.86	-	1,283.86
3	Distribution	9,473.75	-	3,378.78	12,852.53
4	Total	9,473.75	24,785.59	3,378.78	37,638.12

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5.4 COST OF SUPPLY DETERMINATION FOR FY 2018-19

Allocation of Demand related cost for FY 2018-19

Allocation of Demand Related Cost								
Volume of supply	Consumer category	Connected Load (kW)	Demand Factor	Effective Connected Load	% Share in Total Connected Load of Utility	Distribution (Rs. crore)	Retail supply (Rs. crore)	Total (Rs. crore)
220 kV	Industry	46,012	75%	34,509.17	0.23%	0.18	0.50	0.68
	Traction	85,240	100%	85,239.90	0.56%	0.44	1.24	1.67
132 kV	Industrial	3,52,616	75%	2,64,462.36	1.74%	1.94	3.84	5.77
	Bulk	61,623	60%	36,973.94	0.24%	0.27	0.54	0.81
	Traction	12,718	100%	12,718.10	0.08%	0.09	0.18	0.28
66 kV	Industrial	29,55,674	75%	22,16,755.32	14.58%	610.69	32.15	642.85
	Bulk	1,07,137	75%	80,352.70	0.53%	22.14	1.17	23.30
	Commercial	25,671	40%	10,268.47	0.07%	2.83	0.15	2.98
33 kV	Industrial	1,31,645	30%	39,493.51	0.26%	11.23	0.57	11.80
	Domestic	8,688	30%	2,606.46	0.02%	0.74	0.04	0.78
	Bulk	15,525	60%	9,315.07	0.06%	2.65	0.14	2.78
11 kV	Industry LS	33,47,498	60%	20,08,498.84	13.21%	882.56	29.13	911.70
	Domestic	1,24,956	30%	37,486.77	0.25%	16.47	0.54	17.02
	Commercial	6,59,760	30%	1,97,928.01	1.30%	86.97	2.87	89.84
	Bulk	1,62,230	60%	97,337.86	0.64%	42.77	1.41	44.18
LT	Industry SP	10,98,161	40%	4,39,264.48	2.89%	210.97	6.37	217.35
	Industry MS	18,76,306	40%	7,50,522	4.94%	360.47	10.89	371.35
	Domestic (0-100)	67,86,380	30%	20,35,914	13.39%	977.83	29.53	1007.36
	Domestic (101-300)	37,87,701	30%	11,36,310	7.47%	545.76	16.48	562.24
	Domestic (above 300)	18,05,848	30%	5,41,754	3.56%	260.20	7.86	268.06
	Agriculture	1,21,32,066	33%	40,43,617.47	26.60%	1942.10	58.65	2000.76
	Commercial	35,68,354	30%	10,70,506	7.04%	514.15	15.53	529.68
	Public Lighting	55,414	80%	44,331	0.29%	21.29	0.64	21.93
	Bulk	16,365	40%	6,546	0.04%	3.14	0.09	3.24
	Total	3,92,23,590		1,52,02,713		6517.89	220.52	6738.41

Allocation of Energy and Customer related cost for FY 2018-19

Voltage of supply	Consumer category	Sales (MU)	%Losses	Division of losses (ML)	Total Power Purchased (MU)	Share in Net power purchase	Energy and Customer Related Cost (Rs. Crore)	Total (Rs. Crore)
220 kV	Industry	59.29	2.50%	2	61.17	0.10%	28.73	28.73
	Traction	204.46	2.50%	6	210.95	0.36%	99.09	99.09
132 kV	Industrial	401.18	2.50%	13	413.92	0.70%	194.43	194.43
	Bulk	102.34	2.50%	3	105.59	0.18%	49.60	49.60
	Traction	19.56	2.50%	1	20.19	0.03%	9.48	9.48
66 kV	Industrial	6,286.34	4.30%	350	6636.12	11.29%	3117.13	3117.13
	Bulk	193.93	4.30%	11	204.72	0.35%	96.16	96.16
	Commercial	35.13	4.30%	2	37.09	0.06%	17.42	17.42
33 kV	Industrial	102.41	4.30%	6	108.11	0.18%	50.78	50.78
	Domestic	6.65	4.30%	0	7.02	0.01%	3.30	3.30
	Bulk	30.51	4.30%	2	32.20	0.05%	15.13	15.13
11 kV	Industry LS	6,310.05	7.30%	615	6925.40	11.78%	3253.01	3253.01
	Domestic	155.95	7.30%	15	171.16	0.29%	80.40	80.40
	Commercial	881.31	7.30%	86	967.25	1.65%	454.34	454.34
	Bulk	332.19	7.30%	32	364.59	0.62%	171.26	171.26
LT	Industry SP	1,035.80	14.50%	218	1253.33	2.13%	588.72	588.72
	Industry MS	2,463.43	14.50%	517	2980.79	5.07%	1400.14	1400.14
	Domestic (0-100)	8,033.17	14.50%	1687	9720.26	16.54%	4565.82	4565.82
	Domestic (101-300)	4,483.58	14.50%	942	5425.20	9.23%	2548.33	2548.33
	Domestic (above 300)	2,137.62	14.50%	449	2586.55	4.40%	1214.96	1214.96
	Agriculture	13,313.88	14.50%	2796	16109.99	27.41%	7567.22	7567.22
	Commercial	3,435.03	14.50%	721	4156.44	7.07%	1952.37	1952.37
	Public Lighting	195.39	14.50%	41	236.43	0.40%	111.05	111.05
	Bulk	35.50	14.50%	7	42.96	0.07%	20.18	20.18
	Total.		50,255	14.50%	8523	58,777.43		27609.06



5.5 Voltage wise-category wise cost of supply for FY 2018-19

Voltage of Supply	Consumer Category	Cost of Supply (Rs Crore)		Cost of Supply (Rs / kWh)		
		Demand	Energy / Customer	Demand	Energy / Customer	Total
220 kV	Industry	0.68	28.73	0.11	4.85	4.96
	Traction	1.67	99.09	0.08	4.85	4.93
132 kV	Industrial	5.77	194.43	0.14	4.85	4.99
	Bulk	0.81	49.60	0.08	4.85	4.93
	Traction	0.28	9.48	0.14	4.85	4.99
66 kV	Industrial	642.85	3117.13	1.02	4.96	5.98
	Bulk	23.30	96.16	1.20	4.96	6.16
	Commercial	2.98	17.42	0.85	4.96	5.81
33 kV	Industrial	11.80	50.78	1.15	4.96	6.11
	Domestic	0.78	3.30	1.17	4.96	6.13
	Bulk	2.78	15.13	0.91	4.96	5.87
11 kV	Industry LS	911.70	3253.01	1.44	5.16	6.60
	Domestic	17.02	80.40	1.09	5.16	6.25
	Commercial	89.84	454.34	1.02	5.16	6.17
	Bulk	44.18	171.26	1.33	5.16	6.49
LT	Industry SP	217.35	588.72	2.10	5.68	7.78
	Industry MS	371.35	1400.14	1.51	5.68	7.19
	Domestic (0-100)	1007.36	4565.82	1.25	5.68	6.94
	Domestic (101-300)	562.24	2548.33	1.25	5.68	6.94
	Domestic (above 300)	268.06	1214.96	1.25	5.68	6.94
	Agriculture	2000.76	7567.22	1.50	5.68	7.19
	Commercial	529.68	1952.37	1.54	5.68	7.23
	Public Lighting	21.93	111.05	1.12	5.68	6.81
	Bulk	3.24	20.18	0.91	5.68	6.60
Total		6737.70	27609.06			



5.6 COST OF SUPPLY DETERMINATION FOR FY 2018-19 including past revenue gaps

Allocation of Demand-related cost for the Period 2018-19 (With Carrying Cost)

Allocation of Demand Related Cost								
Voltage of supply	Consumer category	Connected Load (kW)	Demand Factor	Effective Connected Load	% Share in Total Connected Load of Utility	Distribution (Rs. Crore)	Retail supply (Rs. Crore)	Total (Rs. Crore)
220 kV	Industry	46,012	75%	34,509.17	0.23%	0.85	0.51	1.36
	Traction	85,240	100%	85,239.90	0.56%	2.10	1.25	3.35
132 kV	Industrial	3,52,616	75%	2,64,462.36	1.74%	9.28	3.89	13.17
	Bulk	61,623	60%	36,973.94	0.24%	1.30	0.54	1.84
	Traction	12,718	100%	12,718.10	0.08%	0.45	0.19	0.63
66 kV	Industrial	29,55,674	75%	22,16,755.32	14.58%	856.13	32.58	888.71
	Bulk	1,07,137	75%	80,352.70	0.53%	31.03	1.18	32.21
	Commercial	25,671	40%	10,268.47	0.07%	3.97	0.15	4.12
33 kV	Industrial	1,31,645	30%	39,493.51	0.26%	15.74	0.58	16.32
	Domestic	8,688	30%	2,606.46	0.02%	1.04	0.04	1.08
	Bulk	15,525	60%	9,315.07	0.06%	3.71	0.14	3.85
11 kV	Industry LS	33,47,498	60%	20,08,498.84	13.21%	1237.27	29.52	1266.78
	Domestic	1,24,956	30%	37,486.77	0.25%	23.09	0.55	23.64
	Commercial	6,59,760	30%	1,97,928.01	1.30%	121.93	2.91	124.84
	Bulk	1,62,230	60%	97,337.86	0.64%	59.96	1.43	61.39
LT	Industry SP	10,98,161	40%	4,39,264.48	2.89%	300.29	6.46	306.74
	Industry MS	18,76,306	40%	7,50,522	4.94%	513.07	11.03	524.10
	Domestic (0-100)	67,86,380	30%	20,35,914	13.39%	1391.78	29.92	1421.70
	Domestic (101-300)	37,87,701	30%	11,36,310	7.47%	776.80	16.70	793.50
	Domestic (above 300)	18,05,848	30%	5,41,754	3.56%	370.35	7.96	378.31
	Agriculture	1,21,32,066	33%	40,43,617.47	26.60%	2764.27	59.42	2823.70
	Commercial	35,68,354	30%	10,70,506	7.04%	731.81	15.73	747.54
	Public Lighting	55,414	80%	44,331	0.29%	30.31	0.65	30.96
	Bulk	16,365	40%	6,546	0.04%	4.47	0.10	4.57
	Total	3,92,23,590		1,52,02,713		9251.00	223.42	9474.42

Allocation of Energy and Customer related cost for FY 2018-19

Voltage of supply	Consumer category	Sales (MU)	Losses	Division of losses (MU)	Total Power Purchased (MU)	% share in Net power purchase	Energy and Customer Related cost (Rs. Crore)	Total (Rs. Crore)
220 kV	Industry	59.29	2.50%	2	61.17	0.10%	29.31	29.31
	Traction	204.46	2.50%	6	210.95	0.36%	101.08	101.08
132 kV	Industrial	401.18	2.50%	13	413.92	0.70%	198.33	198.33
	Bulk	102.34	2.50%	3	105.59	0.18%	50.59	50.59
	Traction	19.56	2.50%	1	20.19	0.03%	9.67	9.67
66 kV	Industrial	6,286.34	4.30%	350	6636.12	11.29%	3179.75	3179.75
	Bulk	193.93	4.30%	11	204.72	0.35%	98.09	98.09
	Commercial	35.13	4.30%	2	37.09	0.06%	17.77	17.77
33 kV	Industrial	102.41	4.30%	6	108.11	0.18%	51.80	51.80
	Domestic	6.65	4.30%	0	7.02	0.01%	3.36	3.36
	Bulk	30.51	4.30%	2	32.20	0.05%	15.43	15.43
11 kV	Industry LS	6,310.05	7.30%	615	6925.40	11.78%	3318.36	3318.36
	Domestic	155.95	7.30%	15	171.16	0.29%	82.01	82.01
	Commercial	881.31	7.30%	86	967.25	1.65%	463.47	463.47
	Bulk	332.19	7.30%	32	364.59	0.62%	174.70	174.70
LT	Industry SP	1,035.80	14.50%	218	1253.33	2.13%	600.55	600.55
	Industry MS	2,463.43	14.50%	517	2980.79	5.07%	1428.27	1428.27
	Domestic (0-100)	8,033.17	14.50%	1687	9720.26	16.54%	4657.54	4657.54
	Domestic (101-300)	4,483.58	14.50%	942	5425.20	9.23%	2599.53	2599.53
	Domestic (above 300)	2,137.62	14.50%	449	2586.55	4.40%	1239.37	1239.37
	Agriculture	13,313.88	14.50%	2796	16109.99	27.41%	7719.24	7719.24
	Commercial	3,435.03	14.50%	721	4156.44	7.07%	1991.59	1991.59
	Public Lighting	195.39	14.50%	41	236.43	0.40%	113.29	113.29
	Bulk	35.50	14.50%	7	42.96	0.07%	20.58	20.58
	Total	50,255	14.50%	8523	58,777.43		28163.70	28163.70



5.7 Voltage wise-category wise cost of supply for FY 2018-19 (With Carrying Cost)

Voltage of supply	Consumer category	Cost of supply (Rs. Crores)		Cost of Supplies / (Rs/W)		
		Demand	Energy / Customer	Demand	Energy / Customer	Total
A	B	C	D	E	F	G (C+E)/D
220 kV	Industry	1.36	29.31	0.23	4.94	5.17
	Traction	3.35	101.08	0.16	4.94	5.11
132 kV	Industrial	13.17	198.33	0.33	4.94	5.27
	Bulk	1.84	50.59	0.18	4.94	5.12
	Traction	0.63	9.67	0.32	4.94	5.27
66 kV	Industrial	888.71	3179.75	1.41	5.06	6.47
	Bulk	32.21	98.09	1.66	5.06	6.72
	Commercial	4.12	17.77	1.17	5.06	6.23
33 kV	Industrial	16.32	51.80	1.59	5.06	6.65
	Domestic	1.08	3.36	1.62	5.06	6.68
	Bulk	3.85	15.43	1.26	5.06	6.32
11 kV	Industry LS	1266.78	3318.36	2.01	5.26	7.27
	Domestic	23.64	82.01	1.52	5.26	6.77
	Commercial	124.84	463.47	1.42	5.26	6.68
	Bulk	61.39	174.70	1.85	5.26	7.11
LT	Industry SP	306.74	600.55	2.96	5.80	8.76
	Industry MS	524.10	1428.27	2.13	5.80	7.93
	Domestic (0-100)	1421.70	4657.54	1.77	5.80	7.57
	Domestic (101-300)	793.50	2599.53	1.77	5.80	7.57
	Domestic (above 300)	378.31	1239.37	1.77	5.80	7.57
	Agriculture	2823.70	7719.24	2.12	5.80	7.92
	Commercial	747.54	1991.59	2.18	5.80	7.97
	Public Lighting	30.96	113.29	1.58	5.80	7.38
	Bulk	4.57	20.58	1.29	5.80	7.09
Total		9474.42	28163.70			



5.8 Summary - COST OF SUPPLY for FY 2018-19

Voltage of Supply	Consumer Category	FY 2017-18 (Tariff Order)	FY 2018-19	FY 2018-19 (Including Past Revenue Gaps)
220 kV	Industry	4.88	4.96	5.17
	Traction	4.82	4.93	5.11
132 kV	Industrial	4.94	4.99	5.27
	Bulk	4.87	4.93	5.12
	Traction	4.90	4.99	5.27
66 kV	Industrial	5.38	5.98	6.47
	Bulk	5.64	6.16	6.72
	Commercial	5.47	5.81	6.23
33 kV	Industrial	5.73	6.11	6.65
	Domestic	6.49	6.13	6.68
	Bulk	4.93	5.87	6.32
11 kV	Industry LS	5.92	6.60	7.27
	Domestic	5.82	6.25	6.77
	Commercial	5.28	6.17	6.68
	Bulk	5.72	6.49	7.11
LT	Industry SP	7.25	7.78	8.76
	Industry MS	6.75	7.19	7.93
	Domestic (0-100)	6.02	6.94	7.57
	Domestic (101-300)	6.02	6.94	7.57
	Domestic (above 300)	6.02	6.94	7.57
	Agriculture	6.07	7.19	7.92
	Commercial	6.54	7.23	7.97
	Public Lighting	6.06	6.81	7.38
	Bulk	5.75	6.60	7.09

SECTION-IV – FORMATS

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Punjab State Power Corporation Limited
Format for Tariff Petition - FY 2018-19

S.No	Title	Reference
3	Maintenance schedule of thermal Power stations	Form 3
4	PSPCL Hydel Stations and Share from BBMB	Form 4
5	Energy balance	Form 5
6	Entitlement from Central Generating Stations	Form 6
7	Power purchase Cost (Allocation/availability/surrender)	Form 7
8	Employee Cost	Form 8
9	Total Number of PSPCL Employees	Form 9
10	Employees Productivity Parameters	Form 10
11	Value of Assets and Depreciation Charges	Form 11
12	Depreciation Charges	Form 12
13	Repair and Maintenance Expenses Insert 13 A for FY 18 n FY 19	Form 13
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PUNJAB STATE POWER CORPORATION LIMITED
 ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
 ENERGY SALES YEAR FY 2016-17 (Provisional)

FORMAT 1-A

Sr. No.	Category of Consumer	No. of Consumers at the End of the Year (Nos.)	Connected Load at the End of the Year (KW)	Maximum Demand (MW)		Energy Sale/Demand (MUs)
				Restrictive	Unrestrictive	
1	Domestic	62,63,117	1,17,21,123			13,080.39
2	Commercial (NRS)	9,71,581	40,88,999			3,801.94
3	Industrial					
(a)	Small Supply	92,631	10,17,466			983.83
(b)	Medium Supply	26,661	14,97,046			2,214.99
(c)	Large Supply	10,327	65,71,755			11,115.19
(d)	Total	1,29,619	90,86,267			14,314.01
4	Street Lighting	3,499	40,849			192.00
5	Bulk Supply	498	3,15,545			661.06
(a)	HT					
(b)	LT					
(c)	Total					
6	Railway Traction	9	1,02,748			183.04
7	Total within State (except AP)	73,68,324	2,53,55,531			32,232.44
8	AP Consumption					
(a)	Metered					157.06
(b)	Un-metered					11,851.92
(c)	Total	12,79,233	1,14,56,927			12,008.98
9	AP-High Technology					
10	Compost Plants/Sold waste management plants for Municipalities/Urban Local Bodies					
11	Total Within State					44,241.42
12	Sales Outside State					109.88
13	Sales to Common Pool Consumers					305.39
14	Sales to Elect.Traders					
15	Sales to Other Distribution Licensees					
16	Theft + SA + Unbilled					
	Total	86,47,556	3,68,12,459			44,656.68



PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR FY 2018-19
ENERGY SALES YEAR FY 2017-18 H1 (Actual) (April 2017 - September 2017)
FORMAT 1-B

Sr. No.	Category of Consumer	No. of Consumers at the End of the Year (Nos.)	Connected Load at the End of the Year (KW)	Maximum Demand (MW)		Energy Sale/Demand (MUs)
				Restricted	Unrestricted	
1	Domestic	64,20,691	1,19,35,313			7,868.45
2	Commercial (NRS)	9,77,770	39,69,531			2,194.93
3	Industrial					
(a)	Small Supply	96,368	10,83,843			527.90
(b)	Medium Supply	28,135	16,50,665			1,132.32
(c)	Large Supply	10,600	67,36,885			6,254.69
(d)	Total	1,35,103	94,71,393			7,914.92
4	Street Lighting	3,538	55,075			94.36
5	Bulk Supply	518	3,61,997			363.26
(a)	HT					
(b)	LT					
(c)	Total					
6	Railway Traction	9	90,868			108.50
7	Total within State (except AP)	75,37,629	2,58,84,176			18,544.42
8	AP Consumption					
(a)	Metered					
(b)	Un-metered					
(c)	Total	13,00,465	1,16,65,448			9,100.88
9	AP-High Technology					
10	Compost Plants/Sold waste management plants for Municipalities/Urban Local Bodies					
11	Total Within State					
12	Sales Outside State					
13	Sales to Common Pool Consumers					
14	Sales to Electricity Traders					
15	Sales to Other Distribution Licensees					
16	Total	88,38,094	3,75,49,624			27,645.31

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PUNJAB STATE POWER CORPORATION LIMITED
**ANNUAL REVENUE REQUIREMENT FOR THE YEAR FY 2018-19
 ENERGY SALES YEAR FY 2017-18 (RE)
 FORMAT 1-C**

Sr. No.	Category of Consumer	No. of Consumers at the End of the Year (Nos.)	Connected Load at the End of the Year (KW)	Maximum Demand (MW)		Energy Sale/Demand (MUs)
				Restricted	Unrestricted	
1	Domestic	66,05,095	1,21,06,472			13,796.31
2	Commercial (NRS)	10,08,803	41,29,889			4,028.39
3	Industrial					
(a)	Small Supply	98,630	10,87,288			1,007.93
(b)	Medium Supply	31,256	18,45,142			2,343.90
(c)	Large Supply	10,706	68,04,254			12,647.99
(d)	Total	1,40,592	97,36,683			15,999.82
4	Street Lighting	3,557	54,865			187.70
5	Bulk Supply					673.87
(a)	HT					
(b)	LT					
(c)	Total	517	3,55,342			
6	Railway Traction	10	97,958			206.55
7	Total within State (except AP)	77,58,574	2,64,81,209			34,892.63
8	AP Consumption					
(a)	Metered					
(b)	Un-metered					
(c)	Total	13,00,465	1,16,65,448			12,355.83
9	AP-High Technology					
10	Compost Plants/Sold waste management plants for Municipalities/Urban Local Bodies					
11	Total Within State	90,59,039	3,81,46,657			47,248.46
12	Sales Outside State					353.88
13	Sales to Common Pool Consumers					308.99
14	Sales to Electricity Traders					
15	Sales to Other Distribution Licensees					
16	Total	90,59,039	3,81,46,657			47,911.33



PUNJAB STATE POWER CORPORATION LIMITED
 ANNUAL REVENUE REQUIREMENT FOR THE YEAR FY 2018-19
 ENERGY SALES YEAR FY 2018-19 (RE)
 FORMAT 1-D

Sr. No.	Category of Consumer	No. of Consumers at the End of the Year (Nos.)	Connected Load at the End of the Year (KW)	Maximum Demand (MW)		Energy Sale/Demand and (MUs)
				Restricted	Unrestricted	
1	Domestic	71,07,929	1,25,13,574			14,816.97
2	Commercial (NRS)	10,97,721	42,53,785			4,351.47
3	Industrial					
(a)	Small Supply	99,616	10,98,161			1,035.80
(b)	Medium Supply	31,784	18,76,306			2,463.43
(c)	Large Supply	10,813	68,72,296			13,187.05
(d)	Total	1,42,213	98,46,763			16,686.29
4	Street Lighting	3,593	55,414			195.39
5	Bulk Supply	547	3,62,880			694.47
(a)	HT					
(b)	LT					
(c)	Total					
6	Railway Traction	10	97,958			224.02
7	Total within State (except AP)	83,52,012	2,71,30,375			36,968.61
8	AP Consumption					
(a)	Metered					
(b)	Un-metered					
(c)	Total	13,52,484	1,21,32,066			13,313.88
9	AP-High Technology					
10	Compost Plants/Sold waste management plants for Municipalities/Urban Local Bodies					
11	Total Within State	97,04,496	3,92,62,441			50,282.49
12	Sales Outside State					126.18
13	Sales to Common Pool Consumers					341.64
14	Sales to Electricity Traders					
15	Sales to Other Distribution Licensees					
16	Total	97,04,496	3,92,62,441			50,750.32



PUNJAB STATE POWER CORPORATION LIMITED
 ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
 TECHNICAL AND COMMERCIAL DETAILS OF THERMAL PLANTS
 GURU NANAK DEV THERMAL PLANT BHATINDA (A)
 FORMAT 2A

Particulars	Unit	FY 2016-17 (Provisional)	FY 2017-18 H1 (Actual)	FY 2017-18 H2 (Estimate)	FY 2017-18 (Revised Estimates)	FY 2018-19 (Revised Estimates)
Installed Capacity	MW	460.00	460.00	460.00	460.00	460.00
PLF	%	17.34	14.91	14.91	-	-
Plant Availability	%	96.98%	99.32%		89.00%	91.00%
Gross Generation	MU	698.66	301.31		301.31	-
Auxiliary Consumption						
(i)	MU	77.98	35.59		-	-
(ii)	%	11.16%	11.81%	11.26%	11.26%	11.26%
Net Generation	MU	620.68	265.72	265.72	-	-
Station Heat Rate	Kcal/kwh	2,755.69	2,522.48	342.31	2,864.79	2,864.79
Specific Oil Consumption	ml/kwh	1.31	3.33	0.50	0.50	0.50
Calorific Value of Oil	Kcal/Litre	9,400.00	9,400.00	9,400.00	9,400.00	9,400.00
Calorific Value of Coal (Weighted Average)	Kcal/Kg	4,241.96	4,151.51	4,265.57	4,265.57	4,265.57
Overall heat content	GCal	1,925,282.03	760,047.72			
Heat from oil	GCal	8,586.34	9,429.80			
Heat from coal	GCal	1,916,695.69	750,617.92			
Total Oil Consumption	KL	913.44	1,003.17			
Coal Transit Loss	%	(0.62)	(0.05)		0.02	0.02
Total Coal Consumption excluding transit loss	Tonnes	451,842.00	180,806.00			
Quantity of PANAM coal	Tonnes					
Quantity of coal other than PANAM coal	Tonnes	451,842.00	180,806.00			
Quantity of coal other than PANAM coal including transit loss	Tonnes	449,040.58	180,715.60			
Total Quantity of coal required	Tonnes	449,040.58	180,715.60			
Price of Coal	Rs./Tonne	4,918.10	5,078.53	4,855.00	4,855.00	4,855.00
Price of Oil	Rs./KL	35,848.59	33,134.10	40,410.00	40,410.00	40,410.00
Total Coal Cost	Rs. Crores	220.84	91.78			
Total Oil Cost	Rs. Crores	3.27	3.32			
Total Fuel Cost	Rs. Crores	224.12	95.10	-	95.10	-
Expenses Capitalized	Rs. Crores	34.90	-		-	
Total Net Fuel Cost	Rs. Crores	189.22	95.10	-	95.10	

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR FY 2018-19
TECHNICAL AND COMMERCIAL DETAILS OF THERMAL PLANTS
GGSSIP ROOPNAGAR (B)
FORMAT 2B

Particulars	Unit	FY 2016-17 (Provisional)	FY 2017-18 H1 (Actuals) April 17 to Sept 17	FY 2017-18 H2 (Estimate) (Oct 17 to March 17)	FY 2017-18 (Revised Estimates)	FY 2018-19 (Revised Estimates)
Installed Capacity	MW	1,260.00	1,260.00	1,260.00	1,260.00	1,260.00
PLF	%	25.15%	25.04%		21.51%	35.98%
Plant Availability	%	93.85%	99.38%		96.96%	91.25%
Gross Generation	MUs	2,776.32	1,385.56	916.55	2,302.11	3,623.47
Auxiliary Consumption						
(i)	MUs	268.21	131.20	77.24	208.34	327.92
(ii)	%	9.66%	9.46%		9.05%	9.05%
Net Generation	MUs	2,508.11	1,254.46	839.31	2,093.77	3,295.55
Station Heat Rate	Kcal/Kwh	2,801.60	2,699.10		2,597.00	2,597.00
Specific Oil Consumption	ml/kwh	1.49	1.92		0.50	0.50
Calorific Value of Oil	Kcal/Litre	9,900.00	9,900.00		9,857.06	9,857.06
Calorific Value of Coal (wt. Avg.)	Kcal/Kg	4,165.00	4,112.00		4,544.86	4,544.86
Overall Heat content	Gcal	77,78,979.06	37,39,766.91		59,78,577.54	94,10,150.41
Heat from oil	Gcal	40,983.83	26,396.53		11,346.01	17,858.38
Heat from coal	Gcal	77,37,995.23	37,13,370.38		59,67,231.53	93,92,292.03
Total Oil Consumption	KL	4,139.78	2,666.32		1,151.05	1,811.73
Coal Transit Loss (Excl Panem) *	%	(0.64)	(0.41)		1.00	1.00
Total domestic Coal Consumption (Excl. Transit Loss)	Tonnes	18,57,862.00	9,03,057.00		13,12,962.67	20,66,574.55
Specific Coal Consumption	Kg/Kwh	0.67	0.65		0.57	0.57
Quantity of Panem Coal	Tonnes	-	-		-	-
Quantity of Imported Coal		-	-		-	-
Qty. of Coal other than Panem Coal (Excl. Transit Loss)	Tonnes	18,57,862.00	9,03,057.00		13,26,092.30	20,87,240.30
Qty. of Coal other than Panem Coal (Incl. Transit Loss)	Tonnes	18,46,047.30	8,99,369.58		13,12,962.67	20,66,574.55
Total Quantity of	Tonnes	18,46,047.30	8,99,369.58		13,12,962.6	20,66,574.55

Particulars	Unit	FY2016-17 (Provisional)	FY2017-18 H1 (Actuals) April 17 to Sept 17	FY2017-18 H2 (Estimate) (Oct 17 to March 17)	FY2017-18 (Revised Estimates)	FY2018-19 (Revised Estimates)
Coal required (Incl. Transit Loss)					7	
Price of Domestic Coal (Incl. Transit Loss)	Rs./Tonne	5,073.19	5,177.84		5,124.72	5,124.72
Price of Coal (Excl. Transit Loss)	Rs./Tonne	5,105.66	5,199.07		5,124.72	5,124.72
Price of Oil	Rs./KL	26,143.17	31,461.01		23,165.07	23,165.07
Total Coal Cost	Rs.Crores	942.53	467.59	212.00	679.59	1,069.65
Total Oil Cost	Rs.Crores	10.82	8.39		2.67	4.20
Total Fuel Cost	Rs.Crores	953.35	475.98	206.27	682.25	1073.85

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PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR FY 2018-19
TECHNICAL AND COMMERCIAL DETAILS OF THERMAL PLANTS

GHTP
FORMAT 2C

Particulars	Unit	FY2016-17 (Provisional)	FY 2017-18 H1 (Actuals)	FY 2017-18 H2 (Estimate)	FY2017-18 (Revised Estimates)	FY2018-19 (Revised Estimates)
Installed Capacity	MW	920.00	920.00	920.00	920.00	920.00
PLF	%	33.95%	41.43%		34.37%	24.20%
Plant Availability	%	99.17%	96.77%		93.92%	95.15%
Generation	MU	2736.30	1673.85	927.41	2601.25	1855.46
Auxiliary Consumption						
(i)	MU	242.72	145.50	88.09	233.59	166.62
(ii)	%	8.87%	8.69%		8.98%	8.98%
Net Generation	MU	2,493.58	1,528.35		2,367.66	1,688.84
Station Heat Rate	Kcal/kwh	2,438.46	2,526.77		2,512.15	2,512.15
Specific Oil Consumption	ml/kwh	1.11	1.18		0.50	0.50
Calorific Value of Oil	Kcal/Litre	9,500.00	9,500.00		9,888.58	9,888.58
Calorific Value of Coal (Weighted Average)	Kcal/Kg	4,054.00	4,052.00		4,277.62	4,277.62
Overall heat	GCal	66,72,346.30	42,29,431.84		65,34,741.44	46,61,184.95
Heat from oil	GCal	28,756.50	18,715.00		12,861.36	9,173.91
Heat from coal	GCal	66,43,589.80	42,10,716.84		65,21,880.09	46,52,011.03
Total Oil Consumption	KL	3,027.00	1,970.00		1,300.63	927.73
Coal Transit Loss (Ex Panam)	%	0.17	(0.68)		0.01	0.01
Coal Consumption (excluding Transit loss)	Tonnes	16,38,774.00	10,39,170.00		15,24,651.58	10,87,523.21
Quantity of PANAM coal	Tonnes	60,950.00				
Quantity of coal other than PANAM coal	Tonnes	15,77,824.00	10,39,170.00		15,24,651.58	10,87,523.21
Quantity of coal other than PANAM coal including transit loss	Tonnes	15,83,385.00	10,40,402.00		15,39,898.09	10,98,398.44
Total Quantity of coal required	Tonnes	16,44,335.00	10,40,402.00		15,39,898.09	10,98,398.44
Price of Domestic Coal	Rs./Tonne	5,383.40	5,226.00		5324.00	5324.00
Price of Oil	Rs./KL	31,332.00	29,945.00		31945.00	31945.00
Total Coal Cost	Rs. Crores	885.21	543.71	276.13	819.84	584.79
Total Oil Cost	Rs. Crores	9.48	5.90		4.15	2.96
Total Fuel Cost	Rs. Crores	894.69	549.61	274.38	824.00	587.75

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PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
MAINTENANCE SCHEDULE OF THERMAL POWER STATIONS
FY 2016-17 (Provisional)
FORMAT 3A

Sr. No.	Plant/Unit	From	To	Days	Type of Mtc.
1	2	3	4	5	6
1	GNDTP				
	Unit I	01.04.2016	27.04.2016	27.00	During FY 2016-17, planned shut down availed with the approval of PC, Patiala. Coal & Vapour burners replaced.
	Unit II	08.05.2016	22.05.2016	15.00	During FY 2016-17, planned shut down availed with the approval of PC, Patiala. Firing Ball angles checked.
	Unit III				
	Unit IV				
	Total			42	
2	GGSSTP				
	Unit-I	-	-	-	-
	Unit-II	-	-	-	-
	Unit-III	-	-	-	-
	Unit-IV	-	-	-	-
	Unit-V	01.10.16	10.11.16	41	Capital Mtc
	Unit-VI	10.11.16	25.12.16	46	Capital Mtc
	Total			87	
3	GHTP				
	Unit I	NIL			
	Unit II	NIL			
	Unit III	NIL			
	Unit IV	NIL			
	Total				

PUNJAB STATE POWER CORPORATION LIMITED



ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
 MAINTENANCE SCHEDULE OF THERMAL POWER STATIONS
 FY 2017-18 H1 (Actual) (April 17 to September 17)
 FORMAT 3B

Sr. No.	Plant/ Unit	From	To	Days	Type of Mtc.
1	2	3	4	5	6
1	GNDTP				
	Unit I	NIL			
	Unit II	NIL			
	Unit III	NIL			
	Unit IV	NIL			
	Total				
2	GGSTP				
	Unit-I	NIL			
	Unit-II	NIL			
	Unit-III	NIL			
	Unit-IV	NIL			
	Unit-V	NIL			
	Unit-VI	NIL			
	Total				
3	GHTP				
	Unit I	1.04.2017 (00:00 hrs)	20.04.2017 (14:56 hrs)	19.62	Annual O/H
	Unit II	NIL			
	Unit III	NIL			
	Unit IV	NIL			
	Total			19.62	



PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
MAINTENANCE SCHEDULE OF THERMAL POWER STATIONS
 FY 2017-18 H2 (Projected) (October 17 to March 18)
 FORMAT 3C

Sr. No.	Plant/Unit	From	To	Days	Type of Mtc.
1	2	3	4	5	6
1	GNDTP				
	Unit I	NIL			
	Unit II	NIL			
	Unit III	NIL			
	Unit IV	NIL			
	Total				
2	GGSSTP				
	Unit-I	-	-	-	-
	Unit-II	-	-	-	-
	Unit-III	15.02.18	26.03.18	40.00	Capital Mtc
	Unit-IV	-	-	-	-
	Unit-V	-	-	-	-
	Unit-VI	-	-	-	-
	Total			40.00	
3	GHTP				
	Unit I	NIL			
	Unit II	NIL			
	Unit III	NIL			
	Unit IV	14.02.2018	30.03.2018	45	Capital HPT/ IPT/LPT/Gen
	Total			45	

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
MAINTENANCE SCHEDULE OF THERMAL POWER STATIONS
FY 2017-18 (Total) (Projected)
FORMAT 3D

Sr. No.	Plant/ Unit	From	To	Days	Type of Mtc.
1	2	3	4	5	6
1	GNDTP				
	Unit I	NIL			
	Unit II	NIL			
	Unit III	NIL			
	Unit IV	NIL			
	Total				
2	GGSTP				
	Unit-I	-	-	-	-
	Unit-II	-	-	-	-
	Unit-III	15.02.18	26.03.18	40.00	Capital Mtc
	Unit-IV	-	-	-	-
	Unit-V	-	-	-	-
	Unit-VI	-	-	-	-
	Total			40.00	
3	GHTP				
	Unit I	1.04.2017 (00:00 hrs)	20.04.2017 (14:56 hrs)	19.62	Annual O/H
	Unit II	NIL			
	Unit III	NL			
	Unit IV	14.02.2018	30.03.2018	45.00	Capital HPT/ IPT/LPT/Gen
	Total			64.62	



PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
MAINTENANCE SCHEDULE OF THERMAL POWER STATIONS
FY 2018-19 (Total) (Projected)
FORMAT 3E

Sr. No.	Plant/ Unit	From	To	Days	Type of Mtc.
1	2	3	4	5	6
1	GNDTP				
	Unit I	NIL			
	Unit II	NIL			
	Unit III	NIL			
	Unit IV	NIL			
	Total				
2	GGSTP				
	Unit-I	-	-	-	-
	Unit-II	11.12.18	14.01.19	35.00	Capital Mtc.
	Unit-III	-	-	-	-
	Unit-IV	01.11.18	05.12.18	35.00	Capital Mtc.
	Unit-V	-	-	-	-
	Unit-VI	25.01.19	10.03.19	45.00	Capital Mtc.
	Total			115.00	
3	GHTP				
	Unit I	NIL			
	Unit II	NIL			
	Unit III	01.10.2018	14.11.2018	45.00	Capital LPT/ Gen
	Unit IV	NIL			
	Total			45.00	

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PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
GENERATION AT PSPCL HYDEL STATIONS AND SHARE FROM BBMB
FORMAT 4

Sr. No.	Particulars	FY 2016-17 (Provisional)	FY 2017-18 H1 (Actuals)	FY 2017-18 H2 (Estimate)	FY 2017-18 (H1 + H2) (Revised Estimates)	FY 2018-19 (Revised Estimates)
A)	OWN GENERATION					
I)	Capacity (MW)					
1	Shanan HEP	110.00	110.00	110.00	110.00	110.00
2	UBDC Hydel Project					
	Stage-I					
	Stage-II					
	Total	91.35	91.35	91.35	91.35	91.35
3	Mukerian Hydel Project					
	MHP Stage-II	207.00	216.00	225.00	225.00	225.00
4	Anandpur Sahib Hydel Project	134.00	134.00	134.00	134.00	134.00
5	Ranjit Sagar Project	600.00	600.00	600.00	600.00	600.00
6	Micro Hydel Projects	5.60	5.60	5.60	5.60	5.60
7	Total	1,147.95	1,156.95	1,165.95	1,165.95	1,165.95
II)	Gross Generation (MU)					
1	Shanan HEP	472.87	412.45	107.00	519.45	519.00
	UBDC Stage 1					
	UBDC Stage 2					
2	UBDC Hydel Project	341.05	261.60	122.00	383.60	350.00
3	Mukerian Hydel Project	1,113.95	501.35	644	1145	1127
	MHP Stage-II					
4	Anandpur Sahib Hydel Project	673.85	419.46	270	689	720
5	Ranjit Sagar Project	1,306.13	1289.94	616	1906	1680
6	Micro Hydel Projects	5.61	3.13	2.50	5.62	5.00
7	Total	3,913.46	2887.73	1761.50	4,649.22	4,401.00
8	Aux Consumption (MU) & Transformation Losses (MU)	31.44	18.81	9.86	28.67	25.77
	Less: Free share from RSD					
9	Net Hydel Generation (MU)	3,882.03	2,868.92	1,751.63	4,620.55	4,375.24

Sr. No.	Particulars	FY 2016-17 (Provisional)	FY 2017-18 H1 (Actuals)	FY 2017-18 H2 (Estimate)	FY 2017-18 (H1 + H2) (Revised Estimates)	FY 2018-19 (Revised Estimates)
B)	Share from BBMB (MU)					
1	Bhakra	2,309.99	1,264.92			
2	Deher	1,270.01	952.53	1,313.11	3,669.59	3,516.08
3	Pong	285.85	139.03			
	Total (GROSS)	3,865.84	2,356.48	1,313.11	3,669.59	3,516.08
	Inter State Transmission Losses	92.77	54.79	46.33	101.12	94.20
	Availability from BBMB Excluding Common Pool Share (NET)	3,773.07	2,301.69	1,266.78	3,568.47	3,421.88
	Common Pool Share BBMB (MU)	305.39	154.78	154.21	308.99	341.64
	Availability from BBMB including Common Pool Share (NET)	4,078.46	2,456.47	1,420.99	3,877.46	3,763.52
	Total Hydel Availability (MU)	7,960.49	5,325.39	3,172.63	8,498.02	8,138.76
D)	Less: Royalty to HP from Shanwan (MU)	(52.92)	(36.45)	(16.47)	(52.92)	(52.92)
E)	Less: Share from RSD to HP (MU)	(56.96)	(55.43)	(26.86)	(82.29)	(73.27)
F)	Net Own Hydro Power (MU)	7,850.61	5,233.52	3,129.29	8,362.81	8,012.58

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
ENERGY BALANCE

Format-5

Sr. No.	Particulars	FY 2016-17 (Provisional)	FY2017-18 (Revised Estimates)	FY2018-19 (Revised Estimates)
A)	ENERGY REQUIREMENT			
1	Energy sales to metered category within the State	32,232.44	34892.63	36968.61
2	Energy sales to AP	12,008.99	12355.83	13313.88
3	Total sales within the State	44,241.43	47248.46	50282.49
4	T&D losses			
i)	%	15.25%	14.75%	14.50%
ii)	MU	7963.48	8174.95	8527.44
	Sub-total	52,204.91	55423.42	58809.93
5	Sales to common pool consumers	305.62	308.99	341.64
6	Sales outside state	466.33	353.88	126.18
	Sale to outside states	356.45	218.68	0.00
	Add: Royalty to HP from Shannan (MLI)	52.92	52.92	52.92
	Add: Share from RSD to HP (MLI)	56.96	82.29	73.27
	Total Energy Requirement	52,976.86	56,086.29	59,277.76
B)	ENERGY AVAILABILITY			
1	Net thermal generation	5622.37	4727.15	4984.38
2	Hydel Generation (own+shared)	3882.03	4620.55	4375.24
	Net power purchase	39381.85	42857.21	46154.61
3	Open Access UI	20.30	3.92	0.00
4	BBMB Share (Including Common Pool)	4071.31	3877.46	3763.52
	Net BBMB Share	3765.69	3568.47	3421.88
	Common Pool	305.62	308.99	341.64
5	Total Energy Availability	52,977.86	56,086.29	59,277.76

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2018-19
ENTITLEMENT FROM CENTRAL GENERATING STATIONS FOR THE YEAR 2017-18 H1 (Actual)
 Format-6

S.N. No.	Station	Capacity	Firm Allocation to PSPCL		Actual Allocation to PSPCL (as per REA)	
		MW	%	MW	MTU	%
1	2	3	4	5	6	7
4.1	NHPC					
	Balraai	180	46.50%	83.70	231.62	46.50%
	Salal	690	26.60%	183.54	677.27	26.60%
	Tanakpur	94	17.93%	16.85	40.05	17.93%
	Chamera-I	540	10.20%	55.08	195.06	10.20%
	Chamera-II	300	10.00%	30.00	150.79	12.78%
	Uri	231	7.86%	18.15	88.18	10.17%
	Uri-II	480	13.75%	66.00	248.83	13.75%
	Dhauliganga	240	8.13%	19.52	91.83	10.45%
	Dalhasti	280	10.00%	28.00	110.24	12.32%
	Parbati-III	390	8.28%	32.29	171.58	10.60%
	Rampur	520	7.86%	40.87	63.22	10.18%
	SEWA-II	412.02	5.62%	23.16	107.10	7.03%
	Total	120	8.33%	10.00	40.52	10.65%
4.2	Nathpa Jhakri (SJVN)				2216.29	
		1500	10.13%	151.95	643.73	11.66%
4.3	Tehri (THDC)	1000	7.70%	77.00	161.31	9.23%
4.4	Koteshwar (THDC)	400	6.36%	25.44	57.09	7.89%
4.5	DVC RTPS 1&2	1200	25.00%	300	315.42	25.00%
	DVC - Durgapur	1000	20.00%	200	595.88	20.00%
4.6	NTPC					
	Singrauli	2000	10.00%	200.00	703.05	11.03%
	Rihand - I	1000	11.00%	110.00	405.38	12.02%
	Rihand - II	1000	10.20%	102.00	362.03	11.32%
	Rihand - III	1000	8.27%	82.67	315.71	9.49%
	Anta (GPS)	419	11.69%	48.98	16.77	14.02%
	Auraiya (GPS)	663	12.52%	83.01	11.15	14.13%
	Dadri (GPS)	830	15.90%	131.97	170.47	16.98%
	Unchahar-I	420	8.57%	35.99	98.31	8.96%
	Unchahar-II	420	14.28%	59.98	176.19	15.51%
	Unchahar-III	210	8.10%	17.01	56.27	9.31%
	Unchahar-IV	500			0.01	1.18%
	Itanagar (IV)	1500			46.77	1.18%
	DADRI-II TPS	980			35.35	1.13%
	Koldam HEP	800	7.73%	61.84	228.37	8.81%
	Total				2625.87	
4.7	NTPC (ER)					
	Farakha (ER)	1600	1.39%	22.24	53.25	1.39%

S.N o.	Station	Capacity	Firm Allocation to PSPCL (as per REA)		Actual Allocation to PSPCL Station	
			MW	%	MW	MU
	Kahal gaon-I(ER)	840	6.07%	50.99	133.73	6.07%
	Kahal gaon-II (ER)	1500	8.02%	120.30	374.57	8.02%
	Total				561.55	
4.8	NPC					
	NAPP	440	11.59%	51.00	211.03	13.84%
	RAPP-B	440	22.73%	100.01	396.94	24.61%
	RAPP-C	440	10.41%	45.80	238.77	14.17%
	Total				846.74	
4.9	Central Sector Purchase (4.1+4.2+4.3+4.4+4.5+4.6+4.7+4.8)				8023.88	
5.1	Purchase through Traders / IPPs (LONG TERM)					
	NVVN(Bundled Power)				191.93	Included in respective NTPC plants
	PTC Tala(Hydro)	1020	2.94%	29.99	71.63	2.94%
	Pragati-III(Bawana)PPCL	1371	10.00%	137.10	135.02	10.00%
	MALANA-2 (PTC)	100	88.00%	88.00	259.08	88.00%
	SASAN UMPP	3960	15.00%	594.00	2134.64	15.00%
	MUNDRA UMPP	4000	12.50%	500.00	1448.74	12.50%
	Goindwal Sahib TPP (GVK)	540	100.00%	540.00	580.59	100.00%
	Talwandi Sabo TPP (TSPL)	1980.00	100.00%	1980.00	3145.03	100.00%
	RAJPURA TPP (NPL)	1400.00	100.00%	1400.00	4193.22	100.00%
	Total Long Term				12159.88	

Note: % Actual Allocation to PSPCL is based on the Cumulative Weighted Avg. Entitlements upto Sep from the REA for Sep 2017

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2018-19
ENTITLEMENT FROM CENTRAL GENERATING STATIONS FOR THE YEAR 2017-18 H2
Format 6 H2 (Projected)

S.No	Station	Capacity	Firm Allocation to		Projected Allocation to	
		MW	%	MW	MU	%
1	2	3	4	5	6	7
4.1	NHPC					
	Bairasiul	180	46.50%	83.70		
	Salal	690	26.60%	183.54	86.03	46.50%
	Tanakpur	94	17.93%	16.85	226.63	26.60%
	Chamera-I	540	10.20%	55.08	29.76	17.93%
	Chamera-II	300	10.00%	30.00	44.98	10.20%
	Chamera-III	231	7.86%	18.15	32.10	10.00%
	Uri	480	13.75%	66.00	18.93	7.86%
	Uri-II	240	8.13%	19.52	136.81	13.75%
	Dhauliganga	280	10.00%	28.00	34.80	8.13%
	Dullastli	390	8.28%	32.29	24.80	10.00%
	Parbati-III	520	7.86%	40.87	58.46	8.28%
	Rampur	412.02	5.62%	23.16	10.45	7.86%
	SEWA-II	120	8.33%	10.00	31.43	5.62%
	Total				14.41	8.33%
					749.60	
4.2	Nathpa Jhakri (SJVNL)	1500	10.13%	151.95		
4.3	Tehri (THDC)	1000	7.70%	77.00	162.37	10.13%
4.4	Koteshwar (THDC)	400	6.36%	25.44	109.67	7.70%
4.5	DVC RTPS 1&2	1200	25.00%	300.00	34.38	6.36%
	DVC -Durgapur	1000	20.00%	200.00	433.96	25.00%
	Bokaro TPS -A (DVC)	500	40.00%	500.00	682.06	20.00%
4.6	NTPC				375.55	40.00%
	Singrauli	2000	10.00%	200.00		
	Rihand - I	1000	11.00%	110.00	752.83	10.00%
	Rihand - II	1000	10.20%	102.00	425.51	11.00%
	Rihand - III	1000	8.27%	82.67	368.48	10.20%
	Anta (GPS)	419	11.69%	48.98	326.73	8.27%
	Auraiya (GPS)	663	12.52%	83.01	198.17	11.69%
	Dadri (GPS)	830	15.90%	131.97	335.84	12.52%
	Unchahar-I	420	8.57%	35.99	533.93	15.90%
	Unchahar-II	420	14.28%	59.98	131.84	8.57%
	Unchahar-III	210	8.10%	17.01	228.86	14.28%
	Unchahar-IV	500			64.91	8.10%
	Jhajjar (IV)	1500			12.17	
	DADRI-II TPS	980			105.54	
	Koldam HEP	800	7.73%	61.84	22.63	
	Meja	660	2.50%	16.5	77.47	7.73%
					17.29	2.50%
	Total				3602.20	

S.No	Station	Capacity MW	Firm Allocation to PSPCL		Projected Allocation to PSPCL	
			%	MW	MU	%
4.7	NTPC(ER)					
	Farakha (ER)	1600	1.39%	22.24	75.41	1.39%
	Kahal gaon -I(ER)	840	6.07%	50.99	168.22	6.07%
	Kahal gaon-II (ER)	1500	8.02%	120.30	475.45	8.02%
	Total				719.08	
4.8	NPC					
	NAPP					
	RAPP-B	440	11.59%	51.00	201.80	11.59%
	RAPP-C	440	22.73%	100.01	373.23	22.73%
	Total	440	10.41%	45.80	122.66	10.41%
4.9	Central Sector Purchase (4.1+4.2+4.3+4.4+4.5+4.6+4.7+4.8)				697.69	
					7566.54	
5.1	Purchase through Traders / IPPs (LONG TERM)					
	Total Bundled Power-(Coal & Solar)		Included in respective NTPC plants		158.99	Included in respective NTPC plants
	PTC Tala(Hydro)	1020	2.94%	29.988	18.94	2.94%
	Pragati-III(Bawana)PPCL	1371	10.00%	137.1	508.62	10.00%
	MALANA-2 (PTC)	100	88.00%	88	176.95	88.00%
	SASAN UMPP	3960	15.00%	594	2355.42	15.00%
	MUNDRA UMPP	4000	12.50%	500	1576.85	12.50%
	Kishan Ganga HEP	330.00	10.00%	33.00	24.10	10.00%
	Goindwal Sahib TPP (GVK)	540	100.00%	540.00	7632.24	100.00%
	Talwandi Sabo TPP (TSPL)	1980	100.00%	1980.00	4725.17	100.00%
	RAJPURA TPP (NPL)	1400	100.00%	1400.00	1792.63	100.00%
	Total Long Term				18969.90	



PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2018-19

ENTITLEMENT FROM CENTRAL GENERATING STATIONS FOR THE YEAR 2017-18 (Projected)

Format 6 FY 2017-18

S.No.	Station	Capacity	Firm Allocation to PSPCL		Projected Allocation to PSPCL	
		MW	%	MW	MU	%
1	2	3	4	5	6	7
4.1	NHPC					
	Bairasiul	180	46.50%	83.70	317.65	46.50%
	SalaI	690	26.60%	183.54	903.91	26.60%
	Tanakpur	94	17.93%	16.85	69.81	17.93%
	Chamera-I	540	10.20%	55.08	240.04	10.20%
	Chamera-II	300	10.00%	30.00	182.89	10.00%
	Uri	231	7.86%	18.15	107.12	7.86%
	Uri-II	480	13.75%	66.00	385.64	13.75%
	Dhauliganga	240	8.13%	19.52	126.63	8.13%
	Dulhasti	280	10.00%	28.00	135.04	10.00%
	Parbati-III	390	8.28%	32.29	230.04	8.28%
	Rampur	520	7.86%	40.87	73.67	7.86%
	SEWA-II	412.02	5.62%	23.16	138.52	5.62%
	Total	120	8.33%	10.00	54.93	8.33%
4.2	Nathpa Jhakri(SJVNL)	1500	10.13%	151.95	2965.89	10.13%
4.3	Tehri(IHDC)	1000	7.70%	77.00	806.10	7.70%
4.4	Koteshwar(IHDC)	400	6.36%	25.44	270.97	6.36%
4.5	DVC RTPS 1&2	1200	25.00%	300.00	749.37	25.00%
	DVC -Durgapur	1000	20.00%	200.00	1277.95	20.00%
	Bokaro TPS -A (DVC)	500	40.00%	500.00	375.55	40.00%
4.6	NTPC					
	Singrauli	2000	10.00%	200.00	1455.87	10.00%
	Rihand - I	1000	11.00%	110.00	830.90	11.00%
	Rihand - II	1000	10.20%	102.00	730.51	10.20%
	Rihand - III	1000	8.27%	82.67	642.44	8.27%
	Anta (GPS)	419	11.69%	48.98	214.94	11.69%
	Auraiya (GPS)	663	12.52%	83.01	346.98	12.52%
	Dadri (GPS)	830	15.90%	131.97	704.41	15.90%
	Unchahar-I	420	8.57%	35.99	230.15	8.57%
	Unchahar-II	420	14.28%	59.98	405.05	14.28%
	Unchahar-III	210	8.10%	17.01	121.18	8.10%
	Unchahar-IV	500			12.21	
	Jhajjar(IV)	1500			152.31	
	DADRI-II TPS	980			57.98	
	Koldam HEP	800	7.73%	61.84	305.84	7.73%
	Meja	660	2.50%	16.5	17.29	2.50%
	Total				6228.07	

S.No.	Station	Capacity MW	Firm Allocation to PSPCL		Projected Allocation to PSPCL	
			%	MW	MU	%
4.7	NTPC(ER)					
	Farakha (ER)	1600	1.39%	22.24	128.67	1.39%
	Kahal gaon -I(ER)	840	6.07%	50.99	301.95	6.07%
	Kahal gaon-II (ER)	1500	8.02%	120.30	850.02	8.02%
	Total					
4.8	NPC				1280.63	
	NAPP	440	11.59%	51.00	412.83	11.59%
	RAPP-B	440	22.73%	100.01	770.17	22.73%
	RAPP-C	440	10.41%	45.80	361.42	10.41%
	Total					
4.9	Central Sector Purchase (4.1+4.2+4.3+4.4+4.5+4.6+4.7+4.8)				1544.42	
					15590.43	
5.1	Purchase through Traders/ IPPs (LONG TERM)					
	Total Bundled Power-(Coal & Solar)		Included in respective NTPC plants		350.92	Included in respective NTPC plants
	PTC Tala(Hydro)	1020	2.94%	29.988	90.58	2.94%
	Pragati-III(Bawana)PPCL	1371	10.00%	137.1	643.64	10.00%
	MALANA-2 (PTC)	100	88.00%	88	436.03	88.00%
	SASAN UMPP	3960	15.00%	594	4490.06	15.00%
	MUNDRA UMPP	4000	12.50%	500	3025.59	12.50%
	Kishan Ganga HEP	330.00	10.00%	33.00	24.10	10.00%
	Goindwal Sahib TPP (GVK)	540	100.00%	540.00	8212.82	100.00%
	Talwandi Sabo TPP (TSPL)	1980	100.00%	1980.00	7870.20	100.00%
	RAJPURA TPP (NPL)	1400	100.00%	1400.00	5985.84	100.00%
	Total Long Term				31129.78	

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2018-19

ENTITLEMENT FROM CENTRAL GENERATING STATIONS FOR THE YEAR 2018-19 (Projected)

Format 6

S.No.	Station	Capacity	Firm Allocation to PSPCL		Projected Allocation to PSPCL	
		MW	%	MW	MU	%
4.1	NHPC					
	Bairasiul	180	46.50%	83.70	245.99	46.50%
	Salal	690	26.60%	183.54	883.12	26.60%
	Tanakpur	94	17.93%	16.85	80.69	17.93%
	Chamera-I	540	10.20%	55.08	237.66	10.20%
	Chamera-II	300	10.00%	30.00	146.00	10.00%
	Chamera-III	231	7.86%	18.15	82.49	7.86%
	Uri	480	13.75%	66.00	387.75	13.75%
	Uri-II	240	8.13%	19.52	91.57	8.13%
	Dhauliganga	280	10.00%	28.00	110.00	10.00%
	Dulhasti	390	8.28%	32.29	180.50	8.28%
	Parbati-III	520	7.86%	40.87	91.41	7.86%
	Rampur	412.02	5.62%	23.16	103.97	5.62%
	SEWA-II	120	8.33%	10.00	43.32	8.33%
	Total				2694.46	
4.2	Nathpa Jhakri(SJVNL)	1500	10.13%	151.95	669.77	10.13%
4.3	Tehri(THDC)	1000	7.70%	77.00	215.28	7.70%
4.4	Koteshwar(THDC)	400	6.36%	25.44	73.45	6.36%
4.5	DVC RTPS 1&2	1200	25.00%	300.00	1991.41	25.00%
	DVC -Durgapur	1000	20.00%	200.00	1326.72	20.00%
	Bokaro TPS -A (DVC)	500	40.00%	500.00	1297.59	40.00%
4.6	NTPC					
	Singrauli	2000	10.00%	200.00	1480.02	10.00%
	Rihand - I	1000	11.00%	110.00	810.75	11.00%
	Rihand - II	1000	10.20%	102.00	773.79	10.20%
	Rihand - III	1000	8.27%	82.67	622.55	8.27%
	Anta (GPS)	419	11.69%	48.98	397.43	11.69%
	Auraiya (GPS)	663	12.52%	83.01	673.52	12.52%
	Dadri (GPS)	830	15.90%	131.97	1070.80	15.90%
	Unchahar-I	420	8.57%	35.99	265.63	8.57%
	Unchahar-II	420	14.28%	59.98	442.59	14.28%
	Unchahar-III	210	8.10%	17.01	130.17	8.10%
	Unchahar-IV	500			24.41	
	Jhajjar(IV)	1500			211.65	
	DADRI-II TPS	980			45.39	
	Koldam HEP	800	7.73%	61.84	431.66	7.73%
	Meja	660	2.50%	16.5	106.96	2.50%
	Total				7487.33	

Sl.No.	Station	Capacity MW	Firm Allocation to PSPCL		Projected Allocation in PSPCL	
			%	MW	MU	%
4.7	NTPC(ER)					
	Farakha (ER)	1600	1.39%	22.24	151.24	1.39%
	Kahal gaon-I(ER)	840	6.07%	50.99	337.36	6.07%
	Kahal gaon-II (ER)	1500	8.02%	120.30	899.13	8.02%
	Total				899.13	8.02%
4.8	NPC				1387.73	
	NAPP					
	RAPP-B	440	11.59%	51.00	388.08	11.59%
	RAPP-C	440	22.73%	100.01	716.22	22.73%
	Total	440	10.41%	45.80	245.99	10.41%
4.9	Central Sector Purchase (4.1+4.2+4.3+4.4+4.5+4.6+4.7+4.8)				1350.29	
					18484.03	
5.1	Purchase through Traders / IPPs (LONG TERM)					
	Total Bundled Power-(Coal & Solar)				356.91	Included in respective NTPC plants
	FTC Tala(Hydro)	1020	2.94%	29.988	94.70	2.94%
	Pragati-III(Bawana)PPCL	1371	10.00%	137.1	1021.00	10.00%
	MALANA-2 (FTC)	100	88.00%	88	354.88	88.00%
	SASAN_UMPP	3960	15.00%	594	4757.20	15.00%
	MUNDRA_UMPP	4000	12.50%	500	3162.36	12.50%
	Tanda Stage-II TPS	1320	10.00%	132	426.67	10.00%
	Parbati-II HEP	800	10.00%	80	24.30	10.00%
	Karcham Wangtoo HEP	1000	20.00%	200.00	916.45	20.00%
	Kishan Ganga HEP	330.00	10.00%	33.00	170.50	10.00%
	Goindwal Sahib TPP (GVK)	540	100.00%	540.00	3590.18	100.00%
	Talwandi Sabo TPP (TSPL)	1980	100.00%	1980.00	15585.61	100.00%
	RAJPURA TPP (NPL)	1400	100.00%	1400.00	9445.02	100.00%
	Total Long Term				39905.77	

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
POWER PURCHASE COST FOR YEAR 2016-17
 Tentative FORMAT-7 FY 2016-17

Sr. No	Source	Gross Purchase (MUs)	External losses (%)	Energy recd. by PSPCL (MU) (3*(34/100))	Total AFC (Rs. Crs.)	PSPCL Allocation as per provisions I REA of March 2017/ Contracted Capacity (%)	VC (Per Unit)	FC (Rs. Crs.) paid by PSPCL	VC (Rs. Crs.)	Other (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)	72.91	2.47	71.11	208.58	13.48	258.13	28.12	18.82	-0.06	46.89
2	Anta (R/F)	0.28	2.47	0.27			458.29		0.13		0.13
3	Anta (L/F)	0.00	2.47	0.00					0.00		0.00
4	Auralya (G/F)	54.85	2.47	53.49	240.54	13.76	328.92	33.09	18.04	0.10	51.24
5	Auralya (R/F)	0.21	2.47	0.20			542.86		0.11		0.11
6	Auralya (L/F)	0.00	2.47	0.00					0.00		0.00
7	Dadri Gas (G/F)	229.87	2.47	224.19	320.14	16.74	278.59	53.58	64.04	-0.06	117.56
8	Dadri Gas (R/F)	0.64	2.47	0.62			523.34		0.33		0.33
9	Dadri Gas (L/F)	0.00	2.47	0.00					0.00		0.00
10	Singrauli	1454.93	2.47	1418.98	827.35	10.63	143.99	87.93	209.50	1.85	299.28
11	Rihand-I	679.97	2.47	663.16	564.28	11.62	161.10	64.34	109.54	1.87	175.75
12	Rihand-II	807.19	2.47	787.24	595.70	10.88	160.03	64.82	129.18	1.28	193.28
13	Rihand-III	643.25	2.47	627.35	1023.55	9.02	158.34	92.37	101.85	0.27	194.48
14	Unchahar-I	141.79	2.47	138.29	233.86	8.81	289.30	20.60	41.02	0.10	61.72
15	Unchahar-II	287.34	2.47	280.24	243.32	15.04	287.80	36.59	82.70	0.02	119.30
16	Unchahar-III	93.33	2.47	91.03	189.98	8.85	287.42	16.80	26.83	-0.02	43.61
17	Farakka (ER)	125.32	2.47	122.23	918.09	1.39	250.52	12.76	31.40	0.29	44.45
18	Kahalgaon-I (ER)	272.91	2.47	266.17	564.79	6.07	239.78	34.28	65.44	0.57	100.29
19	Kahalgaon-II (ER)	771.69	2.47	752.62	1156.72	8.02	229.36	92.77	176.99	-0.62	269.14
20	NCTPS-2C (DADRI II)	4.87	2.47	4.75	1060.31	0.69	310.73	7.35	1.51	-0.06	8.81
21	IGSTPS Jhajjar (NTPC IV)	9.54	2.47	9.31	1770.17	0.91	342.49	16.02	3.27	-1.30	17.99
22	Koldam	269.50	2.47	262.84	1142.41	7.73	213.08	66.56	57.43	0.06	124.04
23	LPS & TDS	-	-	-	-	-	-	-	-	9.79	9.79
II NHPC											
24	Bairasuli	298.02	2.47	290.66	133.55	46.50	98.40	36.58	29.33	1.91	67.82
25	Salal	860.59	2.47	839.33	296.34	26.60	55.20	52.59	47.50	100.82	269.91
26	Tanakpur	49.73	2.47	48.50	116.65	17.93	148.10	12.18	7.36	0.90	20.44
27	Chamera-I	218.53	2.47	213.15	312.43	10.20	103.79	19.72	22.68	2.72	45.12
28	Chamera-II	166.61	2.47	162.50	254.99	12.15	97.80	19.29	16.29	0.98	36.56
29	Uri	375.65	2.47	366.36	356.81	13.75	79.30	31.50	29.79	23.15	84.43
30	Dauli Ganga	109.06	2.47	106.36	295.09	11.79	149.60	18.15	16.31	8.71	43.17

Sr. No.	Source	Gross Purchase (MU's)	External losses (%)	Energy recd. by PSPCL (MU) (3*4/100)	Total AFC (Rs. Crs.)	PSPCL Allocation as per provisions IREA of March 2017/ Contracted Capacity (%)	VC (Rs/Unit)	FC (Rs. Crs.) paid by PSPCL	VC (Rs. Crs.)	Other (Rs. Crs.)	Total (Rs. Crs.) (9+10+11)
31	Dulhasti	222.61	2.47	217.11	935.50	10.07	235.09	56.64	56.79	16.59	130.02
32	Sewa-II	43.85	2.47	42.77	198.90	10.12	216.40	13.35	9.49	0.84	23.68
33	Chamera-III	85.56	2.47	83.45	404.52	9.64	212.30	21.14	18.17	0.02	39.32
34	Uri-II	130.86	2.47	127.63	469.23	9.05	208.19	36.26	27.24	11.33	74.84
35	Parbati-III	65.70	2.47	64.07	330.09	9.65	273.80	14.42	17.99	0.03	32.43
III	NPCL										
36	NAPP	401.82	2.47	392.87	-		257.73	0.00	103.82	0.04	103.86
37	RAPP-3 & 4	738.21	2.47	719.97	-		287.43	0.00	212.18	0.04	212.22
38	RAPP-5 & 6	307.84	2.47	300.23	-		352.95	0.00	108.65	0.02	108.67
IV	OTHER SOURCES (Central Sector)										
39	Nathpa Jhalot HEP (SJVNL)	788.48	2.47	769.00	1656.84	11.51	140.90	124.33	111.10	0.16	235.59
40	Rampur HEP (SJVNL)	127.96	2.47	124.80	521.71	6.46	159.84	25.22	20.45	0.81	46.49
41	Tehri HEP (THDC)	284.13	2.47	277.11	1458.24	7.70	280.72	81.02	79.76	0.07	160.85
42	Koteswar HEP (THDC)	93.14	2.47	90.84	393.33	6.36	190.86	17.92	17.78	0.02	35.72
43	Durgapur TPS (DVC)	1205.31	2.47	1175.52	0.00	20.00	225.56	232.21	271.87	0.88	504.96
44	Raghunathpur (DVC)	426.46	2.47	415.93	1158.68	25.00	221.70	66.65	94.55	0.00	161.19
45	TRADERS (Short Term Power)	2073.67	2.47	2022.43	-		316.98		657.31	0.00	657.31
46	Open Access Chgs. of Traders for short term power									39.50	39.50
V	TRADERS/IPs (Long Term Power)										
47	Tala HEP (FTC)	97.24	2.47	94.84	-		202.58		19.70		19.70
48	Pragati-III Gas Plant Bawana (PFCL)	181.85	2.47	177.36	1083.03	10.00	253.11	102.82	46.03	0.15	148.98
49	Mundra UMPP (CGPL)	3167.59	2.47	3089.31		12.50	131.23	301.27	415.69	0.20	717.16
50	Mallana-II HEP (FTC)	307.65	2.47	300.05	167.83	100.00	283.23	82.42	87.14	24.94	194.50
51	NVVNL Bundled	292.78	2.47	285.55	-		502.27		147.06		147.06

Sr. No.	Source	Gross Purchase (MUs)	External losses (%)	Energy sold by PSPCL (MU) (3-3*4/100)	Total AFC (Rs. Crs.)	PSPCL Allocation as per provisionna IREA of March 2017/ Contracted Capacity (%)	VC (Rs/Unit)	FC (Rs. Crs.) paid by PSPCL	VC (Rs. Crs.)	Others (Rs. Crs.)	Total (Rs. Crs.) (9+10+11)
	Power (NTPC Thermal Power + Solar power)										
52	Sasan UMPP (RPL)	4171.96	2.47	4068.87		15.00	114.96	67.16	479.61	154.57	701.33
53	Talwandi Sabo TPS (Sterlite)	6475.96		6475.96		100.00	276.89	1432.23	1795.15	274.91	2950.46
54	Talwandi Sabo TPS UI	-12.27		-12.27			330.42		-4.05		-4.05
55	NPL Rajpura TPS (L & T)	9014.95		9014.95		100.00	228.72	1490.77	2061.86	32.55	3585.18
56	NPL Rajpura UI	-72.20		-72.20			111.33		-8.04		-8.04
57	GVK	200.51		200.51		100.00	300.61	37.97	60.27		98.24
58	GVK UI	-0.99		-0.99			168.05		-0.17		-0.17
VI	Long Term NRSE Purchase within Punjab										
59	Solar	899.00		899.00			725.03		651.80		651.80
60	Non solar	828.11		828.11			567.89		470.28		470.28
61	Short Term NRSE Purchase within Punjab	0.00		0.00					0.00		0.00
62	Net Banking with HPSEB, UPCL, J & K & thro. Traders	-14.06		-61.03			-2769.70		38.93		38.93
63	Open Access Chgs. of Banking									13.75	13.75
64	UI	-537.73		-537.73			-20.71		11.14	0.00	11.14
65	Reactive Charges								9.31		9.31
VII	Other Charges										
66	IGCIL										
67	NRPC Fee							949.62			949.62
68	BRAS (NTPC) and Injection Charges								0.11		0.11
69	Purchase of RECs for FY 2016-17								-18.55		-18.55
69	Purchase of RECs for FY 2016-17							10.00			10.00
70	Total Power purchase	39995.53		39374.91			234.88	6081.4	9394.2	156.41	15632.06

Sr. No.	Source	Gross Purchase (MU)	External losses (%)	Energy used by PSPCL (MU) (3-13*4/200)	Total AFC (Rs. Crs.)	PSPCL Allocation as per provisions (REA of March 2017)/ Contracted Capacity (%)	VC (Rs/Unit)	FC (Rs. Crs.) paid by PSPCL	VC (Rs. Crs.)	Other (Rs. Crs.)	Total (Rs. Crs.) (9*10+1)
71	Previous Payments made during 2016-17										278.73
72	Grand Total Power purchase (2016-17)	39995.53		39374.91			234.88	6081.4	9394.2	156.41	15910.79

NOTE: The amount of Rs. (-)44.13 Cr. in respect of Net Banking at Sr. No. 62 will be adjusted in the Final Balance Sheet of FY 2016-17.

Net banking data for 2016-17

	Gross Energy (MU)	External losses (%)	Net Energy (Mus)	Amount (Rs. Crs.)	Rate (Rs/Unit)
Banking (Purchase)					
Mittal	222.46	2.47	216.96	70.26	315.83
manikaran	80.77	2.47	78.77	3.23	39.95
HPSEB	455.88	2.47	444.62		0.00
APPCPL	385.18	2.47	378.66	94.62	245.66
JK		2.47	0.00	0.00	
MPPMCL	756.69	2.47	737.99	0.00	0.00
TATA		2.47	0.00	0.00	0.00
provestment		2.47	0.00	0.00	
HPFC		2.47	0.00	0.00	
PTC		2.47	0.00	0.00	
GMR		2.47	0.00	0.00	
Total Banking Purchase	1900.98		1854.01	168.11	88.43
Banking (Sale)					
Mittal	96.77		96.77	77.82	804.24
manikaran	70.50		70.50		0.00
HPSEB	532.23		532.23	27.72	52.08
APPCPL	266.87		266.07		0.00
JK			0.00		
MPPMCL	904.11		904.11		0.00
TATA			0.00		
provestment			0.00		
HPFC			0.00		
PTC	45.36		45.36	23.64	521.22
GMR			0.00		
Total Banking Sale	1915.04		1915.04	129.18	67.46
Banking (NET)					
Mittal	125.70		120.20	-7.56	-60.17
manikaran	10.27		8.27	3.23	314.29
HPSEB	-76.35		-87.61	-27.72	363.03
APPCPL	119.11		109.59	94.62	794.45
JK	0.00		0.00	0.00	
MPPMCL	-147.42		-166.12	0.00	0.00
TATA	0.00		0.00	0.00	
provestment	0.00		0.00	0.00	

	Gross Energy (MUE)	External Losses (%)	Net Energy (Mus)	Amount (Rs. Crs.)	Rate (Rs/Unit)
HPFC	0.00		0.00	0.00	
PTC	-45.36		-45.36	-23.64	521.22
GMR	0.00		0.00	0.00	
Net Energy Total	0.00		0.00	38.98	2769.70



PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
POWER PURCHASE COST FOR YEAR 2017-18 (H1)
FORMAT-7

S. No.	Source	Gross Purchase (MUS)	Export (1%)	Energy Used by PSPCL (MB) (GSP/100)	Total ATC (RS/GS)	PSPCL Allocation as per provisions of PREAMBLE, September 2017 Contractual Capacity (%)	VC (Rs/Unit)	VC (Rs/GS) PAID BY PSPCL	VC (Rs/GS)	Other (Rs/GS)	Total (Rs/GS) (B-10)
1	2	3	4	5	6	7	8	9	10	11	12
I	NTPC										
1	Anta (G/F)	16.71	2.30	16.33	213.75	14.02	242.92	14.98	4.06	0.19	19.23
2	Anta (R/F)	0.04	2.30	0.04			510.30		0.02		0.02
3	Anta (L/F)	0.02	2.30	0.02			871.50		0.02		0.02
4	Auraiya (G/F)	11.08	2.30	10.82	301.58	14.13	305.24	21.30	3.38	3.83	28.51
5	Auraiya (R/F)	0.05	2.30	0.05			612.30		0.03		0.03
6	Auraiya (L/F)	0.02	2.30	0.02			813.00		0.01		0.01
7	Dadri Gas (G/F)	170.10	2.30	166.18	336.30	16.98	286.74	28.56	48.77	0.90	78.23
8	Dadri Gas (R/F)	0.19	2.30	0.18			589.20		0.11		0.11
9	Dadri Gas (L/F)	0.19	2.30	0.18			757.16		0.14		0.14
10	Singrauli	703.05	2.30	686.85	859.17	10.52	143.67	45.70	101.01	0.25	146.95
11	Rihand-I	405.38	2.30	396.05	570.61	11.51	129.90	32.84	52.66	0.66	86.16
12	Rihand-II	362.03	2.30	353.69	595.84	10.76	129.82	31.68	47.00	0.07	78.76
13	Rihand-III	315.71	2.30	308.44	1029.18	8.89	130.64	45.73	41.24	0.06	87.04
14	Unchahar-I	98.31	2.30	96.05	301.96	8.77	292.72	13.24	28.78	1.97	43.98
15	Unchahar-II	176.19	2.30	172.13	280.12	14.90	292.44	20.87	51.53	1.36	73.76
16	Unchahar-III	56.27	2.30	54.97	194.07	8.71	291.54	8.45	16.40	0.14	25.00
17	Unchahar-IV	0.04	2.30	0.03	525.58	0.62	275.00	0.00	0.01	0.00	0.01
18	Farakka (ER)	53.25	2.30	52.03	948.78	1.44	280.23	6.65	14.92	0.88	22.45
19	Kahalgaon-I (ER)	133.73	2.30	130.65	585.80	6.12	247.50	17.94	33.10	0.50	51.54
20	Kahalgaon-II (ER)	374.57	2.30	365.94	1161.97	8.20	238.35	47.63	89.28	0.09	137.00
21	NCTPS- 2C (DADRI II)	35.35	2.30	34.54	1013.45	0.57	297.84	2.87	10.53	-0.02	13.37
22	IGSTPS Jhajjar (NTPC JV)	46.77	2.30	45.70	1747.67	1.17	303.28	9.59	14.19	-0.23	23.55
23	Koldam	228.37	2.30	223.11	1142.41	9.28	217.10	33.73	49.58	0.02	83.33
24	LPS & TDS	-	-	-	-	-	-	-	-	0.84	0.84
II	NHPC										
25	Bairasuil	231.62	2.30	226.29	130.75	46.50	96.30	18.11	22.31	0.07	40.48
26	Salal	677.27	2.30	661.67	312.86	26.60	58.30	38.21	39.49	76.42	154.12
27	Tanakpur	40.05	2.30	39.12	123.56	17.93	156.80	8.40	6.28	0.01	14.69
28	Chamera-I	195.06	2.30	190.56	321.08	10.20	108.01	10.44	21.07	0.01	31.52

Sl. No.	Source	Gross Purchases (MUS)	Payment (Cost) (%)	Energy sold by PSPCL (MUD) (331/100)	Total A/C (Rs. Cr.)	PSPCL Allocation as per Provisional ICR for September 2017 (Contracted Capacity) (%)	VC (Rs./MUM)	TC (Rs. Cr.) paid by PSPCL	AVC (Rs. Cr.)	Others (Rs. Cr.)	Total (Rs. Cr.) (331/100)
29	Chamera-II	150.79	2.30	147.31	258.59	14.01	99.10	10.68	14.94	0.03	25.65
30	Uri	248.83	2.30	243.10	363.60	13.75	80.80	19.41	20.11	11.40	50.91
31	Dauli Ganga	110.24	2.30	107.70	298.21	13.34	151.10	11.73	16.66	0.02	28.41
32	Dulhasti	171.58	2.30	167.63	923.83	11.62	278.60	31.32	47.80	8.56	87.69
33	Sewa-II	40.52	2.30	39.59	198.90	11.67	216.40	7.36	8.77	0.77	16.89
34	Chamera-III	88.18	2.30	86.15	404.52	11.20	212.30	13.88	18.72	0.01	32.61
35	Uri-II	91.83	2.30	89.71	466.47	11.47	241.50	24.92	22.18	7.95	55.04
36	Parbati-III	63.22	2.30	61.76	330.09	11.20	273.80	10.73	17.31	0.02	28.05
III	NPCIL										
37	NAPP	211.03	2.30	206.17	-		258.32		54.51	0.00	54.51
38	RAPP-3 & 4	396.94	2.30	387.80	-		288.20		114.40	0.08	114.48
39	RAPP-5 & 6	238.77	2.30	233.26	-		353.71		84.45	0.13	84.58
IV	OTHER SOURCES (Central Sector)										
40	Nathpa Jhakri HEP (SJVNL)	643.73	2.30	628.90	1368.83	14.02	119.10	50.91	76.67	0.06	127.64
41	Rampur HEP (SJVNL)	107.10	2.30	104.63	521.71	8.79	161.30	13.29	17.27	0.01	30.58
42	Tehri HEP (THDC)	161.31	2.30	157.59	1313.29	9.90	270.00	31.41	43.55	0.03	75.00
43	Koteshwar HEP (THDC)	57.09	2.30	55.77	393.33	8.56	195.50	10.17	11.16	0.01	21.34
44	Durgapur TPS (DVC)	595.88	2.30	582.15	1132.67	20.00	209.31	105.05	124.73	0.00	229.78
45	Raghunathpur (DVC)	315.42	2.30	308.15	1158.68	25.00	241.49	46.86	76.17	0.00	123.03
46	Bokaro (DVC)										
47	TRADERS (Short Term Power)	3532.69	2.30	3451.31	-		332.72		1175.38		1175.38
48	Open Access Chgs. of Traders for short term power	-	-	-	-		-	-	-	58.09	58.09
V	TRADERS/IPPs (Long Term Power)										
49	Tala HEP (PTC)	71.63	2.30	69.98	-		216.00	-	15.47		15.47
50	Pragati-III Gas Plant Bawana (PPCL)	135.02	2.30	131.91	1083.03	10.00	268.60	50.62	36.27	0.05	86.94
51	Mundra	1448.74	2.30	1415.37		12.50	137.51	137.90	199.22	0.12	337.24

S. No.	Source	Gross Purchase (MWh)	External Losses (%)	Energy received by PSPCL (MWh) (52/100)	Total AFC (Rs Crs)	ESRC Allocation to provisions (RREA or September 2017) Contracted Capacity (MW)	VC (Rs/Unit)	FC (Rs Crs) Paid by PSPCL	VC (Rs Crs)	Other (Rs Crs)	Total (Rs Crs) (52/100)
	UMPP (CGPL)										
52	Mallana-II HEP (PTC)	259.08	2.30	253.11	165.93	100.00	273.07	51.83	70.75	6.22	128.80
53	NVVNL Bundled Power (NTPC Thermal Power + Solar power)	154.55	2.30	150.99	-		485.64		75.06		75.06
54	Sasan UMPP (RFL)	2134.64	2.30	2085.46		15.00	114.96	33.48	245.40	55.98	334.86
55	Talwandi Sabo TPS (Sterlite)	3105.22		3105.22		100.00	283.53	520.90	880.43		1401.33
56	TSPL UI	39.81		39.81			180.79		7.20		7.20
57	NPL Rajpura TPS (L & T)	4221.82		4221.82		100.00	228.23	685.59	963.55	22.90	1672.03
58	NPL UI	-28.60		-28.60			148.75		-4.25		-4.25
59	GVK	580.96		580.96		100.00	305.70	143.33	177.60	113.38	207.55
60	GVK UI	-0.37		-0.37			1600.72		-0.60		-0.60
VI	Short Term NRSE Purchase within Punjab										
61	Solar	757.31		757.31	-		674.71		510.96		510.96
62	Non solar	362.41		362.41	-		567.01		205.49		205.49
63	Short Term NRSE Purchase within Punjab			0.00	-				0.00		0.00
64	Net Banking with HPSEB, UPCL, J & K & thro. Traders	1707.33		1666.81	-		365.00		623.18		623.18
65	Open Access Chgs. of Banking			0.00	-					6.14	6.14
66	UI	-63.45		-63.45	-		-799.77		50.75		50.75
67	Reactive Charges			0.00	-				1.57		1.57
VII	Other Charges										
68	PGCIL				-			744.79			744.79
69	Patran Transmission Company									11.36	11.36



Sr. No.	Source	Gross Purchase (MUs)	Exchange Rate (Rs/Usd)	Energy used by PSPCL (MUs) (31/03/2018)	Total A/c (Rs Crs)	PSPCL Allocation as per provision of para 2 of the agreement dated 20/09/2017 (Contracted Capacity) (MUs)	VC (Rs/Unit)	FC (Rs Crs) paid by PSPCL	VC (Rs Crs)	Others (Rs Crs)	Total (Rs Crs) (31/03/2018)
70	NRPC Fee									0.07	0.07
71	RRAS (NTPC) and Injection Charges									-24.45	-24.45
72	Purchase of RECs for FY 2017-18										0.00
73	Total Power purchase	26442.67	1.53	26039.08	-		258.63	3213.07	6698.73	140.19	10051.99
74	Previous Payments made during 2017-18										-301.48
75	Grand Total Power purchase (2017-18)	26442.6	1.53	26039.08	-		258.63	3213.0	6698.7	140.19	9750.51

Net banking data for 2017-18 (H1)

	Gross Energy (MUs)	External (Rs Crs)	Net Energy (MUs)	Amount (Rs Crs)	Rate (Rs/Unit)
Banking (Purchase)					
HPSEB (PURCHASE)	28.79	2.30	28.13	10.51	365.00
J&K (PURCHASE)	0.00	2.30	0.00	0.00	
HPSEBL (PURCHASE)	73.25	2.30	71.57	26.74	365.00
RPPC (PURCHASE)	0.00	2.30	0.00	0.00	
JSW (PURCHASE)	0.00	2.30	0.00	0.00	
APPCL (PURCHASE)	104.11	2.30	101.71	38.00	365.00
TATA ENERGY (PURCHASE)	0.00	2.30	0.00	0.00	
PTC (PURCHASE)	0.00	2.30	0.00	0.00	
MITTAL (PURCHASE)	174.42	2.30	170.41	63.66	365.00
GMR (PURCHASE)	0.00	2.30	0.00	0.00	
SRI CEMENT LTD. (PURCHASE)	0.00	2.30	0.00	0.00	
UPCL (PURCHASE)	732.70	2.30	715.82	267.44	365.00
MPPCL (PURCHASE)	0.00	2.30	0.00	0.00	
MPPMCL (PURCHASE)	521.84	2.30	509.82	190.47	365.00
MANIKARAN (PURCHASE)	123.66	2.30	120.81	45.14	365.00
Total Banking Purchase	1750.79		1716.61	640.96	365.00
Banking (Sale)					
HPSEB (SALE)	0		0.00	0.00	
J&K (SALE)	0		0.00	0.00	
HPSEBL (SALE)	-51.46		-51.46	-18.78	365.00
RPPC (SALE)	0		0.00	0.00	
JSW (SALE)	0		0.00	0.00	
APPCL (SALE)	0		0.00	0.00	
TATA ENERGY (SALE)	0		0.00	0.00	

	Gross Energy (MUs)	External Losses (%)	Net Energy (MUs)	Amount (Rs Cr.)	Rate (Rs/Unit)
PTC (SALE)	0		0.00	0.00	
MITTAL (SALE)	0		0.00	0.00	
GMR(SALE)	0		0.00	0.00	
SRI CEMENT LTD.(SALE)	0		0.00	0.00	
UPCL (SALE)	0		0.00	0.00	
MPPPTCL (SALE)	0		0.00	0.00	
MPPMCL (SALE)	0		0.00	0.00	
MANIKARAN (SALE)	0		0.00	0.00	
Total Banking Sale	512.6		512.6	187.28	365.00
Banking (NET)					
HPSEB	28.79		28.13	10.51	365.00
J&K	0.00		0.00	0.00	
HPSEBL	21.80		20.11	7.96	365.00
RPPC	0.00		0.00	0.00	
JSW	0.00		0.00	0.00	
APPCL	104.11		101.71	38.00	365.00
TATA ENERGY	0.00		0.00	0.00	
PTC	0.00		0.00	0.00	
MITTAL	174.42		170.41	63.66	365.00
GMR	0.00		0.00	0.00	
SRI CEMENT LTD.	0.00		0.00	0.00	
UPCL	732.70		715.82	267.44	365.00
MPPPTCL	0.00		0.00	0.00	
MPPMCL	521.84		509.82	190.47	365.00
MANIKARAN	123.66		120.81	45.14	365.00
Net Banking Total	1707.99		1668.81	622.88	365.00



PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
POWER PURCHASE COST FOR YEAR FY 2017-18 (H2)
FORMAT-7 2017-18 (H2) (With Surrender)

Sr. No.	Source	Gross Purchase (MUs)	Volume Loss (%)	Energy recd. by PSPCL (MU) (3/4/10)	Total A/R (Cr)	PSPCL Allocation A/R (provisional APRAR September 2017) contracted Capacity (%)	VC (Rs/Unit)	FC (Rs/Cr)	VC (Rs/Cr)	Other (Rs/Cr)	Total (Rs/Cr)
1	2	3	4	5	6	7	8	9	10	11	12
I	NTPC										
1	Anta (G/F)	59.45	2.99	57.68	213.75	14.02	268.40	14.98	15.96		30.93
2	Anta (R/F)	0.00	2.99	0.00			871.50		0.00		0.00
3	Anta (L/F)	0.00	2.99	0.00			510.30		0.00		0.00
4	Auraiya (G/F)	100.75	2.99	97.74	301.58	14.13	230.50	21.30	23.22		44.53
5	Auraiya (R/F)	0.00	2.99	0.00			813.00		0.00		0.00
6	Auraiya (L/F)	0.00	2.99	0.00			612.30		0.00		0.00
7	Dadri Gas (G/F)	0.00	2.99	0.00	336.30	16.98	385.80	28.56	0.00		28.56
8	Dadri Gas (R/F)	0.00	2.99	0.00			757.60		0.00		0.00
9	Dadri Gas (L/F)	0.00	2.99	0.00			589.20		0.00		0.00
10	Singrauli	752.83	2.99	730.35	869.17	10.52	148.20	45.70	111.57		157.27
11	Rihand-I	425.51	2.99	412.81	570.61	11.51	125.70	32.84	53.49		86.33
12	Rihand-II	368.48	2.99	357.48	595.84	10.76	125.20	31.68	46.13		77.82
13	Rihand-III	326.73	2.99	316.97	1029.18	8.89	126.50	45.73	41.33		87.06
14	Unchahar-I	0.00	2.99	0.00	301.96	8.77	297.20	13.24	0.00		13.24
15	Unchahar-II	0.00	2.99	0.00	280.12	14.90	297.20	20.87	0.00		20.87
16	Unchahar-III	0.00	2.99	0.00	194.07	8.71	297.20	8.45	0.00		8.45
17	Unchahar-IV	2.07	2.99	2.01	525.58	0.62	275.00	0.805	0.57		0.57
18	Farakka (ER)	12.85	2.99	12.46	948.78	1.44	271.10	6.65	3.48		10.13
19	Kahalgaon-I (ER)	168.22	2.99	163.20	585.80	6.12	235.60	17.94	39.63		57.57
20	Kahalgaon-II (ER)	475.45	2.99	461.25	1161.97	8.20	225.20	47.63	107.07		154.70
21	NCTPS- 2C (DADRI II)	0.00	2.99	0.00	1013.45	0.57	318.00	2.87	0.00		2.87
22	IGSTPS Jhajjar (NTPC IV)	0.00	2.99	0.00	1747.67	1.17	312.40	9.59	0.00		9.59
23	Meja#1 2*660 MW	0.00	2.99	0.00			297.20	2.46	0.00		2.46
24	Koldam (Hydro)	77.47	2.99	75.16	1142.41	9.28	217.10	33.73	16.82		50.55
25	LPS & TDS	-	-	-	-	-	-	-	-		0.00
II	NHPC										
26	Bairasuil	86.03	2.99	83.46	130.75	46.50	96.30	18.11	8.28		26.39
27	Salal	226.63	2.99	219.87	312.86	26.60	58.30	38.21	13.21	25.52	76.95
28	Tanakpur	29.76	2.99	28.88	123.56	17.93	156.80	8.40	4.67		13.07



S. No.	Source	Gross Purchase (MU)	Internal Losses (%)	Energy recd. by PSPCL (MU) (374/101)	Total AFC (Rs. Cr.)	PSPCL Allocation as per provision (Rs. Cr.) (2017-2018) contracted Capacity (%)	VC (Rs./Unit)	TC (Rs. Cr.) paid by PSPCL	VC (Rs. Cr.)	Other (Rs. Cr.)	Total (Rs. Cr.) (2018-19)
29	Chamera-I	44.98	2.99	43.64	321.08	10.20	90.00	10.44	4.05		14.49
30	Chamera-II	32.10	2.99	31.14	258.59	14.01	99.10	10.68	3.18		13.86
31	Uri	136.81	2.99	132.73	363.60	13.75	80.80	19.41	11.05	6.24	36.70
32	Dauli Ganga	24.80	2.99	24.06	298.21	13.34	151.10	11.73	3.75		15.48
33	Dulhasti	58.46	2.99	56.71	923.83	11.62	278.60	31.32	16.29	2.91	50.52
34	Sewa-II	14.41	2.99	13.98	198.90	11.67	216.40	7.36	3.12	0.27	10.75
35	Chamera-III	18.93	2.99	18.37	404.52	11.20	212.30	13.88	4.02		17.90
36	Uri-II	34.80	2.99	33.77	466.47	11.47	241.50	24.92	8.41	3.01	36.33
37	Parbati-III	10.45	2.99	10.14	330.09	11.20	273.80	10.73	2.86		13.59
38	Kishan Ganga HEP	24.10	2.99	23.38			328.31	3.66	7.91		11.58
III	NFCIL										
39	NAPP	201.80	2.99	195.78	-		258.33		52.13		52.13
40	RAPP-3 & 4	373.23	2.99	362.08	-		288.22		107.57		107.57
41	RAPP-5 & 6	122.66	2.99	119.00	-		353.72		43.39		43.39
IV	OTHER SOURCES (Central Sector)										
42	Nathpa Jhakri HEP (SJVN)	162.37	2.99	157.52	1368.83	14.02	119.10	50.91	19.34		70.24
43	Rampur HEP (SJVN)	31.43	2.99	30.49	521.71	8.79	161.30	13.29	5.07		18.36
44	Tehri HEP (THDC)	109.67	2.99	106.39	1313.29	9.90	270.00	31.41	29.61		61.02
45	Koteshwar HEP (THDC)	34.38	2.99	33.35	393.33	8.56	195.50	10.17	6.72		16.89
46	Durgapur TPS (DVC)	682.06	2.99	661.70	1132.67	20.00	206.60	105.05	140.91		245.97
47	Raghunathpur (DVC)	73.91	2.99	71.70	1135.30	25.00	270.80	46.86	20.01		66.87
48	Bokaro (DVC)	375.55	2.99	364.34		40.00	195.00	63.29	73.23		136.52
49	TRADERS (Short Term Power)		2.99	0.00	-				0.00		0.00
50	Open Access Chgs. of Traders for short term power	-	-	-	-	-	-	-	-		0.00
V	TRADERS/TPPs (Long Term Power)										
51	Tala HEP (PTC)	18.94	2.99	18.38	-	2.94	216.00	-	4.09		4.09
52	Pragati-III Gas Plant	0.00	2.99	0.00	1083.03	10.00	299.72	50.62	0.00		50.62



Sl. No.	Source	Gross Purchase (MWe)	External Base (%)	Energy sold by PSPCL (MWh) (624/1000)	Total AIC (Rs. Cr.)	PSPCL Allocation 44 per provision (IIT) for September 2017/ Contracted Capacity (0)	Vc (Rs/Lm) (0)	Vc (Rs. Cr.) paid by PSPCL	Vc (Rs. Cr.)	Other (Rs. Cr.)	Total (Rs. Cr.) (610/1000)
	Bawana (PFCL)										
53	Mundra UMPP (CGFL)	1576.85	2.99	1529.77		12.50	145.78	137.90	229.87		367.77
54	Mallana-II HEP (ITC)	176.95	2.99	171.67	165.93	100.00	272.29	51.83	48.18		100.01
55	NVVNL Bundled Power (NTPC Thermal Power + Solar power)	158.99	2.99	154.24	-		485.64		77.21		77.21
56	Sasan UMPP (RPL)	2355.42	2.99	2285.10		15.00	114.97	33.48	270.79		304.27
57	Talwandi Sabo TPS (Sterlite)	4152.76		4152.76		100.00	270.19	520.90	1122.02		1642.92
58	TSPL UI								0.00		0.00
59	NPL Rajpura TPS (L & T)	4725.17		4725.17		100.00	205.00	685.59	968.66		1654.25
60	NPL UI								0.00		0.00
61	GVK	177.02		177.02		100.00	293.00	345.26	51.87		397.13
62	GVK UI								0.00		0.00
VI	Long Term NRSE Purchase within Punjab										
63	Solar	556.35		556.35	-		674.71		375.38		375.38
64	Non solar	514.26		514.26	-		567.01		291.59		291.59
65	Short Term NRSE Purchase within Punjab			0.00	-				0.00		0.00
66	Net Banking with HPSEB, UPCL, J & K & thro. Traders	-2975.28		-2975.28	-		365.00		1085.98		-1085.98
67	Open Access Chgs. of Banking				-						0.00
68	UI				-						0.00
69	Reactive Charges				-						0.00
VII	Other Charges										
70	PGCIL				-			744.79			744.79
71	Patran										0.00



Sl. No.	Source	Gross Purchase (MU's)	External Losses (%)	Energy recd. by PSPCL (MU) (347,000)	Total AFC (Rs. Crs.)	PSPCL Allocation as per provisions IREDA of September 2017/ Contracted Capacity (%)	VC (Rs/Unit)	TC (Rs. Crs.) paid by PSPCL	VC (Rs. Crs.)	Other (Rs. Crs.)	Total (Rs. Crs.) (9310-1)
	Transmission Company										
72	NRFC Fee										0.00
73	RRAS (NTPC) and Injection Charges										0.00
74	Purchase of RECs for FY 2017-18				-			326.96			326.96
75	Total Power purchase	17116.5	1.74	16819.02	-		200.96	3811.3	3401.7	37.94	7251.07
76	Previous Payments made during 2017-18										
77	Grand Total Power purchase (2017-18)	17116.56	1.74	16819.02	-		200.96	3811.3	3401.7	37.94	7251.07

Net banking data for 2017-18 (H2)

	Gross Energy (MU's)	External Losses (%)	Net Energy (MU's)	Amount (Rs. Crs.)	Rate (Rs./Unit)
HPSEB (PURCHASE)			0.00		
J&K (PURCHASE)			0.00		
HPSEBL (PURCHASE)			0.00		
RPPC (PURCHASE)			0.00		
JSW (PURCHASE)			0.00		
APPCL (PURCHASE)			0.00		
TATA ENERGY (PURCHASE)			0.00		
PTC (PURCHASE)			0.00		
MITTAL (PURCHASE)			0.00		
GMR (PURCHASE)			0.00		
SRI CEMENT LTD.(PURCHASE)			0.00		
UPCL (PURCHASE)			0.00		
MPPTCL (PURCHASE)			0.00		
MPPMCL (PURCHASE)			0.00		
MANIKARAN (PURCHASE)			0.00		
Total Banking Purchase	0.00	2.99%	0.00	0.00	
Banking (Sale)					
HPSEB (SALE)			0.00		
J&K (SALE)			0.00		
HPSEBL (SALE)			0.00		
RPPC (SALE)			0.00		
JSW (SALE)			0.00		
APPCL (SALE)			0.00		
TATA ENERGY (SALE)			0.00		
PTC (SALE)			0.00		

	Gross energy (MUs)	External Losses (%)	Net Energy (MUs)	Amount (Rs. Crs.)	Rate (Rs/Unit)
MITTAL (SALE)			0.00		
GMR(SALE)			0.00		
SRI CEMENT LTD.(SALE)			0.00		
UPCL (SALE)			0.00		
MPTCL (SALE)			0.00		
MPPMCL (SALE)			0.00		
MANIKARAN (SALE)			0.00		
Total Banking Sale	297.28		297.28	1085.98	365.00
Banking (NET)					
HPSEB (SALE)	0.00		0.00	0.00	
J&K (SALE)	0.00		0.00	0.00	
HPSEBL (SALE)	0.00		0.00	0.00	
RPPC (SALE)	0.00		0.00	0.00	
JSW (SALE)	0.00		0.00	0.00	
APPCPL (SALE)	0.00		0.00	0.00	
TATA ENERGY (SALE)	0.00		0.00	0.00	
PTC (SALE)	0.00		0.00	0.00	
MITTAL (SALE)	0.00		0.00	0.00	
GMR(SALE)	0.00		0.00	0.00	
SRI CEMENT LTD.(SALE)	0.00		0.00	0.00	
UPCL (SALE)	0.00		0.00	0.00	
MPTCL (SALE)	0.00		0.00	0.00	
MPPMCL (SALE)	0.00		0.00	0.00	
Net Banking (Net)	0.00		0.00	0.00	



PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
POWER PURCHASE COST FOR YEAR FY 2017-18 (H1+H2)
FORMAT-7 2017-18 (H1+H2) (With Surrender)

Sl. No.	Source	Gross Tariff (MUS)	External Losses (%)	Energy used by PSPCL (MUD) (3300000000)	Total AFC (Rs. Cr.)	PSPCL Allocation as per provisions IRE of September 2017/ Contracted Capacity (%)	VC (Rs/CWh)	VC (Rs/CWh) paid by PSPCL	VC (Rs/CWh)	Other (Rs/CWh)	Total (Rs/CWh)
1	2	3	4	5	6	7	8	9	10	11	12
I	NTPC										
1	Anta (G/F)	76.16		74.00	213.75	14.02	262.81	29.96	20.02	0.19	50.16
2	Anta (R/F)	0.04		0.04			510.30	0.00	0.02	0.00	0.02
3	Anta (L/F)	0.02		0.02			871.50	0.00	0.02	0.00	0.02
4	Auraiya (G/F)	111.83		108.56	301.58	14.13	237.90	42.60	26.60	3.83	73.04
5	Auraiya (R/F)	0.05		0.05			612.30	0.00	0.03	0.00	0.03
6	Auraiya (L/F)	0.02		0.02			813.00	0.00	0.01	0.00	0.01
7	Dadri Gas (G/F)	170.10		166.18	336.30	16.98	286.74	57.11	48.77	0.90	106.79
8	Dadri Gas (R/F)	0.19		0.18			589.20	0.00	0.11	0.00	0.11
9	Dadri Gas (L/F)	0.19		0.18			757.16	0.00	0.14	0.00	0.14
10	Singrauli	1455.87		1417.20	869.17	10.52	146.01	91.39	212.57	0.25	304.22
11	Rihand-I	830.90		808.86	570.61	11.51	127.75	65.68	106.14	0.66	172.49
12	Rihand-II	730.51		711.17	595.84	10.76	127.49	63.37	93.13	0.07	156.57
13	Rihand-III	642.44		625.41	1029.18	8.89	128.54	91.46	82.58	0.06	174.10
14	Unchahar-I	28.31		26.05	301.96	8.77	292.72	26.47	28.78	1.97	57.22
15	Unchahar-II	176.19		172.13	280.12	14.90	292.44	41.74	51.53	1.36	94.62
16	Unchahar-III	56.27		54.97	194.07	8.71	291.54	16.90	16.40	0.14	33.45
17	Unchahar-IV	2.11		2.05	525.58	0.62	275.00	0.01	0.58	0.00	0.59
18	Farakka (ER)	66.10		64.49	948.78	1.44	278.46	13.30	18.41	0.88	32.59
19	Kahalgaoon-I (ER)	301.95		293.84	585.80	6.12	240.87	35.88	72.73	0.50	109.11
20	Kahalgaoon-II (ER)	850.02		827.19	1161.97	8.20	231.00	95.26	196.35	0.09	291.70
21	NCYPS- 2C (DADRI II)	35.35		34.54	1013.45	0.57	297.84	5.74	10.53	-0.02	16.24
22	IGSTPS Jhajjar (NTPC JV)	46.77		45.70	1747.67	1.17	303.28	19.18	14.19	-0.23	33.14
23	Meja#1 2*660 MW	0.00		0.00				2.46	0.00	0.00	2.46
24	Koldam (hydro)	305.84		298.27	1142.41	9.28	217.10	67.47	66.40	0.02	133.88
25	LPS & TDS	-	-	-	-	-	-	-	-	0.84	0.84
II	NHPC										
26	Bairasul	317.65		309.74	130.75	46.50	96.30	36.21	30.59	0.07	66.87
27	Salal	903.91		881.54	312.86	26.60	58.30	76.42	52.70	101.95	231.06
28	Tanakpur	69.81		68.00	123.56	17.93	156.80	16.81	10.95	0.01	27.77
29	Chamera-I	240.04		234.20	321.08	10.20	104.64	20.88	25.12	0.01	46.01
30	Chamera-II	182.89		178.46	258.59	14.01	99.10	21.36	18.12	0.03	39.51
31	Uri	385.64		375.82	363.60	13.75	80.80	38.81	31.16	17.63	87.60

Sr. No.	Source	Gross Purchase (MUD)	External Losses (%)	Energy recd by PSPCL (MUD) (377/100)	Cost A/C (Rs. Crs)	PSPCL Allocation of provisions (PRA) of September 2017 Contracted (Rs. Crs)	VC (Rs./Unit)	TC (Rs. Cr) paid by PSPCL	VC (Rs. Cr)	Other (Rs. Cr)	Total (Rs. Cr)
32	Dauli Ganga	135.04		131.76	298.21	13.34	151.10	23.46	20.41	0.02	43.89
33	Dulhasti	230.04		224.34	923.83	11.62	278.60	62.65	64.09	11.46	138.20
34	Sewa-II	54.93		53.57	198.90	11.67	216.40	14.71	11.89	1.04	27.64
35	Chamera-III	107.12		104.52	404.52	11.20	212.30	27.75	22.74	0.01	50.50
36	Uri-II	126.63		123.48	466.47	11.47	241.50	49.83	30.58	10.96	91.37
37	Parbati-III	73.67		71.91	330.09	11.20	273.80	21.46	20.17	0.02	41.65
38	Kishan Ganga HEP	24.10		23.38			328.31	3.66	7.91	0.00	11.58
III	NPCIL										
39	NAFP	412.83		401.94	-		258.33	0.00	106.65	0.00	106.65
40	RAPP-3 & 4	770.17		749.88	-		288.21	0.00	221.97	0.08	222.05
41	RAPP-5 & 6	361.42		352.26	-		353.71	0.00	127.84	0.13	127.97
IV	OTHER SOURCES (Central Sector)										
42	Nathpa Jhakri HEP (SJVNL)	806.10		786.42	1368.83	14.02	119.10	101.81	96.01	0.06	197.88
43	Rampur HEP (SJVNL)	138.52		135.12	521.71	8.79	161.30	26.59	22.34	0.01	48.94
44	Tehri HEP (THDC)	270.97		263.98	1313.29	9.90	270.00	62.83	73.16	0.03	136.02
45	Koteshwer HEP (THDC)	91.47		89.13	393.33	8.56	195.50	20.33	17.88	0.01	38.23
46	Durgapur TPS (DVC)	1277.95		1243.86	1132.67	20.00	207.87	210.10	265.64	0.00	475.74
47	Raghunathpur (DVC)	389.32		379.85	1135.30	25.00	247.06	93.72	96.18	0.00	189.90
48	Bokaro (DVC)	375.55		364.34		40.00	195.00	63.29	73.23	0.00	136.52
49	TRADERS (Short Term Power)	3532.69		3451.31	-		332.72		1175.38	0.00	1175.38
50	Open Access Chgs. of Traders for short term power	-	-	-	-	-	-	-	-	58.09	58.09
V	TRADERS/IPs (Long Term Power)										
51	Tala HEP (PTC)	90.58		88.36	-	2.94	216.00		19.56	0.00	19.56
52	Pragati-III Gas Plant Bawana (FPCL)	135.02		131.91	1083.03	10.00	268.60	101.24	36.27	0.05	137.56
53	Mundra UMPP (CGPL)	3025.59		2945.14		12.50	141.82	275.80	429.09	0.12	705.02



Sl. No.	Source	Gross Purchases (MUR)	External Sources (%)	Energy Credit by PSPCL (MUR) (34/100)	Total AFC (Rs. Crs)	PSPCL Allocation & Provisional REA of September 2017/ Contracted Capacity (%)	VC (Rs/CuM)	TC (Rs. Crs) Paid by PSPCL	VC (Rs. Crs)	Other (Rs. Crs)	Total (Rs. Crs) (34/100)
54	Mallana-II HEP (PTC)	436.03		424.78	165.93	100.00	272.76	103.67	118.93	6.22	228.81
55	NVVNL Bundled Power (NTPC Thermal Power + Solar power)	313.54		305.23	-		485.64		152.27		152.27
56	Sasan UMPP (RPL)	4490.06		4370.56		15.00	114.96	66.96	516.20	55.98	639.13
57	Talwandi Sabo TPS (Sterlite)	7257.97		7257.97		100.00	275.90	1041.80	2002.45	0.00	3044.25
58	TSPL UI	39.81		39.81			180.79		7.20		7.20
59	NPL Rajpura TPS (L & T)	8946.98		8946.98		100.00	215.96	1371.17	1932.21	22.90	3326.27
60	NPL UI	-28.60		-28.60			148.75		-4.25		-4.25
61	GVK	757.98		757.98		100.00	302.73	488.59	229.47	-	604.68
62	GVK UI	-0.37		-0.37			1600.72		-0.60	113.38	-0.60
VI	Short Term NRSE Purchase within Punjab										
63	Solar	1313.67		1313.67	-		674.71		886.34		886.34
64	Non solar	876.67		876.67	-		567.01		497.08		497.08
65	Short Term NRSE Purchase within Punjab	0.00		0.00	-				0.00		0.00
66	Net Banking with HPSEB, UPCL, J & K & thro. Traders	-1267.95		-1308.47	-		365.00		462.80		-462.80
67	Open Access Chgs. of Banking	0.00		0.00	-				0.00	6.14	6.14
68	UI	-63.45		-63.45	-		-799.77		50.75		50.75
69	Reactive Charges	0.00		0.00	-				1.57		1.57
VII	Other Charges										
70	PGCIL				-			1489.5			1489.59
71	Patran Transmission Company									11.36	11.36
72	NRPC Fee									0.07	0.07
73	RRAS (NTPC) and Injection									-24.45	-24.45



Sl. No.	Source	Gross Purchase (MUs)	Export Losses (%)	Energy (GGS) PSPCL (MUs) (SAYAN)	Total ARC (Rs Cr)	PSPCL Allocation as per provisional ITPA of September 2017/ Contracted Capacity (%)	VC (Rs/Unit)	VC (Rs Cr) paid by PSPCL	VC (Rs Cr)	Other (Rs Cr)	Total (Rs Cr) (SAYAN)
	Charges										
74	Purchase of RECs for FY 2017-18				-			326.96	0.00	0.00	326.96
75	Total Power purchase	43559.23	1.61	42858.09	-		235.97	7024.4	10100.4	178.13	17303.06
76	Previous Payments made during 2017-18				-						-301.48
77	Grand Total Power purchase (2017-18)	43559.23	1.61	42858.09	-		235.97	7024.4	10100.4	178.13	17001.58

Net banking data for 2017-18 (H1+H2)

	(MUs)	Export Losses (%)	Net Energy (MUs)	Amount (Rs Cr)	Rate (Rs/Unit)
Banking Purchase	1758.79		1718.27		
Total Banking Purchase	1758.79		1718.27	641.96	365.00
Banking Sale	-3026.74		-3026.74		
Total Banking Sale	-3026.74	0	-3026.74	-1104.76	365.00
Net Banking (Import-Export)	-1267.95		-1308.47		
Net Banking	-1267.95		-1308.47	-462.80	365.00



PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
POWER PURCHASE COST FOR YEAR FY 2018-19
FORMAT-7(FY 2018-19)
POWER PURCHASE COST FOR YEAR 2018-19

S. No.	Source	Power Purchase (MU)	Energy Cost (₹)	Supply Cost by PSPCL (MU)	Avg. Price (₹/CU)	PSPCL Annual Requirement (MU)	Power (MU)	Price (₹/CU)	Power (MU)	Price (₹/CU)	Power (MU)	Total (₹/CU)
1	2	3	4	5	6	7	8	9	10	11	12	
NTPC												
1	Anta (G/F)	89.30	2.93	95.40	218.35	13.73	268.40	29.97	26.65			56.63
2	Anta (R/F)	0.00	2.93	0.00			871.50		0.00			0.00
3	Anta (L/F)	0.00	2.93	0.00			510.30		0.00			0.00
4	Auraiya (G/F)	168.29	2.93	163.36	309.10	13.93	230.50	43.05	38.79			81.84
5	Auraiya (R/F)	0.00	2.93	0.00			853.00		0.00			0.00
6	Auraiya (L/F)	0.00	2.93	0.00			612.30		0.00			0.00
7	Dadri Gas (G/F)	0.00	2.93	0.00	350.88	16.85	385.80	59.12	0.00			59.12
8	Dadri Gas (R/F)	0.00	2.93	0.00			757.60		0.00			0.00
9	Dadri Gas (L/F)	0.00	2.93	0.00			589.20		0.00			0.00
10	Singrauli	1480.02	2.93	1436.71	911.74	10.89	148.20	98.49	219.34			317.83
11	Rihand-I	810.75	2.93	787.03	589.19	11.80	125.70	69.50	101.91			171.42
12	Rihand-II	773.79	2.93	751.15	499.44	11.07	125.20	55.28	96.88			152.16
13	Rihand-III	622.55	2.93	604.33	1021.98	9.23	126.50	84.36	78.75			173.11
14	Unchahar-I	82.25	2.93	79.84	312.04	8.88	287.20	27.70	24.44			52.14
15	Unchahar-II	153.41	2.93	148.92	288.33	15.25	297.20	43.96	45.59			89.55
16	Unchahar-III	43.51	2.93	42.24	194.12	8.05	297.20	17.57	12.93			30.50
17	Unchahar-IV	8.09	2.93	7.86	525.58	0.62	275.00	3.65	2.23			5.88
18	Farakka (ER)	50.55	2.93	49.07	830.04	1.40	271.10	12.99	13.70			26.69
19	Kahalgaoon-I (ER)	280.98	2.93	272.76	608.35	6.08	235.60	36.85	66.20			103.04
20	Kahalgaoon-II (ER)	739.78	2.93	718.13	1155.82	5.35	225.20	61.80	166.60			228.40
21	NCTPS-2C (DADRI II)	15.17	2.93	14.73	1002.46	0.89	318.00	6.65	4.82			11.48
22	IGSTPS Jhajjar (NTPC JV)	70.74	2.93	68.67	1723.29	1.03	312.40	34.95	22.10			57.05
23	Meja#1 2*600 MW	35.75	2.93	34.70			297.20	15.19	10.53			25.82
24	Koldam-I (Hydro)	431.86	2.93	419.03	1142.41	8.66	217.10	58.68	93.71			152.39
NRPC												
25	Bairasuli	245.99	2.93	238.79	138.25	46.50	101.82	37.13	25.05			62.18
26	Salal	883.12	2.93	857.26	330.62	26.60	61.57	57.94	54.37	98.46		211.77
27	Tanakpur	80.69	2.93	78.32	129.62	17.93	164.51	13.51	13.27			26.78
28	Chamera-I	237.66	2.93	230.70	330.30	10.20	114.11	20.60	27.12			47.72
29	Chamera-II	146.00	2.93	141.73	262.05	12.44	100.47	19.77	14.67			34.44
30	Uri	387.75	2.93	376.40	369.92	13.75	82.22	33.69	31.88	17.67		83.25
31	Dauli Ganga	110.03	2.93	106.78	239.76	12.03	121.51	13.24	13.37			26.61
32	Dulhasti	180.50	2.93	175.22	911.62	10.31	274.84	56.64	49.63	8.97		115.24
33	Sewa-II	43.32	2.93	42.05	198.90	10.36	216.42	13.61	9.37	0.81		23.80
34	Chamera-III	82.48	2.93	80.07	484.52	9.89	212.34	24.13	17.52			41.65
35	Uri-II	81.57	2.93	88.88	458.45	8.45	237.31	31.44	21.73	7.91		61.88
36	Parbati-III	91.41	2.93	88.74	330.09	9.91	273.75	12.05	25.02			37.08
37	Kishan Ganga HEP	170.50	2.93	165.51			328.31	25.92	55.98			81.90
NEEL												
38	NAPP	388.08	2.93	376.72	-	-	258.33	-	100.25			100.25
39	RAPP-3 & 4	716.22	2.93	695.26	-	-	288.22	-	206.43			206.43
40	RAPP-5 & 6	245.99	2.93	238.79	-	-	353.72	-	87.01			87.01
OTHER SOURCES (Central Sector)												
41	Nathpa Jhakri HEP	669.77	2.93	650.17	1385.66	11.74	121.39	106.73	81.30			188.04

S.No.	Source	Gross Purchase (M)	Export (M)	Energy read by PSPCL (M)	APR (Rs Crs)	PSPCL Revenue (Rs Crs) as per share (%)	VC (Rs Crs)	FC (Rs Crs)	VC (Rs Crs)	Other Charges (Rs Crs)	Total (Rs Crs)
(SJVNL)											
42	Rampur HEP (SJVNL)	103.97	2.93	100.93	521.71	6.67	161.26	22.23	16.77		38.99
43	Tehri HEP (THDC)	215.28	2.93	208.98	1286.57	7.90	264.94	49.92	57.04		106.95
44	Koteshwar HEP (THDC)	73.45	2.93	71.30	393.33	6.75	195.48	17.78	14.36		32.14
45	Durgapur TPS (DVC)	1247.93	2.93	1211.41	1104.17	20.00	206.60	220.63	257.82		478.66
46	Raghunathpur (DVC)	665.62	2.93	646.14	1135.30	25.00	270.80	283.63	180.25		464.07
47	Bokaro TPS -A (DVC)	1297.59	2.93	1259.82			195.00	218.68	253.03		471.71
TRADERS (Short Term Power)											
48	Open Access Chgs. of Traders for short term power			0.00				0.00	0.00		0.00
TRADERS/PP (Long Term Power)											
49	Tala HEP (PTC)	94.70	2.93	91.92		2.94	216.00	-	20.45		20.45
50	Pragati-III Gas Plant Bawana (PPCL)	341.26	2.93	331.28	1083.03	10.00	289.72	111.09	102.28		213.38
51	Mundra UMP (CGPL)	3162.36	2.93	3069.81		12.50	145.78	282.08	461.01		743.09
52	Mallana-II HEP (PTC)	354.88	2.93	344.49	165.83	100.00	272.29	62.10	96.63		178.73
53	NVNL Bundled Power (NTPC Thermal Power + Solar power)	356.91	2.93	346.47			485.64	-	173.33		173.33
54	Sasan UMPP (RPL)	4757.20	2.93	4617.98		15.00	114.97	80.97	546.91		627.88
55	Taiwandi Sabo TPS (Sterlite)	8519.71		8519.71		100.00	270.19	1822.43	2301.82		4124.35
56	NPL Rajpura TPS (L & T)	9445.02		9445.02		100.00	205.00	1256.75	1936.23		3192.98
57	GVK Goindwal Sahib	1196.73		1196.73		100.00	293.00	691.47	350.64		1042.11
58	Karcham Wangtoo HEP (PTC)	916.45	2.93	889.63	1252.34	20.00	174.34	73.67	159.77		233.44
59	Tanda Stage-II TPS 2*660 = 1320 MW	0.00	2.93	0.00			335.48	79.35	0.00		79.35
60	Parbati-II HEP 800 MW	24.30	2.93	23.59			287.49	1.38	6.99		8.36
Long Term NRSE Purchase within Punjab											
	solar	1408.91		1408.91			674.71		950.60		950.60
	non solar	1401.34		1401.34			567.01		794.57		794.57
62	Short Term NRSE Purchase within Punjab			0.00					0.00		0.00
63	Net Banking with HPSEB, UPCL, J & K & thro. Traders	662.40		643.02			365.00		241.78		241.78
64	Open Access Chgs. of Banking			0.00					0.00	19.28	19.28
65	UI			0.00					0.00		0.00
66	Reactive Charges			0.00					0.00		0.00
Other Charges											
67	PGCIL							1564.0			1564.07
68	Purchase of RECs for FY 2018-19							89.62			89.62
69	Total Power purchase (2018-19)	46883.66		46154.61			229.97	8184.	1078.	154.1	49120.3



Net banking data for 2018-19

	Gross Energy (Mus)	External losses (%)	Net Energy (Mus)	Amount (Rs. Crs.)	Rate (Ps/Unit)
Banking (IMPORT)	662.4	2.93	643.02		
Total Banking import	662.4		643.02	241.78	365.00
Banking (EXPORT)	0.00		0.00		
Total Banking export	0.000	0	0.00	0	360
Net Banking (Import-Export)	662.40		643.02		
Net Banking Total	662.40		643.02	241.78	365.00



PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
EMPLOYEE COST (Cr.)
FORMAT 8

Sr. No.	Particulars	FY 2016-17 (Provisional)	FY 2017-18 H1 (Actuals)	FY 2017-18 H2 (Estimate)	FY 2017-18 (Revised Estimates)	FY 2018-19 (Revised Estimates)
1	2	3	4	5	6	7
1	Salaries & Allowances					
2	Basic Pay	1,004.43	495.45	733.28	1,228.73	1,241.34
3	Overtime	14.07	10.00	7.79	17.79	18.68
4	Dearness Allowance	1,159.06	604.76	998.51	1,603.27	1,721.87
5	Fixed medical Allowance	22.34	10.20	20.92	31.12	29.28
6	Conveyance Allowance	30.38	14.25	19.23	33.48	33.82
7	Other Allowances	146.09	71.75	90.25	162.00	163.66
8	Bonus/ Generation Incentive	12.94	2.20	14.60	16.80	17.64
9	Medical Expenses Reimbursement	20.78	9.38	11.75	21.13	22.31
10	Total (1 to 9)	2,410.09	1,217.99	1,896.32	3,114.31	3,248.60
11	Terminal Benefits					
12	Earned Leave Encashment	167.66	103.85	47.69	151.54	144.36
13	Gratuity (including arrear)	271.84	73.88	171.90	245.78	234.89
14	Commutation of Pension/ progressive funding for terminal benefit as per FRP	-	-	-	-	-
15	Workman's compensation	0.35	0.05	0.21	0.26	0.26
16	Arrear of Pay	-	-	-	-	-
17	Ex-gratia	-	-	-	-	-
18	Fringe Benefit Tax	-	-	-	-	-
19	Progressive Funding of Terminal Benefits as per FRP	-	-	-	-	-
20	Total (8 to 14)	439.85	177.78	219.80	397.58	379.51
21	Pension Payments					
22	Basic Pension					
23	Dearness pension	1,455.66	988.93	171.90	1,711.53	1,802.26
24	Dearness Allowance					
25	Any other expense	145.71	51.79	112.35	164.14	179.74
26	Total	1,601.37	1,040.72	834.95	1,875.67	1,982.00
27	Total Expenses	4,451.31	2,436.49	2,951.07	5,387.56	5,610.12
28	Less: Amount capitalised	139.44	2.79	128.78	131.57	137.01

Sr No	Particulars	FY 2016-17 (Provisional)	FY 2017-18 H1 (Actuals)	FY 2017-18 H2 (Estimate)	FY 2017-18 (Revised Estimates)	FY 2018-19 (Revised Estimates)
29	Net amount	4,311.87	2,433.70	2,822.28	5,255.98	5,473.11
30	Prior Period*	3.84	0.05	(0.05)	-	-
31	Add: BBMB share	237.26	139.38	118.85	258.23	271.14
32	Net Employee's Cost	4,552.97	2,573.13	2,941.08	5,514.21	5,744.25

Note: -

Impact of 7th Pay Commission has not been considered and same shall be trued up as per actuals.

Impact of FRP progressive funding has also not considered as matter is pending before APTEL.

PUNJAB STATE POWER CORPORATION LIMITED
 ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
 TOTAL NUMBER OF PSPCL EMPLOYEES

FORMAT 9

Sr. No.	Particulars	FY 2016-17 (Provisional)	FY 2017-18 (Revised Estimates)	FY 2018-19 (Revised Estimates)
1	2	6	9	12
1	Number of employees with PSPCL as on 1st April	39157	38618	40443
2	Number of employees posted with BBMB as on 1st April	381	400	420
3	PSPCL employees on deputation/ foreign service as on 1st April	14	18	20
4	Total number of employees (1+2+3)	39552	39036	40003
5	Number of employees retired/retiring during the year	3146	2879	
6	Number of employee added during the year	2630	3846	
6	Number of employees at the end of the year (4-5)	39036	40003	
7	Number/share of employees required to be posted with BBMB as per agreement	1565	1565	1565

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PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
EMPLOYEES PRODUCTIVITY PARAMETER
FORMAT 10

Sl. No.	Particulars	FY 2016-17 (Provisional)	FY 2017-18 H1 (Actuals)	FY 2017-18 (Revised Estimates)	FY 2018-19 (Revised Estimates)
1	2	3	4	6	7
1	Number of Consumers in million	8.98	9.14	9.27	9.70
2	Connected Load in KW	34302540	34927418	35799600	37252010
3	Line Circuit in KM	404458	414673	414673	414673
4	Energy Sold in MU	44,656.68	27,645.31	47,911.33	50,750.32
5	No. of Employees	39036	40003	40003	40003
6	Employee per MU of energy sold	0.87	1.45	0.83	0.79
7	Employee per 1000 Consumers	4.35	4.37	4.31	4.13
8	Share of Employee in total cost	NA	NA	NA	NA
9	Employee Cost in Rs/kWh of energy sold	NA	NA	NA	NA
10	Line Circuit KM per Employee	10.36	10.37	10.37	10.37
	NA : Not Available				

PUNJAB STATE POWER CORPORATION LIMITED
 ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
 VALUES OF ASSETS AND DEPRECIATION CHARGES

FORMAT 11

Rs. In Crores

Sl. No.	Particulars	Asset values at the beginning of the year	Rate of Depreciation	Depreciation Charges	Accumulated Depreciation
1	2	3	4	5	6
A	Thermal				
1	Land and Land Rights				
2	Buildings				
3	Hydraulic Works				
4	Other Civil Works				
5	Plant and Machinery				
6	Lines Cable and Network				
7	Vehicles				
8	Furniture and Fixtures				
9	Office Equipments				
	Total				
B	Hydel				
1	Land and Land Rights				
2	Buildings				
3	Hydraulic Works				
4	Other Civil Works				
5	Plant and Machinery				
6	Lines Cable and Network		NIL		
7	Vehicles				
8	Furniture and Fixtures				
9	Office Equipments				
C	Internal Combination				
1	Land and Land Rights				
2	Buildings				
3	Hydraulic Works				
4	Other Civil Works				
5	Plant and Machinery				
6	Lines Cable and Network				
7	Vehicles				
8	Furniture and Fixtures				
9	Office Equipments				
	Total				

A

Sr. No.	Particulars	Asset values at the beginning of the year	Rate of Depreciation	Depreciation Charges	Accumulated Depreciation
D	Transmission				
1	Land and Land Rights				
2	Buildings				
3	Hydraulic Works				
4	Other Civil Works				
5	Plant and Machinery				
6	Lines Cable and Network				
7	Vehicles				
8	Furniture and Fixtures				
9	Office Equipments				
	Total				
E	Distribution				
1	Land and Land Rights				
2	Buildings				
3	Hydraulic Works				
4	Other Civil Works				
5	Plant and Machinery				
6	Lines Cable and Network				
7	Vehicles				
8	Furniture and Fixtures				
9	Office Equipments				
	Total				
	Grand Total (A+B+C+D+E)				

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 UP TO THE YEAR FY 2018-19

DEPRECIATION CHARGES

FORMAT 12

(Rs in Crore)

Sr. No.	Item	Asset on 01/04/2015	Depreciation FY 2015-16	Asset on 01/04/2016	Depreciation FY 2016-17	Asset on 01/04/2017 (H)	(Actual)
1	Thermal	12618.21	216.01	12738.68	210.17	12827.27	
2	Hydel	10927.70	228.28	10980.94	308.42	11346.05	
3	Internal Combustion	-	-	-	-	-	
4	Total Generation	23,545.91	444.29	23,719.62	518.59	24,173.32	
6	Distribution	19285.31	595.06	21121.82	638.73	24,046.80	
7	Others	1610.89	24.42	1614.31	55.16	1272.24	
8	Total	44,442.11	1,063.77	46,455.75	1,212.48	49,492.36	
9	Less: Revalued amount of Land/Depreciation on Revalued amount	-	-	-	-	-	
10	Total after revaluation	-	-	-	-	-	
11	<i>Add: Prior Period*</i>	-	-	-	-	-	
12	Total	44,442.11	1,063.77	46,455.75	1,212.48	49,492.36	
13	<i>Less: Capitalization</i>	-	-	-	-	-	
14	Net Total	44,442.11	1,063.77	46,455.75	1,212.48	49,492.36	

Format 12 A
 Depreciation Charges

Sr. No.	Item	FY 2017-18	FY 2018-19
	Generation		
1	Opening GFA	24,173.33	24,448.26
2	Closing GFA	24,448.26	24,751.15
3	Depreciation	608.34	614.23
	Distribution		
1	Opening GFA	25,319.03	26,623.95
2	Closing GFA	26,623.95	28,106.22
3	Depreciation	988.96	1,038.55

PUNJAB STATE POWER CORPORATION LIMITED
 ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
 REPAIRS AND MAINTENANCE EXPENSES (Cr.)
 FORMAT 13

Sr. No.	Particulars	FY 2016-17 (Provisional)	FY 2017-18 H1 (Actuals)
1	Plant & machinery	233.04	58.03
2	Building	16.81	5.77
3	Hydraulic works & civil works	12.48	5.84
4	Line cable & network	60.63	16.49
5	Vehicles	1.12	0.32
6	Furniture & fixtures	0.03	0.01
7	Office equipments	0.58	0.51
8	Operating expenses	16.98	9.03
9	Total	341.67	96.00
10	Add: BBMB share	43.87	18.56
11	Total Expenses	385.54	114.56
12	Less: R&M Expenses Capitalized	0.78	0.05
13	Net expenses	384.76	114.51
14	Add prior period*	0.07	0.00
15	R & M for asset addition during year	-	-
16	Less: Royalty charges payable to GOP	-	-
17	Total Expenses charged to Revenue	384.83	114.51

Notes :-

- 1 Expenditure of BBMB For FY2016-17 has been taken as similar to actual payment during H1 and nil amount has been considered for H2 in view of Tariff Order 2016-17
- 2 Normal 9% increase has been projected for FY 2016-17 over expense of FY2015-16.

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
ADMINISTRATION AND GENERAL EXPENSES (Cr.)
FORMAT 14

Sr. No.	Particulars	FY 2016-17 (Provisional)	FY 2017-18 HI (Actuals)
1	Rent Rates & taxes	6.78	2.82
2	Insurance	0.61	0.42
3	Telephone, postage & Telegram	5.20	2.17
4	Consultancy Fee	0.42	0.05
5	Technical Fee	0.01	0.03
6	Other Professional Charges	0.38	0.29
7	Conveyance & Travelling	35.39	16.04
8	Electricity & Water	16.46	8.03
9	Other	92.21	32.97
10	Freight	12.75	5.04
11	Other Material related expenses	13.93	6.88
12	Total Expenses	184.14	74.74
13	Add: BBMB share	1.49	
14	Total Expenses	185.63	74.74
15	Less: Capitalised	34.18	4.43
16	Net Expenditure	151.45	70.31
17	Add Prior Period*	2.94	
18	A&G for Asset Addition During the Year	-	
19	Total	154.39	70.31

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PUNJAB STATE POWER CORPORATION LIMITED
 ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
 R&M + A&G Expenses as per Commission's direction (Cr.)

Format 13+14

Sr. No.	Particulars	FY 2017-18 (Revised Estimates)	FY 2018-19 (Revised Estimates)
	Generation		
1	Opening GFA	24173.33	24448.26
2	Closing GFA	24448.26	24751.15
3	Average GFA	24310.79	24599.70
4	K factor	0.91%	0.91%
5	Escalation factor	1.73%	1.73%
5	R&M and A&G Expenses	223.86	226.52
6	Add: Audit Fee	-	-
7	Add: Licence Fee and ARR Fee	-	-
8	Add: Others	-	-
9	Grand Total	223.86	226.52
	Distribution		
1	Opening GFA	25319.03	26623.95
2	Closing GFA	26623.95	28106.22
3	Average GFA	25971.49	27365.08
4	K factor	1.65%	1.65%
5	Escalation factor	1.73%	1.73%
6	Licence fees and fees for determination of tariff	13.70	13.70
5	R&M and A&G Expenses	448.52	471.85

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
FORMAT 15(A)

DETAILS OF LOANS FOR THE YEAR 2016-17 (Actual) (Cr.)

Sr. No.	Particulars	Opening Balance as on 01/04/2016	Rate of Interest	Addition from 01/04/2016 to 31/03/2017	Repayment from 01/04/2016 to 31/03/2017	Closing Balance as on 31/03/2017	Amount of Interest Paid/ Payable
	Long Term Loans						
1	Non SLR Bonds	331.60	9.01%-10.15%	0.00	0.00	331.60	32.48
2	LIC	0.00	0.00	0.00	0.00	0.00	0.00
3	REC Limited						
	T & D Scheme Loans	4603.50	8.00%-12.25%	724.44	2195.30	3132.64	386.06
	R-APDRP	277.32	11.50%-12.00%	210.80	0.00	488.12	42.10
	Generation Schemes	769.94	7.00%-12.50%	63.06	324.80	508.20	80.45
4	Commercial Banks:						
	Long Term Loans	2620.04	9.45%-11.70%	0.00	400.38	2219.66	268.16
5	PFC Limited						
	Generation Schemes	97.59	9.50%-12.50%	0.00	89.18	8.41	3.56
	T&D Schemes	1.18	12.5%	0.00	1.18	0.00	0.06
6	CSS Loans:						
	APDRP	45.64	10.50%-12.50%	0.00	6.31	39.33	5.01
	R-APDRP	411.53	9.00%-11.50%	0.00	0.00	411.53	40.69
7	Govt. of Punjab Loans (UDAY BONDS)	9859.72	8.21%-8.72%	5768.54	0.00	15628.26	1192.17
8	PSPCL Bonds	0.00	8.5%	0.00	0.00	0.00	0.00
9	RBI Bonds	17.62	8.5%	0.00	17.62	0.00	0.00
10	GPF Liability	1772.88	8.10%-8.50%	0.00	230.27	1542.61	130.33
A.	Total Long Term Loans (1 to 9)	20808.56		6766.84	3265.04	24310.36	2181.07
B.	Working Capital Loans						
(i)	Normal Working capital loans	3425.00	9.80%-11.90%	3356.09	1561.91	5219.18	445.46
(ii)	Bridge Loans						
	- Working Capital Loans raised due to loans recall by GOP	1444.59	9.80%-11.90%	0.00	1444.59	0.00	60.86
	- Working Capital Loans raised due to adjustment of Rbi Bonds	551.24	9.80%-11.90%	0.00	551.24	0.00	23.22

Sl. No.	Particulars	Opening Balance as on 01.04.2016	Rate of Interest	Additions from 01.04.2016 to 31.03.2017	Repayments from 01.04.2016 to 31.03.2017	Closing Balance as on 31.03.2017	Amount of Interest Paid/Payable
	from subsidy by GOP						
	- Working Capital Loans raised due to excess interest paid to GOP	200.24	9.80%-11.90%	0.00	200.24	0.00	8.44
	- Working Capital Loans raised due to carrying cost gap for 2010-11 & 2011-12 as per Tariff Order not released by GOP	379.95	9.80%-11.90%	0.00	379.95	0.00	16.01
(iii)	Working Capital Loans raised due to payment towards additional levy for PANEM coal mine	390.00	9.80%-11.90%	0.00	390.00	0.00	16.43
(iv)	Working Capital Loans raised due to payment made to PTC Mallana as per orders of Hon'ble Supreme Court	40.00	9.80%-11.90%	0.00	40.00	0.00	1.97
B.	Working Capital Loans (i+ii+iii+iv)	6431.02	9.80%-11.90%	3356.09	4567.93	5219.18	572.38
	TOTAL (A+B)	27239.58	9.80%-11.90%	10122.93	7832.97	29529.54	2753.45
	Interest On Consumer						151.82
	Total Interest						2905.27
	Less Capitalisation						282.95
	Net Interest						2622.32
	Other Interest (Inc. Finance Charges)						36.34
	Total Interest and Finance Charges						2658.66



PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
DETAILS OF LOANS FOR THE YEAR FY 2017-18 (H1) (Cr.)

Format 15 B

(5)	Particulars	Outstanding as on 30.09.2017	Receipt	Repayment	Outstanding as on 30.09.2017	Interest payable
1	DISTRIBUTION LOANS					
	Loans not covered under UDAY					
	PFC-R-APDRP	411.53		1.95	409.58	4.69
	PFC-Sultanpur Lodhi Scheme	0.00	0.00	0.00	0.00	0.00
	LTL-COMMERCIAL BANKS	2219.66	250.00	85.71	2383.95	113.78
	Banks-Loans for Annual Plans					
	CSS Loans-APDRP	39.33		2.52	36.81	1.72
	REC-TOTAL T & D SCHEME /66KV WORK LOANS	3620.76	376.82	210.05	3787.53	208.03
	WCL-Short Term Loans	967.91	1250.00	417.91	1800.00	72.21
	WCL-Medium Term Loans	747.50		102.11	645.39	40.13
	WCL-Term Loans	3000.00			3000.00	173.68
	REC-Loans for Annual Plans				0.00	
	Total	11006.69	1876.82	820.25	12063.26	614.24
	Interest to consumers					
	Finance charges:- On long term loans					0.00
	Finance charges:- On Working capital loans					
	Sub Total	11006.69	1876.82	820.25	12063.26	614.24
	Loans covered under UDAY					
	GOP LOANS(UDAY BONDS)	15628.26			15628.26	653.23
	DISCOM Bonds				0.00	
	Sub total	15628.26	0.00	0.00	15628.26	653.23
	Others Loan					
	Others					2.07
	Liability for GPF	1542.61		269.58	1273.03	
	CC/OD Limits	503.77	33.93		537.70	34.39
	NON - SLR BONDS	0.00	0.00	0.00	0.00	0.00
	Finance charges:- On long term loans					
	Subtotal	2046.38	33.93	269.58	1810.73	36.46
	Sub Total Distribution loans	28681.33	1910.75	1089.83	29502.25	1303.93
2	GENERATION LOANS					

Sr No	Particulars	Outstanding as on 30.04.17	Receipt	Repayment	Outstanding as on 30.09.2017	Interest Payable
	PFC-GENERAL LOANS	8.41		8.41	0.00	0.07
	PFC-ODDISHA PROJECT	0.00			0.00	0.00
	REC- R&M Generation Loans	508.20	14.36	151.49	371.07	28.36
	REC-Loans for Annual Plans	0.00			0.00	0.00
	Banks-Loans for Annual Plans	0.00			0.00	0.00
	Sub Total	516.61	14.36	159.90	371.07	28.43
	Finance charges:- On long term loans					0.00
	NON - SLR BONDS	331.60	0.00	0.00	331.60	16.31
	Sub Total Generation loans	848.21	14.36	159.90	702.67	44.74
	GRAND TOTAL(1+2+3+4)	29529.54	1925.11	1249.73	30204.92	1348.67

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
DETAILS OF LOANS FOR THE YEAR FY 2017-18 (H2) (Cr.)
 Format 15 C FY 2017-18 (H2) (Projected)

Sr.No	Particulars	Receipt	Repayment	Outstanding as on 31.03.18	Interest payable
	DISTRIBUTION LOANS				
A	Loans not covered under UDAY				
a	PFC-R-APDRP		0.64	408.94	32.23
b	PFC-Sultanpur Lodhi Scheme			0.00	0.00
c	LTL-COMMERCIAL BANKS		1683.95	700.00	75.28
d	Banks-Loans for Annual Plans	143.92	0.00	143.92	4.08
e	CSS Loans-APDRP		3.78	33.03	2.58
f	REC-TOTAL T & D SCHEME /66KV WORK LOANS		2206.41	1581.12	138.61
g	WCL-Short Term Loans	0.00	1179.35	620.65	76.11
h	WCL-Medium Term Loans	1320.00	195.89	1769.50	69.62
i	WCL-Term Loans			3000.00	176.19
j	REC-Loans for Annual Plans	214.07		214.07	5.67
	Total	1677.99	5270.02	8471.23	580.37
	Interest to consumers				167.00
	Finance charges:- On long term loans				216.26
	Finance charges:- On Working capital loans				7.50
	Sub Total	1677.99	5270.02	8471.23	971.13
B	Loans covered under UDAY			0.00	
a	GOP LOANS(UDAY BONDS)			15628.26	653.23
b	DISCOM Bonds	5209.42		5209.42	110.70
	Sub total	5209.42	0.00	20837.68	763.93
	Others Loan				
a	Others				
b	Liability for GPF		110.76	1162.27	112.64
c	CC/OD Limits	322.30		860.00	36.69
d	NON - SLR BONDS	0.00	0.00	0.00	0.00
e	Finance charges:- On long term loans				
	Subtotal	322.30	110.76	2022.27	149.33
	Sub Total Distribution loans	7209.71	5380.78	31331.18	1884.39
	GENERATION LOANS				

Sl.No.	Particulars	Receipt	Repayment	Outstanding as on 31.03.18	Interest payable
c	REC- R&M Generation Loans		29.62	341.45	26.53
d	REC-Loans for Annual Plans	156.10		156.10	4.29
e	Banks-Loans for Annual Plans	113.64		113.64	3.22
	Sub Total	269.74	29.62	611.19	34.04
a	Finance charges:- On long term loans				2.27
b	NON - SLR BONDS	0.00	0.00	331.60	16.31
	Sub Total Generation loans	269.74	29.62	942.79	52.62
	GRAND TOTAL(1+2+3+4)	7479.45	5410.40	32273.97	1937.01



PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
DETAILS OF LOANS FOR THE YEAR FY 2017-18 (H1+H2) (Cr.)
FY 2017-18 (H1+H2) (Projected)
Format 15 D (H1+H2) (Revised Estimates)

Sr. No.	Particulars	Receipt	Repayment	Outstanding as on 31-03-18	Interest payable
	DISTRIBUTION LOANS				
A	Loans not covered under UDAY				
a	PFC-R-APDRP	0.00	2.59	408.94	36.92
b	PFC-Sultanpur Lodhi Scheme	0.00	0.00	0.00	0.00
c	LTL-COMMERCIAL BANKS	250.00	1769.66	700.00	189.06
d	Banks-Loans for Annual Plans	143.92	0.00	143.92	4.08
e	CSS Loans-APDRP	0.00	6.30	33.03	4.30
f	REC-TOTAL T & D SCHEME /66KV WORK LOANS	376.82	2416.46	1581.12	346.64
g	WCL-Short Term Loans	1250.00	1597.26	620.65	148.32
h	WCL-Medium Term Loans	1320.00	298.00	1769.50	109.75
i	WCL-Term Loans	0.00	0.00	3000.00	349.87
j	REC-Loans for Annual Plans	214.07	0.00	214.07	5.67
	total	3554.81	6090.27	8471.23	1194.61
	Interest to consumers	0.00	0.00	0.00	167.00
	Finance charges:- On long term loans	0.00	0.00	0.00	216.26
	Finance charges:- On Working capital loans	0.00	0.00	0.00	7.50
	Sub Total	3554.81	6090.27	8471.23	1585.37
B	Loans covered under UDAY	0.00	0.00	0.00	0.00
a	GOP LOANS(UDAY BONDS)	0.00	0.00	15628.26	1306.46
b	DISCOM Bonds	5209.42	0.00	5209.42	110.70
	Sub total	5209.42	0.00	20837.68	1417.16
	Others Loan	0.00	0.00	0.00	0.00
a	Others	0.00	0.00	0.00	2.07
b	Liability for GPF	0.00	380.34	1162.27	112.64
c	CC/OD Limits	356.23	0.00	860.00	71.08
d	NON - SLR BONDS	0.00	0.00	0.00	0.00
e	Finance charges:- On long term loans	0.00	0.00	0.00	0.00
	Subtotal	356.23	380.34	2022.27	185.79

Sr No	Particulars	Receipt	Repayment	Outstanding as on 31.03.18	Interest payable
	Sub Total Distribution loans	9120.46	6470.61	31331.18	3188.32
	GENERATION LOANS	0.00	0.00	0.00	0.00
a	PFC-GENERAL LOANS	0.00	8.41	0.00	0.07
b	PFC-ODDISHA PROJECT	0.00	0.00	0.00	0.00
c	REC- R&M Generation Loans	14.36	181.11	341.45	54.89
d	REC-Loans for Annual Plans	156.10	0.00	156.10	4.29
e	Banks-Loans for Annual Plans	113.64	0.00	113.64	3.22
	Sub Total	284.10	189.52	611.19	62.47
a	Finance charges:- On long term loans	0.00	0.00	0.00	2.27
b	NON - SLR BONDS	0.00	0.00	331.60	32.62
	Sub Total Generation loans	284.10	189.52	942.79	97.36
	GRAND TOTAL(1+2+3+4)	9404.56	6660.13	32273.97	3285.68

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
DETAILS OF LOANS FOR THE YEAR FY 2018-19 (Cr.)
 Format 15 E FY 2018-19 (Revised Estimates)

	Particulars	Receipt	Repayment	Outstanding as on 31.03.19	Interest payable
	DISTRIBUTION LOANS				
A	Loans not covered under UDAY				
a	PFC-R-APDRP		8.77	400.17	40.69
b	PFC-Sultanpur Lodhi Scheme			0.00	
c	LTL-COMMERCIAL BANKS		16.07	683.93	72.32
d	Banks-Loans for Annual Plans	552.20		696.12	35.70
e	CSS Loans-APDRP		6.30	26.73	3.60
f	REC-TOTAL T & D SCHEME / 66KV WORK LOANS		48.88	1532.24	144.33
g	WCL-Short Term Loans		620.65	0.00	13.84
h	WCL-Medium Term Loans	2177.00	1556.23	2390.27	217.37
i	WCL-Term Loans			3000.00	349.50
j	REC-Loans for Annual Plans	828.30		1042.37	66.59
	total	3557.50	2256.90	9771.83	943.94
	Interest to consumers				183.70
	Finance charges:- On long term loans				11.04
	Finance charges:- On Working capital loans				10.89
	Sub Total	3557.50	2256.90	9771.83	1149.57
B	Loans covered under UDAY				
a	GOP LOANS(UDAY BONDS)			15628.26	1306.95
b	DISCOM Bonds			5209.42	442.80
	Sub total	0.00	0.00	20837.68	1749.75
	Others Loan				
a	Others				
b	Liability for GPF	0.00	221.52	940.75	93.46
c	CC/OD Limits			860.00	90.30
d	NON - SLR BONDS	0.00	0.00	0.00	0.00
e	Finance charges:- On long term loans				
	Subtotal	0.00	221.52	1800.75	183.76
	Sub Total Distribution loans	3557.50	2478.42	32410.26	3083.08
	GENERATION LOANS				

	Particulars	Receipt	Repayment	Outstanding as on 31.03.19	Interest payable
a	PFC-GENERAL LOANS			0.00	
b	PFC-ODDISHA PROJECT			0.00	
c	REC- R&M Generation Loans		46.98	294.47	36.81
d	REC-Loans for Annual Plans	192.91		349.01	27.78
e	Banks-Loans for Annual Plans	128.61		242.25	15.13
	Sub Total	321.52	46.98	885.73	79.72
a	Finance charges:- On long term loans				2.57
b	NON - SLR BONDS	0.00	307.20	24.40	21.44
	Sub Total Generation loans	321.52	354.18	910.13	103.73
	GRAND TOTAL(1+2+3+4)	3879.02	2832.60	33320.39	3186.81
				27930.12	

PUNJAB STATE POWER CORPORATION LIMITED
 ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
 INTEREST AND FINANCE CHARGES

FORMAT 16

Rs. In Crores

S. No.	Particulars	FY 2017-18 (Provisional)	FY 2017-18 H1 (Actuals)	FY 2017-18 H2 (Estimate)	FY 2017-18 (Revised Estimates)	FY 2018-19 (Revised Estimates)
1	Non SLR Bonds	32.48	16.31	127.01	143.32	464.24
2	LIC	-	-	-	-	-
3	REC	508.61	236.39	175.10	411.49	275.51
4	Commercial Banks (Long Term)	268.16	113.78	82.58	196.36	123.15
5	Interest to Consumers	151.82	-	167.00	167.00	183.70
6	Lease Rental	-	-	-	-	-
7	PFC	3.62	0.07	-	0.07	-
8	GPF	130.33	-	112.64	112.64	93.46
9	CSS/ Loans	45.70	6.41	34.81	41.22	44.29
10	Working Capital Loans	572.38	320.41	358.61	679.02	671.01
11	Others Interest	12.42	2.07	-	2.07	-
12	TOTAL	1,725.52	695.44	1,057.75	1,753.19	1,855.36
13	State Govt Loans	1,192.17	653.23	653.23	1,306.46	1,306.95
14	TOTAL(11+12)	2,917.69	1,348.67	1,710.98	3,059.65	3,162.31
15	Less: Capitalisation	282.95	-	-	118.60	111.33
16	Net Interest	2,634.74	1,348.67	1,710.98	2,941.05	3,050.98
17	Add: prior period	-	-	-	-	-
18	Total Interest	2,634.74	1,348.67	1,710.98	2,941.05	3,050.98
19	Finance Charges	23.92	-	226.03	226.03	24.49
20	Total Interest And Finance Charges	2,658.66	1,348.67	1,937.01	3,167.08	3,075.47
21	Other loans	-	-	-	-	-
22	Grand Total	2,658.66	1,348.67	1,937.01	3,167.08	3,075.47

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
INTEREST CAPITALIZED
FORMAT 17

Crores

Sr. No.	Particulars	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19
		Actual	(Actual)	(Provisional)	(Revised Estimates)	(Revised Estimates)
1	WIP at the end of the year	1,701.64	1,656.25	1,164.18	1,053.24	1,190.10
2	GFA at the end of the year	44,442.09	46,455.75	49,492.36	51,072.21	52,857.36
3	WIP+GFA at the end of the year	46,143.73	48,112.00	50,656.54	52,125.45	54,047.47
4	Interest (excluding interest on WCL)	1,165.05	1,074.98	858.60	1,954.25	2,050.72
5	Interest Capitalised	377.17	382.69	282.95	118.60	111.33

PUNJAB STATE POWER CORPORATION LIMITED
 ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
 NON TARIFF INCOME (Cr.)
 FORMAT 20

Sl. No.	Particulars	FY 2016-17 (Provisional)	FY 2017-18 (H1 Actuals)	FY 2017-18 (H2 Estimate)	FY 2017-18 (Revised Estimates)	FY 2018-19 (Revised Estimates)
1	Meter/service rent	92.05	46.62	53.07	99.69	105.59
2	Late payment surcharge	137.70	109.44	28.26	137.70	137.70
3	Theft & pilferage of energy	44.29	17.88	26.41	44.29	44.29
4	Misc. receipts	542.23	119.54	422.69	542.23	542.23
5	Misc. charges (except PLEC)	15.59	4.34	11.25	15.59	15.59
6	Wheeling charges	189.33	9.07	-	9.07	-
7	Interest on staff loans & advance	56.07	27.11	28.96	56.07	56.07
8	Income from trading	4.16	2.12	(2.12)	-	-
9	Income staff welfare activities	0.04	0.02	0.02	0.04	0.04
10	Excess on verification	-	0.00	-	-	-
11	Investments & bank balances	10.79	1.43	9.36	10.79	10.79
12	Gain on sale of asset	0.01	0	(2.91)	-	-
	Excess on verification		2.91			
13	Depreciation from consumer contribution			129.46	129.46	129.46
14	Total income	1,092.26	340.48	704.45	1,044.93	1,041.76
15	Add prior period income*	32.65	0.00	-	-	-
16	BBMB Income	4.50	1.00	3.50	4.50	4.50
17	Total non tariff income	1,129.41	341.48	707.95	1,049.43	1,046.26
16	Less: Late Payment surcharge	137.70	109.44	28.26	137.70	137.70
17	Less: Rebate for timely payment for Power Purchase (GH62.930)	123.21	75.44	47.77	123.21	123.21
18	Net Non-tariff income	868.50	156.60	631.91	788.51	785.35

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
INVESTMENT PLAN SCHEME WISE (Cr.)
FORMAT 21

Name of Projects /Schemes	FY2017-18 (APR)	FY2018-19 (RE)
GNDTP	44	39
GHTP	6	94
GGSSTP	23	23
Total Thermal	74	156
Anandpur Sahib Hydel Project	26	11
Mukerian Hydel Project	59	80
Ranjit Sagar Dam HEP	20	15
Shanan Power House Hydel Project	81	12
Uppar Bari Doab Canal HEP	13	18
Total Hydel	199	137
Other works	12	28
TOTAL GENERATION	284	322
TRANSMISSION	350	350
DISTRIBUTION		
Normal development works including SI schemes	168	200
Shifting of Meters out of consumer premises (Demand side management measures)	31	75
Civil works of Grid substations	7	8
Rural Electrification : Providing 11 KV manual Operative switch Gears	4	8
Release of Tube well connections for general connections and semi-affected area	30	36
Comprehensive T&D loss réduction plan	-	-
Works relating to APDRP-II Part-A	43	14
Works relating to APDRP-II Part B	275	400
IT in Distribution offices	27	50
Integrated Power development scheme	100	200
DDUGJY	150	260
TOTAL DISTRIBUTION	835	1,251
TOTAL DISTRIBUTION (Including Transmission)	1,185	1,601
TOTAL CAP EXP -PSPCL	1,469	1,922

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19

INVESTMENT PLAN (YEAR WISE)
FORMAT 22

(Rs. in 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
2	FY 2016-17 (Provisional)	3,183.95	1,600.00	3,183.95	1600		
3	FY 2017-18 (RE)	2774.69	1310.67	1468.92			
4	FY 2018-19 (Projected)	2118.70	1303.25	1922.02			

PUNJAB STATE POWER CORPORATION LIMITED
 ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
 CAPITAL BASE AND RETURN
 FORMAT 23

Sr. No.	Particulars	(Rs. In Crores)				
		FY 2014-15 Actual	FY 2015-16 (Actual)	FY 2016-17 (Provisional)	FY 2017-18 (Revised Estimates)	FY 2018-19 (Revised Estimates)
1	2	3	4	5	6	7
1	Gross block at beginning of the year	42,561.08	44,442.11	46,455.75	49,492.36	51,072.21
2	Less accumulated depreciation	10,778.07	11,669.73	12,733.50	13,945.98	15,543.28
3	Net block at beginning of the year	31,783.01	32,772.38	33,722.25	35,546.38	35,528.93
4	Less accumulated consumer contribution	1,065.08	1,439.43	2,278.03	1,855.56	2,041.11
5	Net fixed assets at beginning of the year	30,717.93	31,332.95	31,444.22	33,690.82	33,487.82
6	Reasonable return @ 3% of NFA	921.54	939.99	943.33	1,010.72	1,004.63

Sr. No.	Particulars	Amount
	Accumulated Depreciation	
1	As on 31st March of the year (FY 2011-12)	9,139.52
2	Add: Depreciation for current year (FY 2012-13)	716.27
3	As on 31st March of the year (FY 2012-13)	9,855.79
4	Add: Depreciation for year (FY 2013-14)	922.28
5	As on 31st March of the year (FY 2013-14)	10,778.07
6	Add: Depreciation for current year (FY 2014-15)	891.66
7	As on 31st March of the year (FY 2014-15)	11,669.73
8	Add: Depreciation for current year (FY 2015-16)	1,063.77
9	As on 31st March of the year (FY 2015-16)	12,733.50
10	Add: Depreciation for current year (FY 2016-17)	1,212.48
11	As on 31st March of the year (FY 2016-17)	13,945.98
12	Add: Depreciation for current year (FY 2017-18)	1,597.30
13	As on 31st March of the year (FY 2017-18)	15,543.28
14	Add: Depreciation for current year (FY 2018-19)	1,652.78
15	As on 31st March of the year (FY 2018-19)	17,196.06

Consumers Contribution		
1	As on 31st March of the year (FY 2011-12)	377.06
2	Addition during the year (FY 2012-13)	366.42
3	As on 31st March of previous year (FY 2012-13)	743.48
4	Addition during previous year (FY 2013-14)	321.60
5	As on 31st March of previous year (FY 2013-14)	1,065.08
6	Addition during current year (FY 2014-15)	252.40
7	As on 31 st March of current year (FY 2014-15)	1,317.48
8	Addition during ensuing year (FY 2015-16)	121.94
9	As on 31 st March of current year (FY 2016-17)	1439.42
10	Addition during ensuing year (NET)	968.21
11	Deduction during the year (Transfer to P&L A/c)	129.6
12	As on 31 st March of current year (FY 2016-17)	2278.03

PUNJAB STATE POWER CORPORATION LIMITED
 ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
 CASH FLOW STATEMENT FOR FY 2016-17 (PRO)

FORMAT 24

(Rs. In Crores)

Sl. No.	Month	Sources of Receipt	Amount	Particulars of Payment	Amount
1	April				
2	May				
3	June				
4	July				
5	August		Nil		
6	September				
7	October				
8	November				
9	December				
10	January				
11	February				
12	March				
	Total				

The format prescribed by the Commission required monthwise cashflow which would require fairly detailed assesment of timing of revenue, cost, 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 UP TO THE YEAR FY 2018-19

ORIGINAL COST OF FIXED ASSET

FORMAT 25

(Rs. in crores)

Sl. No.	Assets group	Opening balance for FY 2016-17	Addition during FY 2016-17	Closing balance at the end of FY 2016-17	Addition during FY 2017-18	Closing balance at the end of FY 2017-18	Addition during FY 2018-19	Closing balance at the end of FY 2018-19
1	2	3	4	5	6	7	8	9
1	Generation	23,719.62	453.71	24,173.33	274.93	24,448.26	302.88	24,751.15
2	Distribution	22,736.12	2,582.91	25,319.03	1,304.92	26,623.95	1,482.27	28,106.22
3	Total	46,455.75	3,036.61	49,492.36	1,579.85	51,072.21	1,785.15	52,857.36

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
WORK IN PROGRESS
FORMAT 26

(Rs. In Crores)

Sr. No.	Category of Consumer	FY 2016-17 (Provisional)	FY 2017-18 (Revised Estimates)	FY 2018-19 (Revised Estimates)
1	Opening balance	1,656.24	1,164.18	1,053.24
2	Add: New investment	2,970.69	1,468.91	1,922.02
3	Total	4,626.93	2,633.09	2,975.26
4	Less investment capitalized	3,462.75	1,579.85	1,785.15
5	Closing balance	1,164.18	1,053.24	1,190.10



PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
REVENUE FROM EXISTING TARIFF FY 2016-17 (provisional)
FORMAT 27-A

Sr. No.	Category of Consumers	Energy Sales (MU's)	Avg Billing Rate (P/Unit)	Revenue (Rs. in crores)
1	Domestic	13,080.39	525.84	6878.23
2	Commercial (NRS)	3,801.94	620.20	2357.96
3	Industrial			
a	Small Supply	983.83	573.29	564.02
b	Medium Supply	2,214.99	584.95	1295.65
c	Large Supply	11,115.19	623.97	6935.52
	Total	14,314.01	614.45	8795.19
4	Public Lighting	192.00	682.39	131.02
5	Bulk Supply	661.06	605.76	400.44
6	Railway Traction	183.04	614.14	112.41
7	Total Metered Sales (except AP) within State	32,232.44		18,675.25
8	AP Consumption	12,008.98	461.19	5510.21
9	Total Sale Within State	44,241.42		24,185.46
10	Sales to Outside State	109.88	97.86	0.00
11	Sales to Common Pool Consumers	305.39	340.61	149.58
12	Total Sales (9+10+11)	44,656.68		24,335.04
13	Add MMC, Theft and other charges			491.36
14	PLEC			93.40
15	Surcharge			-303.65
16	Grand Total			24616.15

PUNJAB STATE POWER CORPORATION LIMITED
 ANNUAL REVENUE REQUIREMENT UP TO THE YEAR 2018-19
 REVENUE FROM EXISTING TARIFF FY 2017-18 H1 (Actual)
 FORMAT 27-B

Sr. No	Category of Consumers	Energy Sales (MD's)	Avg Billing Rate (P/Unit)	Revenue (Rs. in crores)
1	Domestic	7,868.45	468.63	3687.41
2	Commercial (NRS)	2,194.93	529.42	1162.05
3	Industrial	-		
a	Small Supply	527.90	490.30	258.83
b	Medium Supply	1,132.32	467.68	529.56
c	Large Supply	6,254.69	501.41	3136.15
	Total	7,914.91	495.84	3924.54
4	Public Lighting	94.36	563.69	53.19
5	Bulk Supply	363.26	519.88	188.85
6	Railway Traction	108.50	553.46	60.05
7	Total Metered Sales (except AP) within State	18,544.41	489.42	9,076.09
8	AP Consumption	9,100.88	464.62	4228.42
9	Total Sale Within State	27,645.29	481.26	13304.51
10	Sales to Outside State	-		0.00
11	Sales to Common Pool Consumers	-	-	73.19
12	Total Sales (9+10+11)	27,645.29		13,377.70
13	Add MMC			204.23
14	PLEC			8.08
15	Theft			17.87
16	Surcharge/ Incentive(Net)			(25.34)
17	Grand Total	27,645.29		13,582.54

Note : H1 as per pumped energy projection

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PUNJAB STATE POWER CORPORATION LIMITED
 ANNUAL REVENUE REQUIREMENT UP TO THE YEAR 2018-19
 REVENUE FROM EXISTING TARIFF FY 2017-18 (RE)(H2)

FORMAT 27-C

Sl. No.	Category of Consumers	Energy Sales (MU's)	Ave. Billing Rate (P/Unit)	Revenue (Rs. In Crores)
1	Domestic	5,927.86	134.97	4,640.12
2	Commercial (NRS)	1,833.46	205.16	1,797.13
3	Industrial			-
a	Small Supply	480.03	119.70	356.01
b	Medium Supply	1,211.58	183.90	997.67
c	Large Supply	6,393.30	172.82	5,391.52
	Total	8,084.91	171.02	6,745.20
4	Public Lighting	93.34	175.30	85.52
5	Bulk Supply	310.61	193.56	291.91
6	Railway Traction	98.05	192.56	94.04
7	Total Metered Sales (except AP) within State	16,348.22		13,653.91
8	AP Consumption	3,254.95		2,023.63
9	Total Sale Within State	19,603.17		15,677.54
10	Sales to Outside State	128.40		142.40
11	Sales to Common Pool Consumers	311.68		70.96
12	Total Sales (9+10+11)	20,043.24		15,890.90
13	Add MMC, Theft and other charges	-		
14	PLEC	-		
15	Surcharge	-		
16	Grand Total	20,043.24		

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
REVENUE FROM EXISTING TARIFF FY 2017-18 (Projection)
FORMAT 27-D

Sl. No.	Category of Consumers	Energy Sales (MU's)	Avg. Billing Rate (P/Unit)	Revenue (Rs. in crores)
1	Domestic	13,796.31	603.61	8327.53
2	Commercial (NRS)	4,028.39	734.58	2959.18
3	Industrial	-		
a	Small Supply	1,007.93	610.00	614.84
b	Medium Supply	2,343.90	651.58	1527.23
c	Large Supply	12,647.99	674.23	8527.67
	Total	15,999.82	666.87	10669.74
4	Public Lighting	187.70	738.99	138.71
5	Bulk Supply	673.87	713.43	480.76
6	Railway Traction	206.55	746.02	154.09
7	Total Metered Sales (except AP) within State	34,892.63	651.43	22,730.00
8	AP Consumption	12,355.83		6252.05
9	Total Sale Within State	47,248.46		28982.05
10	Sales to Outside State	128.40		142.40
11	Sales to Common Pool Consumers	311.68		144.15
12	Total Sales (9+10+11)	47,688.54		29,268.60
13	Add MMC			584.77
14	PLEC			
15	Surcharge			(303.65)
16	SOP Recognized by PSERC			
17	Grand Total	47,688.54		29,549.72



PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
REVENUE FROM EXISTING TARIFF FY 2018-19 (Projection)
FORMAT 27-E

Sr. No.	Category of Consumers	Energy Sales (MU's)	Ave. Billing Rate (P/Unit)	Revenue (Rs. in Crores)
1	Domestic	14,816.97	603.61	8943.60
2	Commercial (NRS)	4,351.47	734.58	3196.51
3	Industrial	-		
a	Small Supply	1,035.80	612.00	633.91
b	Medium Supply	2,463.43	657.00	1618.48
c	Large Supply	13,187.05	689.00	9085.88
	Total	16,686.29	679.50	11338.27
4	Public Lighting	195.39	738.99	144.39
5	Bulk Supply	694.47	713.43	495.46
6	Railway Traction	224.02	746.02	167.13
7	Total Metered Sales (except AP) within State	36,968.61		24,285.36
8	AP Consumption	13,943.49		6736.82
9	Total Sale Within State	50,912.10		31022.18
10	Sales to Outside State	127.46		50.78
11	Sales to Common Pool Consumers	341.64		159.38
12	Total Sales (9+10+11)	51,381.20		31,232.33
13	Add MMC			584.77
14	PLEC			
15	Surcharge			(303.65)
16	SOP Recognized by PSERC			
17	Grand Total	51,381.20		31,513.45

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PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
ARR FOR FY 2016-17 (Provisional)
FORMAT 28-A

Particulars	Rs. In Crores
	Actual
Cost of fuel	2,037.25
Cost of power purchase	15,910.79
Employee cost	4,552.97
R&M expenses	384.83
A&G expenses	154.39
Depreciation	1,063.77
Interest charges (Net of Capitalization)	2,658.66
Return on Equity	942.62
Transmission Charges Payable to PSTCL	1,047.02
Maintenance Charges payable to Punjab Govt. on Power from RSD	6.13
Capitalisation of cost of generation during trial stage	-
Prior period adjustment	(14.64)
Other debts	28.46
Total Revenue Requirement	28,772.26
Less Non-Tariff income	868.50
Net Revenue Requirement	27,903.76
Less Revenue from existing tariff	24,616.15
Tariff Compensation from GOP	-
Less: On account of rebate to various consumer categories	0
Net Revenue from Existing Tariff	-
Less: Disallowances due to non-achievement of mile-stones	-
Gap (+)/surplus (-) for the year	3,287.61
Add consolidated Gap (+)/surplus (-) upto previous year	-
Add Carrying Cost on Gap (+)/surplus (-) of Previous Year	-
Add carrying cost on Gap (+)/surplus (-) of current year	-
Total Cumulative Gap (+)/surplus (-) for the year	3,287.61

Note:- Minor difference may be due to rounding off.

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
ARR FOR FY 2017-18 (H1+H2) (Projected)
FORMAT 28-B

Particulars	Rs. In Crores
	Projected
Cost of fuel	1,601.35
Cost of power purchase	17,001.58
Employee cost	5,514.21
R&M and A&G expenses	672.38
Depreciation	1,597.30
Interest charges (Net of Capitalization)	3,167.08
Return on Equity	942.62
Interest on Working Capital (IWC)	140.78
Transmission Charges Payable to PSTCL	1,234.87
Maintenance Charges payable to Punjab Govt. on Power from RSD	12.00
Extraordinary items and debits	-
Prior period adjustment	-
Provision for DSM fund	10.00
Total Revenue Requirement	31,894.16
Less Non-Tariff income	788.51
Net Revenue Requirement	31,105.65
Less Revenue from existing tariff	29,549.72
Gap (+) /surplus (-) for the year	1,555.94
Impact as per Commission's order dated 8-11-2017 on O&M Expenses of BBMB	1,410.88
Add consolidated Gap (+) /surplus (-) upto previous year	-
Add Carrying Cost on Gap (+) /surplus (-) of Previous Year	-
Add carrying cost on Gap (+) /surplus (-) of current year	-
Total Cumulative Gap (+) /surplus (-) for the year	2,966.82

PUNJAB STATE POWER CORPORATION LIMITED
 ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
 ARR FOR FY 2018-19 (Projected)
 FORMAT 28-C

Particulars	Rs. In Crores
	Projected
Cost of fuel	1,661.60
Cost of power purchase	19,120.37
Employee cost	5,744.25
R&M and A&G expenses	698.37
Depreciation	1,652.78
Interest charges (Net of Capitalization)	3,075.47
Return on Equity	942.62
Interest on Working Capital (IWC)	145.55
Transmission Charges Payable to PSTCL	1,283.86
Maintenance Charges payable to Punjab Govt. on Power from RSD	12.60
Extraordinary items and debits	-
Prior period adjustment	-
Provision for DSM fund	10.00
Total Revenue Requirement	34,347.46
Less Non-Tariff income	785.35
Net Revenue Requirement	33,562.11
Less Revenue from existing tariff	31,513.45
Gap (+)/surplus (-) for the year	2,048.67
Add consolidated Gap (+) /surplus (-) upto previous year	2966.82
Add Carrying Cost on Gap (+) /surplus (-) of Previous Year	157.73
Add carrying cost on Gap (+) /surplus (-) of current year	166.11
Total Cumulative Gap (+)/surplus (-) for the year	5,339.33

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
INFORMATION REGARDING WHOLESAL PRICE INDEX (ALL COMMODITIES)
 (To be supported with documentary evidence)
FORMAT 29

Sr. No.	Period	WPI	Increase over previous year
1	2	3	4
2	As on April of n-4 year (FY 2012-13)	106.90	0.00%
3	As on April of n-3 year (FY 2013-14)	112.46	5.20%
4	As on April of n-2 year (FY 2014-15)	113.88	1.26%
5	As on April of n-1 year (FY 2015-16)	109.72	-3.65%
6	As on April of n (ensuing) year (FY 2016-17)	111.62	1.73%
7	As on April of n+1 (ensuing) year (FY 2017-18)	113.63	1.81%

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
INFORMATION REGARDING AMOUNT OF EQUITY AND LOAN
FORMAT 30

(Rs. In Crores)

Sr. No.	Period	Amt. of Equity (Rs. in crores)	Amt. of Loan* (Rs. in crores)	Ratio of equity & loan
1	2	3	4	5
3	As on 31-03-2014 (Actual)	6,081.43	10,198.15	0.60
4	As on 31-03-2015 (Actual)	6,081.43	10,684.59	0.57
5	As on 31-03-2016 (Actual)	6,081.43	20,808.56	0.29
6	As on 30-09-2017 (H1)	6,081.43	24,814.13	0.25
7	As on 31-03-2017 (RE)	6,081.43	26,883.82	0.23
8	As on 31-03-2018	6,081.43	27,930.12	0.22

* Loans are excluding working capital loans

Note :-

The decline in ratio of equity & loan is due to UDAY scheme as the loans have been converted from working capital loans to State Govt. loans & DISCOM bonds.

PUNJAB STATE POWER CORPORATION LIMITED
 ANNUAL REVENUE REQUIREMENT UP TO THE YEAR 201-18
 INFORMATION REGARDING REVENUE FROM OTHER BUSINESS

FORMAT 31

(Rs. In Crores)

Sr. No.	Particulars	FY 2015-16 (Actual)	FY 2016-17 H1 (Provisional)	FY 2017-18 H1 (Actual)	FY 2017-18 H2 (Estimate)	FY 2017-18 (Revised Estimates)	FY 2018-19 (Revised Estimate)
1	Total Revenue from Other Business						
2	Income from Other Business to be considered for Licensed Business as per Regulation	NIL	NIL				

PUNJAB STATE POWER CORPORATION LIMITED
 ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
 INFORMATION REGARDING BAD AND DOUBTFUL DEBTS

FORMAT 32

Sr. No.	Particulars	FY 2015-16 (Actual)	FY 2017-18 H1 (Actual)	FY 2017-18 H2 (Estimate)	FY 2017-18 (Revised Estimates)	FY 2018-19 (Revised Estimates)
1	Materials cost variance					
2	Bad & doubtful debts written off					
3	Provision for Bad & doubtful debts					
4	Total					
5	Miscellaneous losses and write offs					
6	Sundry expenses- Intangible assets written off (Pre-incorporation expenses)					
7	Extra Ordinary Debit					
8	Total					
9	loss on sale of Assets-Plant & Machinery					
10	Grand Total					

Note: Information will be supplied at the time of true up for the respective years.

JA

PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
INFORMATION REGARDING WORKING CAPITAL AS PER PSERC REGULATIONS
FORMAT 33

(Rs. in crores)

Sr. No.	Particulars	FY 2016-17 (Provisional)	FY 2017-18 (Revised Estimates)	FY 2018-19 (projection)
1	Two month Fuel Cost		266.89	276.93
2	One month Employee Cost			
3	One month Repair and Maintenance Expenses		104.60	108.10
4	One month Administration and General Expenses			
5	Two month Receivables		709.63	730.23
6	Maintenance spares @ 15% of O&M expenses		188.28	194.59
7	Total requirement for working capital		1,269.40	1,309.85
8	Interest Rate		11.09%	11.11%
9	Interest	572.38	140.78	145.55

Note: - This information for compliance of format.
 For FY 2016-17 interest on working capital as per format 16
 For FY 2017-18 and FY 2018-19 interest on working capital shown for generation business only.



PUNJAB STATE POWER CORPORATION LIMITED
ANNUAL REVENUE REQUIREMENT UP TO THE YEAR FY 2018-19
STATEMENT SHOWING AMOUNT OF GOVERNMENT SUBSIDY DUE AND RECEIVED FOR FY 2016-17
(Provisional)
FORMAT 35-A

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				
(i) AP Consumers	12,79,233	12,008.98	5,500.11	9.00	5,509.11	-	5,509.11		
(ii) Scheduled Castes DS Consumers	1496648	2,297.15	1,179.93	16.75	1,196.68	-	1,196.68		
(iii) Non- SC BPL DS Consumers	100932	146.42	74.60	1.27	75.87	-	75.87		
(iv) Backward class DS Consumer	61095		6.95	0.17	7.12	-	7.12		
(v) Dairy, fish, Goat and pig farming	898		1.08	-	1.08	-	1.08		
(vi) Mushroom Farming	36		0.58	-	0.58	-	0.58		
(vii) SP (Small Power) Consumer	95131		30.96	7.53	38.49	-	38.49	5,600.70	-1,231.75
(viii) Gaushala Consumers	306		2.39	0.01	2.40	-	2.40		
(ix) Additional subsidy on a/c of FCA for AP Consumers.			1.12		1.12	-	1.12		
Total (Cr.)			6,797.72	34.73	6,832.45	-	6,832.45	5,600.70	-1,231.75

Consumer Category	FY 2017-18				FY 2018-19			
	No. of Consumers	Consumption (MU)	Amount of subsidy due from GOP (Rs. Crore)	Amount of subsidy due from GOP (Rs. Crore) Single Part	No. of Consumers	Consumption (MU)	Amount of subsidy due from GOP (Rs. Crore)	Amount of subsidy due from GOP (Rs. Crore) Single Part
AP Consumers	1300465	12,355.83	6,252.05	6,252.05	1352483	13,313.88	6,736.82	
Scheduled Castes DS	161972	2,609.40	1,359.34	1,359.34	1752913	2,964.09	1,544.12	
Non- SC BPL DS	105136	163.48	84.71	84.71	109515	182.54	91.58	
BC- DS		-	707.98	707.98		-	707.98	
SP	98630	1,007.93	106.52	106.52	99616	1,035.80	49.72	
Freedom Fighter		-	0.83	0.83		-	0.83	
Total			8,511.44	8,511.44			9,134.05	

Note: PSPCL has not projected any subsidy on accounts of MS and LS categories. Subsidy for BC-DS consumers as approved by PSERC

SECTION-V - RESPONSE TO DIRACTIVE



Progress/ status report of compliance of directives to be updated ending June 2017.

Sr.No.	Issues	PSPCL Directives for FY 2015-16		PSPCL Comments & Directives for FY 2016-17		Progress of compliance of Directives ending 06/ 2017																													
		T&D Loss Reduction	Shifting of meters outside consumer premises	(i) Shifting of meters outside consumer premises	(ii) Shifting of meters outside consumer premises	Total Meters Covered Under The Scheme (In Lacs)	Total Meter Shifted Upto 06/2017 (In Lacs)	Balance Meters To Be Shifted (In Lacs)	Target for Shifting of balance meters (In lacs) (During 2017-18)	Remarks																									
8.1	T&D Loss Reduction	<p>(i) Shifting of meters outside consumer premises</p> <p>The Commission in the Tariff Order for FY 2015-16, directed PSPCL to ensure shifting of all meters under non-APDRP areas by 31.3.2015 but still 5.1 lac meters are yet to be shifted. Out of 5.1 lac meters, only 1.74 lac meters are under dispute. The target for shifting meters under Phase II has now been postponed to June 2016. Similarly, the target for shifting all balance meters departmentally was March 2015 but still 1.66 lac meters are pending. PSPCL is directed to complete the work of shifting of meters under Phase II by July 2016 and in house meters by Dec. 2016. Although the target for shifting of meters under R-APDRP was July 2015 but still 3.46 lac meters are pending. MoP has granted extension for completion of R-APDRP Part B projects by 31.3.2017. PSPCL is directed to complete the job within stipulated time.</p> <p>PSPCL is directed to allocate a unique identification code for meters installed outside the consumer premises and those still inside the premises to accurately assess the progress of meter shifting.</p> <p><u>Third Party Audit:</u></p> <p>PSPCL is further directed to submit the report of 3rd party audit as per the Commission's Order dated 28.7.2014 in petition no.15 of 2014 read with Order dated 25.2.2015 in</p>	<p>(i) Shifting of meters outside consumer premises</p> <p>In the Tariff Order for FY 2016-17, the Commission directed PSPCL to shift all meters of Non-APDRP areas under Phase II by July 2016 & In-house by Dec. 2016. However, PSPCL could shift only 35000 meters under Phase II and just 5000 meters departmentally during FY 2016-17. Thus 4.06 lac meters are yet to be shifted in Non-APDRP areas. PSPCL in its status report ending Dec. 2016 assured that all pending meters under non-APDRP areas shall be shifted by March 2017. The repeated failure of PSPCL to achieve its own targets is one of the reasons for non-achievement of T&D loss reduction targets fixed by the Commission.</p> <p>Under R-APDRP towns, PSPCL was directed to complete shifting of meters by March, 2017 which is the date fixed by MoP/Gol for completion of works under R-APDRP. However, there are still 1.92 lac meters pending which the licensee intends to complete during FY 2017-18. Any loss of grant due to delay in completion of R-APDRP works shall be treated as gross violation of the directions of the Commission and shall not be allowed as pass through in the ARR. In addition, penalty under section 142 of the Act shall also be imposed.</p>	<table border="1"> <thead> <tr> <th>Scheme</th> <th>Total Meters Covered Under The Scheme (In Lacs)</th> <th>Total Meter Shifted Upto 06/2017 (In Lacs)</th> <th>Balance Meters To Be Shifted (In Lacs)</th> <th>Target for Shifting of balance meters (In lacs) (During 2017-18)</th> </tr> </thead> <tbody> <tr> <td>Phase-I</td> <td>19.87</td> <td>19.87</td> <td>0</td> <td>0</td> </tr> <tr> <td>Non-APDRP</td> <td>11.81</td> <td>10.01</td> <td>1.71</td> <td>1.71</td> </tr> <tr> <td>In-house</td> <td>5.78</td> <td>3.91</td> <td>1.87</td> <td>1.87</td> </tr> <tr> <td>R-APDRP (Part-B)</td> <td>11.49</td> <td>9.80</td> <td>1.69</td> <td>1.69</td> </tr> <tr> <td>Total</td> <td>48.95</td> <td>43.68</td> <td>5.27</td> <td>5.27</td> </tr> </tbody> </table>	Scheme	Total Meters Covered Under The Scheme (In Lacs)	Total Meter Shifted Upto 06/2017 (In Lacs)	Balance Meters To Be Shifted (In Lacs)	Target for Shifting of balance meters (In lacs) (During 2017-18)	Phase-I	19.87	19.87	0	0	Non-APDRP	11.81	10.01	1.71	1.71	In-house	5.78	3.91	1.87	1.87	R-APDRP (Part-B)	11.49	9.80	1.69	1.69	Total	48.95	43.68	5.27	5.27	<p>Scheme wise detail of meter shifted and balance meters required to be shifted ending June, 2017 is as under :-</p>
Scheme	Total Meters Covered Under The Scheme (In Lacs)	Total Meter Shifted Upto 06/2017 (In Lacs)	Balance Meters To Be Shifted (In Lacs)	Target for Shifting of balance meters (In lacs) (During 2017-18)																															
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R-APDRP (Part-B)	11.49	9.80	1.69	1.69																															
Total	48.95	43.68	5.27	5.27																															
<p>Under phase-II, 1.57 lac connections are disputed including that of M/s Jindal Traders, Barnata (which is under court case).</p>																																			

petition no. 8 of 2015.

	<p>(ii) Replacement of Electro-mechanical (E/M) meters:</p> <p>a) 3-ϕ meters: SP/DS/NRS</p> <p>During processing of ARR for FY 2014-15, PSPCL assured that 6699 number 3-ϕ electro-mechanical meters of SP/DS/NRS categories shall be replaced by 9/2014 but now the target date has again been revised to 9/2015. PSPCL has failed time & again to adhere to the timelines committed by the utility to the Commission. PSPCL is directed to get the job executed on top priority.</p> <p>b) 1-ϕ meters (DS/NRS):</p> <p>In the Tariff Order for FY 2013-14, PSPCL was</p>	<p>PSPCL is directed to allocate a unique identification code for meters installed outside the consumer premises and those still inside the premises to accurately assess the progress of meter shifting.</p> <p>The Commission vide Order dated 28.7.2014 in petition no. 35 of 2014, while allowing capital expenditure for shifting of meters under non-APDRP areas, directed PSPCL to get 3rd party audit carried out on all the loss reduction schemes to verify/quantify the benefits. On the specific request of PSPCL, the Commission vide Order dated 25.02.2015 in petition no. 8 of 2015 allowed PSPCL to conduct third party audit on at least 25% of the feeders. The Commission again lowered the sample size to 10% vide Order dated 26.05.2015 in petition no. 25 of 2015 and directed the utility to allot work for 3rd party audit of 10% feeders by August, 2015.</p> <p>The Commission observes with concern that PSPCL could award the work only in April 2016. The list of 10% randomly selected feeders has already been approved by the Commission and PSPCL is directed to ensure completion of work as per schedule and submit preliminary report to the Commission along with its observations/objection before acceptance of final report of 3rd party audit.</p> <p>a) 3-ϕ meters: SP/DS/NRS</p> <p>PSPCL assured to replace all three phase electro-mechanical meters by 9/2014 which was extended to 9/2015. However PSPCL has now submitted that 6093 meters are yet to be replaced. Moreover, no target date for completing replacement of these meters has been intimated. PSPCL is directed to ensure replacement of all three phase meters of DS/NRS/SP category consumers by Dec. 2015.</p> <p>b) 1-ϕ meters (DS/NRS):</p> <p>The Commission notes with serious concern that against a</p>	<p>There is already a provision existing in the billing software of SAP and Non-SAP system for having a unique identification code for meters installed outside or inside the consumer premises.</p> <p>Work order no.84 dated 26.04.2016 was placed upon M/s Wapcos Limited, New Delhi, Hon'ble PSERC has randomly selected 126 Nos. 11 KV Feeders. List was forwarded to M/s Wapcos Limited, New Delhi for further necessary action. During evaluation, M/s Wapcos Observed that evaluation of 73 no. feeders, where feeder bifurcation has taken place, is not possible. Accordingly, matter regarding re-sampling of feeders (where work of evaluation has not been taken in hand due to bifurcation of feeders) was taken up with Hon'ble PSERC and list of re-sampled 76 nos. feeders has already been given to M/s Wapcos vide amendment no.-1 dated 5-4-2017 for further necessary action. After receipt of complete evaluation reports from M/s Wapcos, the same shall be submitted to Hon'ble PSERC.</p> <p>a) 3-ϕ meters: SP/DS/NRS</p> <p>There are 103 No. electromechanical meters balance as on 30.06.2017. These will be replaced shortly.</p> <p>b) 1-ϕ meters (DS/NRS)</p>
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<p>As on 30.06.2017, there are balance 6.84 Lac. single phase electro-mechanical meters are pending to be replaced.</p>	<p>revised target of completion of replacing all 1-φ meters under R-APDRP areas by July 2015, there are still 2,83,538 meters pending for replacement. Only 42049 Nos. 1-φ meters of APDRP areas have been replaced in last one year.</p> <p>PSPCL was directed to ensure replacement of all E/M single phase meters in Non-APDRP areas by March 2016 but there are still 5,68,562 meters pending for replacement as on 31.03.2016. Against a self committed target of replacement of 3 lac meters every year, PSPCL could replace only 1.68 lac meters during FY 2015-16.</p> <p>The Commission observes that PSPCL has not committed any time frame to complete the job and has rather left it to the contractors.</p> <p>The Commission directs PSPCL to ensure replacement of all 1-φ electromechanical meters by March 2017.</p> <p>PSPCL is directed to allocate a unique identification code for electro-mechanical and electronic meters in order to monitor the progress of replacement of electro-mechanical meters in effective manner.</p>												
<table border="1"> <thead> <tr> <th>Detail</th> <th>APDRP area</th> <th>Non-APDRP area</th> </tr> </thead> <tbody> <tr> <td>1 phase electromechanical meters balance as on 31.03.17</td> <td>291648</td> <td>411392</td> </tr> <tr> <td>Meters replaced upto 30.06.2017.</td> <td>10711</td> <td>8447</td> </tr> <tr> <td>Balance Target for 2017-18</td> <td>280937</td> <td>402945</td> </tr> </tbody> </table>	Detail	APDRP area	Non-APDRP area	1 phase electromechanical meters balance as on 31.03.17	291648	411392	Meters replaced upto 30.06.2017.	10711	8447	Balance Target for 2017-18	280937	402945	<p>The Commission observes that PSPCL has not committed any time frame to complete the job and has rather left it to the contractors.</p> <p>The Commission directs PSPCL to ensure replacement of all 1-φ electromechanical meters by March 2017.</p> <p>PSPCL is directed to allocate a unique identification code for electro-mechanical and electronic meters in order to monitor the progress of replacement of electro-mechanical meters in effective manner.</p>
Detail	APDRP area	Non-APDRP area											
1 phase electromechanical meters balance as on 31.03.17	291648	411392											
Meters replaced upto 30.06.2017.	10711	8447											
Balance Target for 2017-18	280937	402945											
<p>There is already a provision existing in the billing software of SAP and Non-SAP system for having a unique identification code for electro-mechanical and electronic meters.</p>	<p>Key Exception Report:</p> <p>As per key exception report ending 4th cycle of 2014-15, there are 12847 burnt meters pending for replacement out of which 1753 number were reported burnt prior to June 2014. Similarly there are 40525 defective meters out of which 5130 meters were reported defective prior to June 2014. This is a serious violation of Standard of Performance and Commission directs PSPCL to ensure adherence to the minimum Standards of Performance mentioned in Annexure-1 of Supply Code 2014.</p>												
<p>Monthly Review meetings are being taken by Director/D for monitoring of Key Exception and other Distribution Parameters and all field officers are directed to replace all burnt/defective meters as per timeframe given in SOP.</p>	<p>(iii) Conversion of LVDS to HVDS</p> <p>The directive in the Tariff Order for FY 2014-15 was to convert atleast 33% LVDS tubewell consumers into Less LT HVDS per year so as to achieve the target by Mar, 2017.</p> <p>During processing of ARR for FY 2013-14, PSPCL proposed that due to technical constraints, the utility shall be implementing</p>												
<p>Key exceptions report as on 24-08-2017 has been sent to PSERC vide Memo No. 2261 dated 01/09/2017.</p>	<p>In the ARR for FY 2013-14, PSPCL pointed out that due to high cost involved in adopting HVDS, the utility will adopt less LT HVDS. In the T.O. 2014-15, PSPCL was directed to submit roadmap to convert at least 33% LVDS AP consumers to less LT HVDS per year within 3 months of the issuance of the Tariff Order. However, PSPCL has not taken any action to implement the directions of the Commission</p>												
<p>Real time reports are already available for 47 no. APDRP towns at BI portal.</p>	<p>"PSPCL is further directed to ensure submission of Management Information Report (MIR) for each quarter immediately after its compilation".</p>												
<p>Management Information Report (MIR) for each quarter is being submitted to PSERC.</p>	<p>As per methodology duly approved by PSERC earlier the AP losses were being calculated division wise based upon sample meters. Now these are being computed as per new directions given by Commission in 2016-17 with losses at 10.14%.</p>												

	<p>Less LT HVDS instead of HVDS but no progress has been reported even under this amended scheme. The plea that PSPCL is identifying high loss feeders is not tenable since this information is readily available with the utility. The adoption of HVDS or less LT HVDS is a universally proven method of loss reduction which needs to be replicated with suitable amendments as per ground realities. PSPCL is directed to submit roadmap in this regard within 3 months of the issuance of this Tariff Order.</p>	<p>As per PSPCL's own admission, the average technical losses on all the AP feeders may be in the vicinity of 14 to 15% and in case unauthorised running of agriculture motors is taken into account, the T&D loss level in the agriculture sector may be in the range of 18 to 20 %. High loss feeders need to be converted in to HVDS in a time bound manner. PSPCL is directed to submit list of AP feeders with T&D losses above 16% within one month of issue of this Tariff Order.</p>
	<ol style="list-style-type: none"> 1. PSPCL is directed to submit the list of AP feeders with T&D losses above 16% within one month of issue of this T.O. 2. PSPCL is directed to intimate the total number of AP connections as on March, 2016 and number of AP connections catered on HVDS. The number of 11 kv HVDS AP feeders (having all AP connections on HVDS) may also be intimated. 	<p>No. of AP connections as on 31.03.2017 = 13.61 lac No. of AP catered on HVDS = 6.11 lac</p> <p>No. of AP connections as on 30.06.2017 = 13.66 lac No. of AP catered on HVDS = 6.16 lac</p>
	<p>d) Reduction in Transformer damage rate: There were over 42800 overloaded transformers ending March 2014 but PSPCL has not submitted any status of either overloaded transformers or damage rate during 2014-15. PSPCL is directed to supply the capacity wise number of overloaded transformers and the damage rate during 2014-15 along with roadmap for de-loading before start of paddy season within a month of issuance of this Tariff Order.</p>	<p>d) Reduction in Transformer damage rate: The Commission notes that damage rate of 25/63/100 KVA transformers are on higher side. In a separate submission, PSPCL has intimated that during FY 2015-16 (upto Dec. 2015), the damage rate was 6.01%. PSPCL must ensure de-loading of balance Distribution Transformers by July 2016 and ensure reduction in damage to DTs.</p>
	<p>Damage rate of DT's</p>	<p>Upto 06-2016 2.62</p> <p>Upto 06-2017 2.45</p> <p>There are 8078 Nos. small Capacity DTs and 320 Nos. Large capacity DTs overloaded as on 30.06.2017, due to extension in load by AP consumers and natural growth of general consumers, which are being deloaded on priority.</p>

<p>3.2</p>	<p>Implementation of R-APDRP Scheme:</p> <p>R-APDRP (Part A): The Commission directs 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.</p>	<p>The Commission notes that all 47 towns have been declared 'GO LIVE' by April 2015 but correct data of not even a single town has been shared with the Commission till date. PSPCL should certify that correct data is being received w.r.t. all 47 towns and IT scheme of all stations is working perfectly without any technical or commercial problem.</p> <p>PSPCL is directed to share regularly the correct data of all 47 towns with the Commission so as to reach before 10th of every month starting from July 2016.</p>	<p>All the towns under R-APDRP Part-A has been declared GO-live in April 2015.</p>																																										
	<p>R-APDRP (Part B): The progress of work under R-APDRP appears to be behind its schedule. The Commission reiterates its stand that R-APDRP schemes be implemented by PSPCL in target time frame work as given by MOP/GOV (PFC) so that 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.</p>	<p>The Commission notes with concern the slow progress of execution of R-APDRP Part B works. Commission reiterates its direction that R-APDRP schemes should be implemented by PSPCL in the time frame fixed by MOP/GOV (PFC) so that 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.</p>	<p>The execution of work awarded to various firms is in progress.</p> <p>Firm-wise progress of shifting of meters [R-APDRP (Urban Area)] is as under :-</p> <table border="1" data-bbox="702 134 1109 862"> <thead> <tr> <th>Sl. No.</th> <th>Name of Scheme</th> <th>Total Scope</th> <th>Shifted up to 31.06.17</th> <th>Balance</th> <th>Target Date during 2016-17</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>L&T</td> <td>262167</td> <td>262167</td> <td>0</td> <td>0</td> </tr> <tr> <td>2.</td> <td>Godrej</td> <td>205378</td> <td>198310</td> <td>7068</td> <td>7068</td> </tr> <tr> <td>3.</td> <td>15 No. Towns</td> <td>544046</td> <td>481335</td> <td>82711</td> <td>82711</td> </tr> <tr> <td>4.</td> <td>M/s Nucon switchgear Ltd. (16 No. Towns)</td> <td>65591</td> <td>43285</td> <td>22306</td> <td>22306</td> </tr> <tr> <td>5.</td> <td>M/s Shreem Electric Ltd. (6 No. Towns)</td> <td>72538</td> <td>15190</td> <td>57348</td> <td>57348</td> </tr> <tr> <td></td> <td>Total</td> <td>1149720</td> <td>980287</td> <td>169433</td> <td>169433</td> </tr> </tbody> </table>	Sl. No.	Name of Scheme	Total Scope	Shifted up to 31.06.17	Balance	Target Date during 2016-17	1.	L&T	262167	262167	0	0	2.	Godrej	205378	198310	7068	7068	3.	15 No. Towns	544046	481335	82711	82711	4.	M/s Nucon switchgear Ltd. (16 No. Towns)	65591	43285	22306	22306	5.	M/s Shreem Electric Ltd. (6 No. Towns)	72538	15190	57348	57348		Total	1149720	980287	169433	169433
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<p>switchgear Ltd. M/s Shreem Electric Ltd. Work of Patiala town already completed departmentally.</p>	<p>1 No. 6 No. 30.26%</p>	<p>Reasons have already been forward to PSERC. Presently all the reports are available online on PSPCL website (www.pspcl.in) in the "Distribution" link under "PDS" sub link.</p>
<p>The Commission observes that despite declaring all 47 towns 'GO LIVE' in April 2015, the data could not stabilize even by March, 2016. PSPCL has been reiterating the plea since June 2015 that it would take 5-6 months to stabilize & check the correctness of data but could not ensure the same. PSPCL is directed to give reasons for non stabilization of the data of all the towns declared "GO LIVE". Under UDAY scheme, PSPCL is required to implement MIS for tracking meter replacement, loss reduction & day to day progress. The Commission directs PSPCL to share these reports within one month of issue of Tariff Order for FY 2016-17.</p>	<p>The Commission observes that the energy report of Feb., 2016 supplied by PSPCL shows alarmingly low billing efficiency, collection efficiency and extremely high AT&C losses for 44 out of 47 towns. Only Phagwara, Mohali and Gobindgarh have AT&C losses less than 15% (11.55%, 14.76% and 6.95% respectively). It has also been observed that as compared to baseline data, the AT&C losses of many towns have increased. The Commission directs PSPCL to supply the energy Audit Reports of all 47 towns on monthly basis.</p>	<p>Reports are available online on PSPCL website (www.pspcl.in) in "Distribution" link under "PDS" sub link. The reports are updated on last working day of each month. The AT&C Losses wherever recorded higher than baseline losses are mainly due to improper tagging of consumers which is being corrected. However, consolidated losses of Subdivisions/Divisions are within limit.</p>
<p>Management Information System (MIS): In the status report ending March 2014, PSPCL assured that project will be implemented by 31.05.2014 but now the completion date has been revised to 31.03.2015. PSPCL is directed to submit the status within one month of the issuance of this Tariff Order.</p>	<p>Though 24 No. towns have been declared "GO LIVE" by 12/2014 but Energy Audit report of not even a single town has been shared with the Commission by PSPCL despite directions to do so. As such, authenticity/efficacy of the data cannot be commented upon. The Commission directs PSPCL once again to submit Energy Audit report of all "GO LIVE" Towns within a month of issuance of this Tariff Order.</p>	<p>i) Consumer indexing of all feeders of 47 towns has already been completed under R-APDRP Part-A scheme. ii) Indexing of 2090 Nos. rural feeders has been completed out of total nos. of 7490 Feeders. iii) Consumer indexing was altered due to change in feeder profiles while executing of works under various on-going schemes. iv) Sub division wise/Division wise audit is already being done under PSPCL.</p>
<p>Energy Audit</p>	<p>As per MoU signed under UDAY scheme, PSPCL is to complete energy audit up to 11 kv level in rural areas by Sept. 2016. PSPCL is directed to ensure that consumer indexing of all feeders is updated before Sept. 2016 and a certificate to this effect must be submitted to the Commission. The Commission directs PSPCL to supply Energy Audit Reports of all 11 kv feeders w.e.f. Oct. 2015.</p>	<p>As per MoU signed under UDAY scheme, PSPCL is to complete energy audit up to 11 kv level in rural areas by Sept. 2016. PSPCL is directed to ensure that consumer indexing of all feeders is updated before Sept. 2016 and a certificate to this effect must be submitted to the Commission. The Commission directs PSPCL to supply Energy Audit Reports of all 11 kv feeders w.e.f. Oct. 2015.</p>

	<p>Energy Audit of Thermal Generating Stations:</p> <p>The Energy Audit at PSPCL's thermal plants & other installations be continued as a regular exercise. Timely action should be taken on the suggestions/recommendations of the Energy Auditors.</p>	<p>The Commission notes with concern that short, medium and long term measures suggested by CPRI for GGSSTP Ropar to bring heat rate from 2621 Kcal/kwh to 2529 Kcal/kwh have not been implemented. The energy audit reports of all thermal units be shared with the Commission within two months of issue of T.O. 2016-17.</p> <p>Timely action on recommendations/ suggestions in Energy Audit reports be ensured.</p>	<p>GNDTP, Bathinda:</p> <p>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 June 2017 is as per Annexure-A. Energy Audit of unit-3&4 was not carried-out due to Renovation & Modernization works.</p> <p>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 27.08.2014 after its R&M works.</p> <p>Further as per BEE notification Energy Audit of all GNDTP units got carried out from M/s Siri Exergy & Carbon Advisory Services (P) Ltd. Hyderabad. Report of the same has been sent to BEE, New Delhi & PEDA, Chandigarh.</p> <p>GCSSTP Ropar:</p> <p>The status of implementation of recommendations of energy audit is attached as Annexure-B.</p> <p>GHTP Lehra Mohabbat:</p> <p>The Work Order No.04/2014/CE-28 dt. 28.3.14 was placed upon M/s National Productivity Council Hyderabad for conducting Energy Audit of all the 4 units of GHTP. The Energy Audit has been completed and final report on Energy Audit has been submitted to Punjab Energy Development Agency (PEDA), Chandigarh and Bureau of Energy Efficiency (BEE), New Delhi. Also, copy of energy audit report has been forwarded to PSERC. Steps are being taken for implementation of recommendation of energy audit report.</p>																								
	<p>The Commission notes the action taken by PSPCL. The status of replacement of 132 kv CTs/PTs at MHP should be submitted within one month of the issue of this Tariff Order.</p> <p>In the Tariff Order for FY 2015-16, it has been recorded that two new transformers are being procured to spare existing T/Fs for overhauling. No progress in this regard has been submitted. PSPCL is directed to submit the latest status in this regard.</p>	<p>Energy Audit of Hydro Generating Stations:</p> <p>The Commission notes the compliance. The status of replacement of 1-φ GTs along with energisation of new transformers at Shanan be brought to the notice of Commission.</p>	<p>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. Detail of auxiliary consumption and G.T. Losses in respect of all Hydel Projects of PSPCL ending June, 2017 (Enclosed Annexure-C) is tabulated below:</p> <table border="1" data-bbox="271 1276 438 1691"> <thead> <tr> <th>S. No</th> <th>Name of Plant</th> <th>Aux. Cons. (%)</th> <th>GT Losses (%)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>RSD</td> <td>0.22</td> <td>0.11</td> </tr> <tr> <td>2</td> <td>ASHP</td> <td>0.089</td> <td>0.153</td> </tr> <tr> <td>3</td> <td>UBDC</td> <td>0.22</td> <td>0.32</td> </tr> <tr> <td>4</td> <td>MHP</td> <td>0.239</td> <td>1.293</td> </tr> <tr> <td>5</td> <td>Shanan</td> <td>0.02</td> <td>0.90</td> </tr> </tbody> </table>	S. No	Name of Plant	Aux. Cons. (%)	GT Losses (%)	1	RSD	0.22	0.11	2	ASHP	0.089	0.153	3	UBDC	0.22	0.32	4	MHP	0.239	1.293	5	Shanan	0.02	0.90
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<p>Remarks for :</p> <p>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 (size 500 mm² at PH1&2 and 800 mm² at PH 3 & 4) for each phase i.e. total 6 no. Aluminum cable have run load with</p>																											

	<p>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. P.O. for procurement of 2 No. 20MVA new transformers has been placed upon M/s BBL.</p> <p>Work for replacement of 132 KV CT/PTs as per State grid Code is in progress.</p> <p>2 Above Sr. No.5 Shanan :- GT losses are higher due to installation of single phase transformers instead of 3-phase T/Fs due to space constrains. These T/Fs are about 30 years old, have iron core contributing to higher GT losses. These need replacement for which P.O. for procurement of new 7 No. 12MVA and 4 No. 19 MVA single phase GTs have been placed upon M/s BBL.</p>	<p>Latest Status of Procurement of Transformers:-</p> <ol style="list-style-type: none"> The purchase order cum contract agreement no 38/HFs/ED.III/M-53 dated 11.01.2017 has been placed on M/s BBL, N.Delhi for 4 nos. 20 MVA, 11/132 KV Generator Transformers (2 no. MHP & 2 no. for UBDC). Final inspection is in progress against P.O. No 39/HFs/ED-4/S-343/Vo.II dt.12.01.2017 placed on M/s BBL, N. Delhi for 7 no. Single phase 12 MVA 11/132/N3 KV Generator Transformers for Shanan HEP, Joginder nagar. For replacement of 220KV/132KV/66KV CTs/PTs as required under grid code, the tenders have been opened and are under technical & commercial evaluation. <p>In this regard, it is brought out that Hon'ble Commission has approved the draft proposal of DELP Pilot project in principle subject to submission of DPR with cost benefit analysis based on actual data of PSPCL for approval of the commission before undertaking or signing agreement for implementation of the project in Punjab.</p> <p>In this context, M/s EESL has submitted a proposal regarding implementation of UJALA program) for the state of Punjab. In the proposal of UJALA scheme, M/s EESL offer 9 watt LED bulbs, 20 watt LED tube-lights & 50 watt energy efficient fans to be distributed under national UJALA programme in the state of Punjab.</p> <p>Now, in latest, the UJALA scheme has been launched by Sh Rana Gurjit Singh, Minister of Irrigation & Power Punjab and by Sh. A.Venu Parsad, Principal Secretary/Power Govt. of Punjab on dated 24.05.2016 at Mohali. Under this scheme, M/s. EESL is distributing 9 Watt LED bulbs at price of Rs. 65/- with warranty period of 3 years. 20 Watt LED tubelights at price of Rs. 230/- with warranty period of 3 years & 50 Watt BEE 5 star rated ceiling fans at the price of Rs. 1150/- with warrant period of 2.5 years in upfront mode only. On dated 24.05.2016 UJALA scheme has been launched in Mohali and after this the UJALA project was launched in Amritsar on dated 22.06.2017 and the scheme will be launched in other zones of Punjab in phase manner through M/s. EESL</p>
		<p>The Commission notes that despite in principle approval to replace 16 lac ICLs with LEDs under DELP Scheme, no tangible progress has been made. The Commission directs PSPCL to implement this project on top priority after following the procedure specified in DSM regulations.</p> <p>Under UDAY scheme, PSPCL is required to provide LEDs to all domestic and other categories of consumers under DELP through EESL. PSPCL is directed to submit its roadmap and implementation schedule to fulfill its obligation under UDAY.</p>
		<p>1) Bachat Lamp Yojna: The only step taken by PSPCL during FY 2014-15 is to sign MoU with BEE for formulation of DSM plan and frame a proposal to provide LEDs to consumers through EESL. The Commission has already approved in-principle the proposal of PSPCL to replace 16 lac ICLs with LEDs under DELP scheme through EESL subject to formal approval of the DPR along with cost-benefit analysis. The Commission directs PSPCL to implement the project on top priority after following the procedure specified in DSM regulations.</p>
8.4	Demand Side Management Energy Conservation	

<p>iii. Agricultural DSM: During processing of ARR for FY 2014-15, PSPCL informed that after failure to execute Ag-DSM project on selected 6 number feeders, fresh proposal to execute a pilot project on 2500 number agriculture pumpsets through EESL has been initiated. However, it appears that this proposal has also been shelved by PSPCL. The only step taken by PSPCL during FY 2014-15 is to sign MoU with BEE on 12.06.2014 under Capacity Building Programme. Different studies have established that there is scope of 32% to 37% energy saving in agriculture sector by replacing inefficient motors with star rated energy efficient motors. Despite repeated directions by the Commission to undertake agriculture DSM pilot projects to demonstrate energy saving potential to the stakeholders, PSPCL has failed to implement the directive. PSPCL is directed to immediately take up some Agriculture DSM pilot projects for replacing in-efficient motors with efficient/star rated motors and submit the action taken report within 3 months of the issuance of this Tariff Order.</p>	<p>PSPCL has repeatedly been directed to execute a pilot project of Agricultural DSM, as a huge energy saving potential by replacing inefficient motors exist in the Agriculture Sector but PSPCL has totally failed to take any workable initiative to take up Agricultural DSM project. During meeting with PSPCL officers on 29.06.2016, it was informed that a demonstrative pilot project for replacement of about 100 existing pumpsets fed from 11 kv Chattepeer feeder under Nabha Divn. to ascertain energy saving potential is being executed through EESL. In case, Energy saving of 30% or more is achieved then project to be replaced 1 lac more pumpsets shall be taken in hand. The PSPCL is directed to share the results of pilot project with the Commission within 15 days of its completion. Under UDAY scheme, PSPCL is to replace 10% of the agriculture pumpsets with energy efficient pumpsets by March 2019. The Commission directs PSPCL to submit its implementation schedule within 3 months of issue of this Tariff order. PSPCL should also take up other energy saving projects such as replacement of inefficient air conditioners, air coolers, fans etc. under intimation to the Commission.</p>	<p>To implement various energy efficiency programs in the state of Punjab, Govt. of Punjab and PSPCL identified the areas of south zone predominantly having 1 Lac nos. of inefficient submersible Pumps to replace inefficient pumps with BEE 5 star rated motors. Accordingly, it was decided to implement a demonstrative pilot project of Ag-DSM for approx. 100 no. of pump at Chattepeer feeder of 66 KV Achal S/S under Nabha Division, circle Paliatala district having 108 no. of pumps to find out the actual energy saving potential and consider it deemed for rolling out the large scale implementation of Ag-DSM project in the State of Punjab. Accordingly, PSPCL has already submitted the data base of all the 108 no. of consumers of selected feeder and allowed M/s EESL to execute the Ag-DSM demonstrative the Pilot project at 11 KV Chattepeer feeder of 66 KV Achal S/S under Nabha Division in the state of Punjab. M/s EESL has started the execution of Ag-DSM demonstrative pilot project on the selected chattepeer feeder. Out of 108 nos. of AP consumers, 14 nos. of Pump sets have been replaced so far. Later, M/s EESL changed the brand of motors to get more efficiency but it was objected by the farmers due to lesser discharge for same rating of motor. This demonstrative pilot project is now held up at M/s EESL end.</p>
<p>iv. DSM Plan / Capacity Building Programme: In the Tariff order for FY 2014-15, the Commission approved a DSM fund of ₹40.76 crore as sought by PSPCL but PSPCL has failed to utilise this fund. PSPCL has failed to achieve energy saving target of 500 MU fixed by the Commission. The energy saving target of 500 MU fixed for FY 2014-15 is carried forward to FY 2015-16 and PSPCL is directed to achieve this target. However, the target may be reviewed after submission of load/market survey of consumers being carried by TERI.</p>	<p>The Commission observes that target of saving 500 MUs in FY 2014-15 (including target of 250 MUs of 2013-14) by implementing DSM Plan has not been achieved by PSPCL. The Commission directs PSPCL to share the report submitted by M/s EESL and also DSM action plan for various categories along with implementation schedule within one month of issue of T.O. for FY 2016-17.</p>	<p>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 and PSPCL has signed MoU with BEE under this programme. Further, PSPCL has signed MoU on dated 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. Under this programme BEE will provide full financial as well as technical support to PSPCL. In this context, as per the terms & 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 start the process, a meeting was organized with the representatives of EESL and TERI wherein TERI offered 1480 no. of consumers as sample size of survey and also PSPCL has provided required data of PSPCL to TERI. M/s TERI has completed the survey for all categories of Punjab and has submitted the survey report to PSPCL which the management of PSPCL found satisfactory and M/s EESL has been informed, to prepare Action plan for the state of Punjab under Capacity Building Programme. Further, M/s EESL has submitted the Action Plan in which it is observed that some important observations are required to be incorporated, so accordingly the same has been informed to M/s EESL and action plan is still awaited.</p>

8.5	<p>Agricultural consumption & Metering Plan</p>	<p>Agriculture Consumption</p> <p>a) Segregation of feeders</p> <p>b) The Commission repeatedly directed PSPCL to segregate AP load of Kandi area feeders fed from mixed feeders and in case segregation in some cases is not practicable, then in such cases all AP motors should be metered. The Electricity Act 2003 mandate 100% metering of all consumers. However, PSPCL in the last two years had not taken any step to implement the directions of the Commission. Under these circumstances, the Commission has no other option but to continue the present methodology to assess AP consumption of kandi area feeder.</p> <p>Government of India has now launched Deendayal Upadhaya Gram JyotiYojana which not only allow liberal funding including substantial portion of grant to segregate the mixed feeders and to achieve 100% metering. PSPCL is directed to utilise this scheme for segregation of mixed kandi area feeders and/or achieve 100% metering on these feeders during 2015-16.</p> <p>c) AMR of AP feeders</p> <p>The AMR project covering 500 grid Sub-stations was allotted in year 2008 and the scope of work was revised to cover 650 grid Sub-stations feeding 3850 AP feeders with completion date of 31.12.2012. Despite repeated directions by the Commission, PSPCL has failed to fully operationalise the project. During processing of ARR for FY 2012-13, it was informed by PSPCL that AMR compatible meters on 3239 AP feeders have been installed and AMR data will be available soon to the Commission for accurate assessment of AP consumption. However, PSPCL could submit correct data of only approximately 2000 AP feeders and that too for short duration. The submission of AMR data has been discontinued w.e.f March 2014. It was informed by PSPCL that due to some technical</p>	<p>a) The Commission notes the action</p> <p>b) The Commission directed PSPCL in the Tariff Order for FY 2015-16 to utilise DDUGJY funds to carry out feeder segregation and 100% metering but despite availability of liberal funding under a centrally sponsored scheme specifically designed for this purpose, PSPCL deliberately ignored the directions of the Commission and did not include these works in the DPRs submitted to REC.</p> <p>The Commission directs PSPCL to take up the matter with REC and revise the DPRs to include the work of segregation of kandi area feeders and to achieve 100% metering as per section 55 of the Act.</p> <p>c) The Commission notes with serious concern, the unprecedented long delay in operationalising the AMR of AP feeders despite huge investments made since 2008 on this project. Though, PSPCL has claimed (tending 09/2015) that 1740 numbers of AP feeders were being read from AMR, yet the AMR data of not even a single AP feeder has been shared with the Commission. The timelines of commissioning of AMR for all AP feeders be shared with the Commission within one month of issue of Tariff Order 2016-17.</p> <p>The Commission observes that PSPCL failed to anticipate the software compatibility of DLMS protocol meters for AMR of AP feeders with MODBUS protocol software of AMR system. The action for upgrading the system to read both MODBUS and DLMS protocols should have been taken before the introduction of DLMS protocol meters to avoid unnecessary delay to the already delayed AMR project.</p> <p>The Commission directs PSPCL to submit the AMR data of the AP feeders without any further delay and also ensure that all AP</p>	<p>b) 1. The matter was taken up by PSPCL with REC for funding from Ministry of Power/Govt. of India for incorporation of works relating to segregation of Kandi area feeders and 100% metering of AP consumers fed from feeders where segregation is not possible under DDUGJY in the state of Punjab. The monitoring committee of MoP/GoI in its meeting held on dated 20.12.16 have allowed PSPCL to utilize the un-utilized funds amounting to Rs. 149.01 Cr. of DDUGY (erstwhile RGGVY) Xth plan project for segregation of feeders/AP Consumers metering in Kandi area under DDUGJY having capital subsidy amounting to Rs. 134.11 Cr. (90% of Rs. 149.01 Cr. as per Xth plan funding scheme).</p> <p>2. The REC has sanctioned Rs. 150 Cr. Approx. for "Load Segregation/AP Consumer Metering of 276 no. mix load Kandi Area Feeders". Online DPRs for Kandi Area works has been submitted on 01.06.2017.</p> <p>3. Tender Enquiry No.51/CE/RE& APDRP/DDUGJY(Kandi Area)/2017-18 for execution of Rural electrification works of feeder segregation/AP consumers metering on 11KV mixed load feeder in Kandi areas of Punjab against 5 nos. Packages has been floated on 24.7.2017 through e-tendering on the web portal of PSPCL and techno-commercial bids will be opened on 1.08.2017.</p> <p>4. The expected schedule of processing of tenders for award of work orders is as under:-</p> <ul style="list-style-type: none"> • Submission of Proposal to PWC after opening of techno commercial bids-18.8.17 • Date of PWC meeting -21.8.17 • Price bid opening -23.8.17 • Submission of Proposal to PWC after opening of price bids -25.8.17 • Date of PWC meeting -28.8.17 • Submission of agenda for approval of WTDs for award of WOs -31.8.17 <p>c) The data of AP feeders of 375 Substation are being received under AMR project and 189 Substation are being received in RAPDRP Part A scheme. The data for the 109 no. Substation out of balance 335 substations is proposed to be covered under IT implementation for non-RAPDRP area under IPDS scheme and 226 no. S/Station are to be covered under 11KV rural feeder monitoring scheme of Rural Electrification</p>
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<p>snag in AMR Server and cancellation of the contract of AMR vendor due to deficient service, the data is not being captured by PSPCL. Thus PSPCL due to its inept handling of AMR project has squandered the benefits which could have accrued due to substantial investment made to operationalise the AMR project.</p> <p>The successful implementation of AMR project could have helped the Commission to estimate AP consumption more accurately to the satisfaction of all the stakeholders since no human interface in collection of the AMR data is involved. It is matter of concern that there appears to be no clear roadmap in the near future for the revival of the AMR project. It appears that PSPCL is planning to bring all feeders under SAP which may take further 2 years.</p> <p>PSPCL is directed to revive the AMR project and ensure submission of AMR data of AP feeders without any further delay.</p> <p>d) Submission of monthly AP data</p>	<p>feeders are covered under AMR.</p>	<p>Corporation Ltd. DPRs under IPDS scheme have been approved by ministry of power. The remaining grids are to be covered under 11 KV rural monitoring scheme of REC for which sample feeder details (50 no.) has been forwarded to REC for conducting proof of concept (POC).</p>
<p>e) Submission of AMR data.</p> <p>f) No progress to provide meters on AP motors fed from urban feeders has been made by PSPCL during FY 2014-15 which indicate total lack of initiative on the part of the licensee to implement the directions of the Commission. The directive is reiterated to ensure compliance immediately otherwise all such consumers shall continued to be treated as being fed from AP feeders.</p> <p>ii) Metering Plan:</p>	<p>d) The Commission adopted the pumped energy methodology for assessing AP consumption in the review of FY 2012-13 carried out in the Tariff Order for FY 2013-14 and discarded the sample metre methodology. Accordingly PSPCL is directed to stop submission of sample meter data to the Commission and may utilise the healthy sample meters to comply with the directions of the Commission to provide 100% metering on atleast 10% AP feeders</p> <p>e) Refer to comments & directive of the Commission against (c) above</p> <p>f) Despite repeatedly directions to provide meters on all AP consumers running on urban feeders, no tangible progress has been made. The Commission reiterates its directions to PSPCL to provide 100% metering on A.P. consumers fed from urban feeders and report compliance by issuing certificate within one month of issue of Tariff Order for FY 2016-17.</p>	<p>d) Data of P.E. of 11 KV AP feeders is submitted regularly to Hon'ble Commission. As per the directions of Hon'ble Commission submission of Sample meter data to the Commission is stopped.</p> <p>e) As (c) above.</p> <p>f) Directions have already been given to field offices for providing 100% metering on AP motors running on urban feeders. 1423 AP connections on urban feeders are left and will be provided meters shortly.</p>

8.6	KVAH Tariff	<p>In previous Tariff Order, PSPCL was directed to submit its plan to achieve 100% metering as per Section-55 of the Act, within three months of the issuance of the Tariff Order but the utility failed to submit any plan in this regard. It is matter of serious concern that licensee is adamant in violating the provisions of the Act by citing financial and administrative constraints. PSPCL is again directed to utilise the liberal funding available under Deendayal Upadhyaya Gram Jyoti Yojana of MoP/Gol to fulfil the mandate of the Act regarding 100% metering of all consumers.</p> <p>The Commission notes the compliance. Refer para 5.1 of this Tariff Order also. The proposal for left over categories may be framed by PSPCL.</p>	<p>PSPCL has submitted a totally irrelevant reply to the directions of the Commission for FY 2015-16. The direction of the Commission was to submit 100% metering plan as per section 55 of the Act and there was no mention to provide AMR meters. To make available liberal funding to the distribution licensees for achieving 100% metering, Gol launched DDUGJY for this purpose but PSPCL preferred to ignore the directions of the Commission and the Gol scheme.</p> <p>The Commission reiterates its directions to PSPCL to submit the Action Plan within one month of issue this Tariff Order to achieve 100% metering.</p> <p>The Commission notes the compliance and agrees with the reply of PSPCL.</p>	<p>The issue has been discussed in meeting of commission with management of PSPCL where it was decided that instead of 100 % metering of AP connection, 100% meters on 1 % of AP feeders be installed to determine losses of AP feeder. Accordingly 83 No AP feeders are identified for 100% metering and meters are being installed.</p>
8.7	Two Part Tariff	<p>Refer para 5.2 of this Tariff Order</p> <p><u>ToD Tariff</u></p> <p>Refer para 5.3 of this Tariff Order. PSPCL should certify that all LS &MS consumers who opted for ToD Tariff by 15.9.14 have been provided duly tested ToD meters before 30.9.14 as per T.O. 2014-15. PSPCL should certify that specifications for ToD meters have been approved, vendors short listed and rates fixed for ToD meters. PSPCL should ensure that meters are available only at rates fixed by PSPCL.</p> <p><u>(i) Implementation of PwC report</u></p> <p>The PwC report on manpower planning was submitted to PSPCL in March 2011 and since its submission the reply of PSPCL in subsequent ARR petitions has been that report is under the consideration of Board of Directors.</p> <p>The Commission directed PSPCL to submit the action taken report on PwC report within 3</p>	<p>Refer para 7.1 of this Tariff Order.</p> <p>The Commission notes the compliance.</p>	<p>The Hon'ble Commission has noted the compliance in Tariff Order for FY 2015-17.</p> <p>PSPCL has already submitted the Two part Tariff proposal alongwith MYT petition on 30.11.2016</p> <p><u>ToD Tariff</u></p> <p>The Hon'ble Commission has noted the compliance in Tariff Order for FY 2016-17.</p> <p>Energy meters suitable for LS/MS consumers having provision for TOD are available with PSPCL. Consumers can also purchase these meters directly from firms as per commercial circular no. 38/2014 dt. 29.09.2015.</p>
8.8	Employee Cost	<p>The Commission notes the action taken by PSPCL.</p> <p>PwC report on Man Power planning was submitted by the Consultants to PSPCL in March 2011 but remained unimplemented due to indecisiveness of the management. Employee cost is a major component of Annual Revenue Requirement and affects the consumers. PSPCL is directed to get this report updated from Consultants by getting it re-examined in view of the present scenario and prepare a</p>	<p>The detailed staffing study on manpower was got done by erstwhile PSEB / PSPCL as per insistence of the PSERC, mainly for reducing the employee cost. It is pointed out that the manpower strength of PSPCL has already declined below the manpower strength of PSPCL as proposed by PwC (48767). The latest manpower figure of PSPCL for March 2016 is 40370 which has gradually decreased from 87066 in 2001-02 (for erstwhile PSEB) whereas number of consumers has increased from 3.8 million to 8.6 million in the corresponding years. The bare minimum manpower for essential roles is also being recruited to ensure smooth functioning of the organization as per approval from the Govt. of Punjab, as such further reduction in manpower will not be good for the health of the organization in the short as well as long term.</p>	

<p>months of issue of Tariff Order for FY 2014-15 but instead of taking any decision on the report, the utility reiterated its position that report is under consideration of BoD. It indicates indecisiveness on the part of the utility to take appropriate decision on very important aspect of manpower planning. Commission reiterates its directive to PSPCL to submit the action taken report on PwC report within 2 months of issue of Tariff Order.</p>	<p>roadmap for the reduction of employee cost. This exercise must be completed within six months of the issue of this Tariff Order.</p>	<p>It is pertinent to mention that the no. of pensioners in PSPCL has already reached 60741 in March 2016 against working strength of 40370. Since the legacy of recruitment done in past cannot be undone in the short run, thus the contribution towards pension form major portion towards high employee cost of the organization. As regards the productivity, organisation has been taking incessant efforts & initiatives to adopt the best practices/proven modern management concepts & need based in-house restructuring & manpower rationalisation. As a result, Employee Efficiency Parameters have shown substantial improvement in the recent years, which is evident from the data tabulated below:</p>																												
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<p>Further, the report being under consideration of BoD of PSPCL, it is clarified that the report is always under constant consideration of PSPCL's BoD while taking critical decisions on policy matters, restructuring, reorganisation of existing human resources of PSPCL. Based on the report, PSPCL has developed a long term five year recruitment plan of the organisation, which is now being implemented after getting its approval from the Govt. of Punjab. The implementation of five year recruitment plan is expected to be completed by the end of year 2017. Further, outsourcing of various non-core roles is also being carried out in phased manner. The IT implementation (R-APDRP Part-A IT Systems, SAP ISU System), in the distribution wing has also picked up pace and is progressing well.</p>																														
<p>In this context, it is pointed out that the current dynamic phase of change in the organisation is going to reshape the structures as well as the working systems in the organisation.</p>																														
<p>In line with the recommendations of PwC Report, PSPCL is already conducting various in-house restructuring & re-engineering initiatives. It will be appropriate to carry out further review of the manpower requirement after the current phase of five year recruitment plan and IT implementation in distribution is realised.</p>																														
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<p>Reorganization of DS on functional lines: PSPCL had been claiming excellent results due to re-organisation of distribution set-up but for last more than one year, PSPCL has discontinued the implementation of functional re-organisation with the plea that model is being re-examined in view of</p>	<p>The Commission directs PSPCL to submit the roll out plan for implementation of re-organisation of distribution set up on functional lines within one month of issue of this tariff order.</p>																													

<p>adverse feedback received from some field officers and consumers. In petition no. 4 of 2014, PSPCL informed the Commission that BODs in its meeting held on 27.05.2014 has constituted a committee to suggest a suitable model and will submit the report within 2 months. The Commission in its Order dated 28.11.2014 directed PSPCL to furnish final plan for reorganisation of distribution setup along with half yearly targets by 31st Jan. 2015 but till date no plan or decision in this regards has been conveyed by PSPCL to the Commission. The Commission has indeed visualised such scenario and commented in the bid Order that track record of PSPCL in taking timely decisions for tackling the issue of employees cost & productivity does not inspire confidence for speedy resolution of the issue by the utility.</p> <p>While taking a serious view of the repeated failure of PSPCL to take timely action on the issue of manpower productivity, Commission directs the utility to implement re-organization of DS wing on top priority.</p> <p>iii) AMR of H.T. consumers:</p> <p>PSPCL in the reply to para 6.3(i) has claimed that 24 number towns have been declared "GO LIVE" but billing of only 7 towns on AMR has been reported. Commission directs PSPCL to ensure implementation of AMR in all R-APDRP towns by 30.6.2015 and remaining by March, 2016.</p>	<p>The Commission observes that the directions to PSPCL were to cover all HT and MS consumers under AMR. PSPCL has submitted only the number of modems installed on HT consumers.</p> <p>The status and timeframe to cover all HT & MS consumers under AMR should be submitted to the Commission within one month of issue of this Tariff Order.</p>	<p>AMR of HT consumers of 47 no. towns under R-APDRP Part-A has already been completed and billing of these consumers is being carried out on the basis of AMR data. AMR of HT consumers of balance 97 No. towns of Punjab is to be carried out under IPDS scheme of GOI/MOP. DPRs have been approved by MOP.</p> <p>However, regarding AMR of MS consumers across state of Punjab, WTDs of PSPCL in its meeting held on dated 15.09.2016 has decided to invite fresh tender for providing AMR on all the remaining (25,500 no. approx.) industrial consumers of MS categories and providing existing MDAS or by providing separated MDAS. Tenders for development of a single MDM/MDAS system for accommodating data through multiple modems has been floated with due date of opening on 23-08-2017.</p> <p>All the DRS/FDS/FAT (data required sheet/functional design specifications/factory Acceptance test) documents submitted to PSPCL have been approved.</p> <p>All the three SCADA/DMS control center buildings have been completed and control center equipments have been installed and commissioned successfully by M/s Siemens Ltd.</p> <p>All the 79 No. RTUs have been reached at the respective sites in all the three towns. Till date 57 Nos. have been installed. FRTUs are being installed in RMUs and as on date 54 FRTUs (out of total 69 nos. to be installed) have been installed.</p>
<p>iv) Distribution SCADA/DMS</p> <p>PSPCL must ensure implementation of SCADA along with R-APDRP works.</p>	<p>The Commission notes the action taken by PSPCL.</p> <p>PSPCL is directed to ensure completion of the Project as per schedule.</p>	<p>All the DRS/FDS/FAT (data required sheet/functional design specifications/factory Acceptance test) documents submitted to PSPCL have been approved.</p> <p>All the three SCADA/DMS control center buildings have been completed and control center equipments have been installed and commissioned successfully by M/s Siemens Ltd.</p> <p>All the 79 No. RTUs have been reached at the respective sites in all the three towns. Till date 57 Nos. have been installed. FRTUs are being installed in RMUs and as on date 54 FRTUs (out of total 69 nos. to be installed) have been installed.</p>

		<p>v) <u>Unmanned Sub Stations:</u> The direction to PSPCL was to expedite the process of setting up unmanned grid substations on the lines of progressive distribution utilities in the country. The utility is bound to take note of various directions issued by the Commission in public interest and in case of any difficulty in its implementation, the matter should have been taken up with detailed explanation but the reply of PSPCL that there is no plan for setting up un-manned stations indicate PSPCL's indifferent attitude towards directions being issued by the Commission to improve its functioning and introduction of latest technology & best practices in the field of distribution business for better consumer service. PSPCL is directed to intimate the reasons for not adopting such latest technologies within 2 months of issue of this Tariff Order.</p>	<p>PSPCL is required to adopt modern technologies and best practices to improve efficiency and consumer service. PSPCL is directed to intimate the performance of Chaura Bazar un-manned grids sub-station and also submit future roadmap for covering more grid sub-stations under this scheme.</p>	<p>As per the MoP/GOI order No. 14/01/2011-APDRP dated July 08, 2013, the deadline for completion of RAPDRP Part-A projects is extended by another two years for all states for conversion of loan into grant i.e. Part-A projects shall be required to be completed within a period of 5 years from the date of sanction. Accordingly, WO No. 504/DIT/695 dated 23.02.2015 was issued to M/s. Siemens Ltd, for the implementation of SCADA/DMS project in PSPCL, at three towns of Punjab i.e. at Amritsar, Jalandhar & Ludhiana. The extended completion period for the project is upto 31.03.2018. As it involves numerous vendors for supply of material and services and many works have been further given to sub vendors by the main vendor. Thus, coordinating and synchronizing all activities for optimum progress devour time. However, PSPCL has made considerable progress and it is expected that the Jalandhar town shall be complete by 30.09.2017. After completion of Jalandhar town, all efforts will be made to complete Amritsar and Ludhiana towns in minimum possible time by putting all available resources into force. 3rd party independent evaluation shall further follow the operationalization of the SCADA control centres. This activity is expected to be complete by 31st March 2018. Further, PFC vide their letter no. 02.10-R-APDRP (Part-A)SCADA:1:2010:PSPCL dated 06-07-2017 has given the extension to SCADA/DMS project upto 31.03.2018 to complete the Part-A(SCADA) work as well as PIEA-IT verification.</p> <p>66 kV Sub-station Chappar is going to be set up as the First Unmanned Sub-station of PSPCL. The administrative approval has been accorded by the Hon'ble WTDs PSPCL in its 186th meeting held on 15.09.2016 at Patiala. The Civil works tender process has been completed. The work allotment order No. 17 dated 26.10.2016 has been issued. The tenders for supply of Electrical equipment like 11KV auto-reclosers, 11KV CTs, PTs, Isolators etc. has been received and its Part-I & II has been opened on 18.10.2016. The allotment order for the supply of this electrical equipment is likely to be placed within 15 days. It is targeted that, this Sub-station shall be completed & commissioned by 31.07.2017</p> <p>66KV Sub-station GIS Chaura Bazar, Ludhiana has been completed & commissioned on dated 20.8.2016. It is functioning quite successfully. This is the First GIS Sub-station of the PSPCL. Instead of total work of setting up this GIS Sub-station being given on turn-key basis, the in-house expertise was used, which cut short the cost appreciably. Only the GIS bays were specifically procured, got installed, tested and commissioned by the Supplier firm. Remaining Sub-station was constructed with conventional equipment. The building of the Sub-station is state of the art type.</p> <p>Second GIS Sub-station of the PSPCL is going to be established at Sri Darbar Sahib, Amritsar. Its electrical construction work including supply of the equipment is in the scope of the PSPCL as a deposit work. The Civil construction work is to be carried out by the SGPC itself and they have under taken the work. The drawings of the Civil Works have been prepared & approved by Sub-station Design, PSPCL and have been given to the</p>
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<p>8.9</p>	<p>vi) Training: PSPCL may take appropriate action for periodic training of its manpower to increase the efficiency and productivity.</p>	<p>The Commission notes the action being taken by PSPCL. The Commission engaged IIM Ahmadabad to study Tariff and related matters. The consultant after extensive study and interaction with the top management of both power companies and various other stakeholders has recommended in its report that "being in a situation of excess supply after many years of shortage, at an organizational level, there is need to change the mind set to one of a strong market and customer driven orientation Executive Education Programme could facilitate this". Accordingly, PSPCL is directed to finalize the Training Programme for senior and middle level management officers on various aspects of 'Marketing' within a month of issue of this Tariff Order and intimate the same to the Commission.</p>	<p>SGPC, Amritsar. Tendering for the electrical equipment including GIS bays is in the advanced stage. Purchase order for the supply of 3 Nos. GIS bays have already been placed on M/s Crompton Greaves vide P.O. No. 161/SS(D) dated 12.08.2016. The civil work of Sub Station held up since 04/2017 due to some problem at SGPC end.</p> <p>PSPCL being already aware of the challenge, has established a dedicated cell 'Power Sale' under Chief Engineer/PP&R for this purpose, consisting of one Dy. Chief Engineer, One Addl. SE and one Assistant Engineer. As per the directive, two officers from 'Power Sale' cell have undergone training on 'Power Markets in India: Issues & Challenges' from October 3, 2016 to October 6, 2016 at ASCI, Hyderabad. Subsequently, a seminar on 'SALE of Surplus Power and Marketing of Surplus Power' has been conducted by the expert team of TATA Power Trading Company Limited on 15th Nov. 2016, which was attended by 63 No. Senior Officers (SEs, SEs/Sr. XENs & AEEs, CAOs, Dy. CAOs FAs, Cost Controller etc.) of PSPCL. For further training of higher level officers in marketing technique, the training programs & workshops will be accordingly finalized/revised in the outsource training plan for FY 2017-18.</p>																		
<p>8.10</p>	<p>Receivables The total receivables have increased from ₹1780.33 lac to ₹78648.43 lac and the increase is mainly against industrial category. The outstanding amount against Government departments also increased from ₹218.66 lac to ₹295.61 lac during this period. PSPCL is directed to explore the possibility of installing pre-paid meters on the connections being released to Government departments in consultation with State government.</p>	<p>The total receivables have increased from ₹84494.53 lac in 03/2015 to ₹108556.31 lac ending 03/2016. The detailed scrutiny of the defaulting amount data shows that receivables from Govt. Depts. have increased from ₹34061.41 lac in 03/2015 to ₹53013.75 lac in 03/2016.</p> <p>The reply given for not adopting pre-paid meters on Govt. and Temporary connections is not convincing as many progressive utilities are using these meters.</p> <p>Manipur State has successfully implemented the programme to introduce prepaid meters and reported very encouraging results. PSPCL is directed to study the implementation strategy of Manipur State for large scale introduction of prepaid meters and prepare roadmap for introduction of prepaid meters in the Punjab within a month of issue of this Tariff Order.</p> <p>The Commission notes the action taken by PSPCL.</p>	<p>Status of Defaulting Amount (Rs in lacs.) ending 03/2017 viz-a-viz 06/2017 is as under:-</p> <table border="1" data-bbox="845 179 1053 828"> <thead> <tr> <th>Cate-gory</th> <th>Ending 03/17 (un-audited)</th> <th>Ending 06/17 (un-audited)</th> </tr> </thead> <tbody> <tr> <td>Ind</td> <td>94743.31</td> <td>102844.79</td> </tr> <tr> <td>AP</td> <td>304.53</td> <td>283.49</td> </tr> <tr> <td>GSC</td> <td>62977.24</td> <td>65199.16</td> </tr> <tr> <td>Others</td> <td>1890.64</td> <td>2603.07</td> </tr> <tr> <td>Total</td> <td>159915.72</td> <td>170930.51</td> </tr> </tbody> </table> <p>Defaulting amount statement ending 06/2017 and break up of receivables outstanding against Govt. department are enclosed as Annexure-F.</p> <p>NIT for tender enquiry no MQP-116/2017-18FC(M) has been floated to procure prepaid meters as a pilot project and the same is scheduled to be opened on 23.08.2017.</p>	Cate-gory	Ending 03/17 (un-audited)	Ending 06/17 (un-audited)	Ind	94743.31	102844.79	AP	304.53	283.49	GSC	62977.24	65199.16	Others	1890.64	2603.07	Total	159915.72	170930.51
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<p>8.11</p>	<p>Mtc. of category PSPCL is directed to take immediate action as</p>	<p>The Commission notes the action taken by PSPCL.</p>	<p>M/s Ernst and Young LLP Kolkata was entrusted with the work of consultancy in various fields of Accounts and Finance, Internal Control System, Compliance of various</p>																		

	<p>wise details of Fixed Assets</p>	<p>per Companies Act 2013.</p>	<p>The Commission directs PSPCL to submit the status report on preparation of fixed asset register on quarterly basis and intimate the target date for completion of the job.</p>	<p>provisions of New Companies Act, 2013 and other applicable acts, rules, accounting standards. Mechanism for maintenance of Fixed Assets records is also to be devised by the consultant in Capital Expenditure and Fixed Assets Manual. The consultant has submitted the second draft of Capital Expenditure and Fixed Assets Manual which is under consideration/scrutiny of the committee constituted for this purpose. Keeping in view the present status of development of Accounting Manuals by the consultant, it is expected that it will take minimum six months time for completion and finalization of manuals. After approval of the manuals/procedures devised by the competent authority, field office of PSPCL will be directed to implement the same and prepare/maintain record of fixed assets category wise as per manual. Necessary training will also be given to concerned staff of PSPCL by the consultant, which is also part of assignment. Therefore, it is submitted that preparing and maintaining of fixed assets record category wise is a huge task for which PSPCL may be given a period of minimum one year after the necessary mechanism devised by the consultant is approved. Further, it is submitted that fixed assets register will be completed by computerizing the data through IT section from current to previous period.</p>
<p>8.11</p>	<p>Power purchase from Traders and through UI</p>	<p>i) The Commission in para 97 of its order dated 10.10.2014 in case of petition no. 17/2014 (suo motu) had observed that PSPCL has already appointed consultants to develop models for optimal power procurement and sale and the models being developed by them are expected to go live by September, 2014. The Commission in the bid order had directed PSPCL to submit the model developed by the consultants for optimal power procurement and sale of power within 30 days from the date of the order. A period of more than 6 months has elapsed, no such model as directed by the Commission has been submitted. PSPCL is again directed to submit the model developed by the consultants, within 30 days of the issue of the Tariff Order.</p> <p>ii) The Commission in para 118 of the bid order had observed that the trading margin being paid for banking agreements signed through intermediary traders can be avoided through direct banking, as PSPCL has the requisite expertise to carry out the same, and hence it will be preferable that, PSPCL enters into the banking arrangements directly, until it is absolutely essential to have involvement of trading companies. The action taken in the matter be intimated to the Commission,</p>	<p>i) PSPCL is not taking the matter seriously and till date has not submitted the revised status of "go-live" of models after the successful implementation of the modules thus developed by the firm. PSPCL is directed to submit the status within 30 days from the date of issue of Tariff Order.</p> <p>ii) The Commission notes the compliance. However, PSPCL is directed to enter banking agreements directly to avoid intermediary traders until it is absolutely essential to have involvement of trading companies.</p>	<p>The following models developed by M/s Mercados-AF Pvt. Ltd for optimum procurement and sale of power have been made alive</p> <ul style="list-style-type: none"> i) Day ahead price forecasting Module. ii) Short-Term Day ahead Load forecasting Module. iii) Short-Term portfolio optimization Module iv) Medium-Term Load forecasting Module.. v. Medium-Term portfolio optimization. vi) Month ahead price forecasting Module. <p>For the operation of these modules, two no AEEs have specially been posted for this purpose who are generating reports on a daily basis. A sample of each of the modules is enclosed Annexure-G for ready reference please.</p> <p>PSPCL always endeavors to explore possibilities of banking that fall under direct arrangements with the various utilities. Correspondences are being made at regular intervals with different utilities to tie up the direct banking. PSPCL has recently managed to enter into banking arrangement with MPPMCL directly for 300 MW from June, 2017 to Feb.2018. PSPCL participated directly against the tender for banking of power floated by HPSEBL. Also, PSPCL has participated directly against the tender for banking of power floated by Utrakhanch(UPL) and succeeded. Hence every opportunity is being availed to enter in to a banking arrangement directly with a utility whenever possible.</p>

	<p>within 30 days of the issue of the Tariff Order.</p> <p>(ii) The Commission in para 126 of the ibid order has desired to submit the information on daily/monthly basis and also upload on its website with regard to power purchase etc. PSPCL is directed to intimate the action taken in the matter within 30 days of the issue of the Tariff Order and confirm that the information as directed by the Commission in its ibid order is being uploaded on the website of PSPCL.</p>	<p>iii) The Commission notes the compliance.</p>	<p>iii) The Commission has already noted the compliance in T.O. 2016-17.</p>
<p>8.12</p> <p>Loading status of sub-transmission system (66 KV & 33 KV)</p>	<p>PSPCL should ensure de-loading of overloaded sub-stations before Paddy 2015.</p>	<p>The Commission notes the action taken and directs PSPCL to submit its plan to de-load all grid sub-stations and lines having loading above 70% of its capacity.</p>	<p>The TS Organization of PSPCL during the year 2016-17 commissioned 70 Nos 66KV Sub-station works. 658.659 Ckt. KM 66 KV transmission line has been constructed during the year 2016-17. 11KV Capacitor banks of 240.897 MVAR capacity have been added and commissioned during the year 2016-17 in the Sub transmission System. For the year 2017-18, 75 Nos. 66KV Sub-station works are to be completed & commissioned including 23 Nos. new 66KV Sub-stations. 900 Ckt. KM transmission lines shall also be completed during the year 2017-18. 300 MVAR capacity shall be added in the Sub-transmission system of the State for further improving the efficiency in the State of Punjab. The addition of this transmission capacity shall further bring down the loading of existing 66KV Sub-stations. After preparation of list of 66KV Sub-stations with loading more than 70% by the Planning office by the month of November-2017, TS organisation of the PSPCL shall thereafter again formulate the time bound action plan to bring the loading of Sub-stations within the 70% loading limit after the approval of the transmission works by the Planning/ PSPCL, subject to availability of funds and material.</p> <p>As such, it may be observed that efforts are being made to keep the loading of all the Sub-stations of the State upto maximum limit of 70%.</p>
<p>8.13</p> <p>Cost Audit of generating stations</p>	<p>The Commission notes the action being taken.</p>	<p>The Commission notes the action taken and directs PSPCL to regularly and timely supply Cost Audit Reports to the Commission.</p>	<p>Cost audit reports of PSPCL have been submitted to PSERC as follows :- For the year 2011-12 had been submitted vide this office memo No. 2361 dated 30.7.2015. For the year 2012-13 had been submitted vide this office memo No. 2040 dated 27.01.2016 and the year 2013-14 had been submitted vide this office memo No. 2169 dated 20.04.2016. The cost audit report for FY 2014-15 has been sent vide memo No. 2250 dated 04.08.2017. For cost audit report of FY 2015-16, M/s SDM & Associate has been appointed as cost auditor.</p>
<p>8.14</p> <p>AMR of DS/NRS consumers</p>	<p>The Commission notes the action being taken.</p>	<p>The Commission notes the action being taken. The Commission directs PSPCL to share the progress of the work order on quarterly basis.</p>	<p>• The WO-cum-CA No.-510/DIT-739 dated 28.04.2015 placed upon M/s Kalkitech has been terminated. Further decision with regard to the project is under consideration of higher authorities.</p>

8.15	<p>Improvement in quality of service</p>	<p>PSPCL is not adhering to the SoP particularly with regard to replacement of burnt/ damaged meters, attending to complaints/ service requests. PSPCL should ensure strict compliance of SoP notified by the Commission.</p>	<p>The Commission has noted that dead/ defective/ burnt meters are not being replaced as per SOP notified by the Commission. The restoration of supply in case of breakdown/fault should be ensured strictly as per SoP. PSPCL is directed to ensure compliance of SoP and submit cycle wise key Exceptions reports and quarterly MIR to the Commission. PSPCL is further directed to ensure 24x7 (except AP) quality power supply to all sections of consumers.</p>	<p>Instructions have already been issued for implementation of SOP notified by Commission. Key exceptions report as on 24-08-2017 has been sent to PSERC vide Memo No. 2261 dated 01/09/2017. Real time reports are already available for 47 no. APDRP towns. Software has been compliant for 47 No. towns. Management Information Report (MIR) for each quarter are being submitted to PSERC.</p>																																																				
8.16	<p>Fuel Audit of various Thermal Plants of PSPCL</p>	<p>The Commission notes the compliance made by PSPCL as far as matter on quarterly basis is concerned and further directs to continue to supply the same in future also.</p> <p>PSPCL is directed to maintain difference in GCV between received and bunkered coal as per regulations.</p>	<p>The Commission notes the compliance made by PSPCL as far as supplying information in the matter on quarterly basis is concerned and further directs to continue to supply the same in future also. Refer para 6.7 of this Tariff Order.</p> <p>Recently many State run Coal Miners, Power Developers and Central Institute of Mining and Fuel Research (CIMFR) has entered into a tripartite agreement for quality analysis of coal supplied to generating stations both at the loading and unloading points. In case grade slippage is detected, the generators will be compensated. The Commission directs PSPCL to sign similar TPA immediately and report compliance within one month of issue of this Tariff Order.</p>	<p>The implementation ending June, 2017 of the directives in Orders in annotated form is attached as Annexure-D and the status of implementation of recommendations given by CPRI has been attached as Annexure-E.</p> <p>The Comparison of GCV of received and bunkered coal is as follow:</p> <table border="1" data-bbox="558 1680 925 1971"> <thead> <tr> <th>MONTH</th> <th>Receipt Coal GCV (AFB) (Kcal /Kg)</th> <th>Bunkered Coal GCV (AFB) (Kcal /Kg)</th> <th>Difference in GCV (AFB) (Kcal /Kg)</th> </tr> </thead> <tbody> <tr> <td colspan="4">GGSSTP, Rupnagar</td> </tr> <tr> <td>April-17</td> <td>4461</td> <td>4132</td> <td>329</td> </tr> <tr> <td>May-17</td> <td>4337</td> <td>4088</td> <td>249</td> </tr> <tr> <td>June-17</td> <td>4306</td> <td>4079</td> <td>227</td> </tr> <tr> <td colspan="4">GHTP, Lehra Mohabat</td> </tr> <tr> <td>April-17</td> <td>4297</td> <td>4216</td> <td>81</td> </tr> <tr> <td>May-17</td> <td>4131</td> <td>4021</td> <td>110</td> </tr> <tr> <td>June-17</td> <td>4163</td> <td>3941</td> <td>222</td> </tr> <tr> <td colspan="4">GNDTP, Bathinda</td> </tr> <tr> <td>April-17</td> <td>4484.94</td> <td>4425.99</td> <td>58.95</td> </tr> <tr> <td>May-17</td> <td>4227.66</td> <td>4333.11</td> <td>-105.45</td> </tr> <tr> <td>June-17</td> <td>4330.26</td> <td>4362.46</td> <td>-32.20</td> </tr> </tbody> </table> <p>PSPCL has already executed Tripartite agreements with CIMFR and CIL subsidiaries on 19.09.2016.</p>	MONTH	Receipt Coal GCV (AFB) (Kcal /Kg)	Bunkered Coal GCV (AFB) (Kcal /Kg)	Difference in GCV (AFB) (Kcal /Kg)	GGSSTP, Rupnagar				April-17	4461	4132	329	May-17	4337	4088	249	June-17	4306	4079	227	GHTP, Lehra Mohabat				April-17	4297	4216	81	May-17	4131	4021	110	June-17	4163	3941	222	GNDTP, Bathinda				April-17	4484.94	4425.99	58.95	May-17	4227.66	4333.11	-105.45	June-17	4330.26	4362.46	-32.20
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8.17	<p>Review of PPA's with Generators/ Traders for purchase of power from outside the State of Punjab.</p>	<p>PSPCL is directed to carry out the job at the earliest and submit action taken report along with next ARR. Top priority should be given to this work in view of surplus power in the State.</p>	<p>PSPCL is directed to pursue the matter vigorously at higher level.</p>	<p>PSPCL presently scheduling about 4000 MW power under Long Term PPA's/ BPSA's signed with Central Sector's entities i.e. NTPC, NHPC, SJVNL, DVC, NPCIL, UMPPs etc. With the Commissioning of Independent Power Plants like NPL Rajpura, TSPL Talwandi Sabo and GVK Goindwal Sahib, PSPCL has become surplus in power. Now in the changed scenario after the commissioning of IPPs, a few of these Central Sector Plants have become un-economic for PSPCL due to their comparatively higher variable rates. Review of Long Term Power Purchase Agreements already signed with Generators outside Punjab for purchase of power is under process. On this matter PSPCL has recognised 11 No. NTPC/NHPC (Anta, Auriya, Dadrri, Jhajjar, Unchahar-I, Farakka, Kahalgaon -I of NTPC and Sewa-II, Chamera-III, Uri-II & Parbati-III of NHPC) generating stations for surrendering its power share on mutual agreed terms. The same matter has been taken-up by Govt of Punjab with MOP, GOI. However, as per BPSAs/PPAs the surrender of power can only be carried out on mutually agreed terms by both the parties</p>																																																				

8.18	Audited Annual Accounts for FY 2012-13 and FY 2013-14	PSPCL has failed to submit audit report of CAG of India for FY 2012-13 and Audited Annual Accounts & CAG of India for FY 2013-14 in time resulting deferment of true up for these years. PSPCL is directed to ensure timely submission of audited annual accounts.	Late submission of Audited Annual Accounts by PSPCL results in late true ups of the relevant years. PSPCL is, therefore, directed to ensure timely submission of Audited Annual Accounts along with reports of Statutory Auditors & CAG and reply of management to the observations.	<p>i.e. PSPCL & NTPC/NHPC.</p> <p>Annual Accounts of FY 2015-16 have been audited by statutory Auditors & CAG. The management representation on the observations of CAG have also been approved by the board of Directors of PSPCL and accounts have been adopted in the Annual general Meeting of the members of PSPCL. The annual accounts of FY 2016-17 are under preparation/statutory audit.</p>
8.19	Per Unit Fuel Cost	PSPCL is further directed to take note of the cost per unit while backing down its generating plants.	PSPCL to take note of the cost per unit while backing down its own generating plants. Regular supply of coal from Punjab's own captive coal mine is of utmost importance to protect the interest of the consumers. PSPCL is directed to follow the matter more vigorously, so that coal supply from own captive mine may be restored at the earliest.	<p>As intimated earlier variable cost of each plant is worked out on monthly basis which differs from each other because of various reasons. Energy from these generating plants is scheduled only on the basis of the merit order prepared on the basis of the variable cost of energy worked out. Hence due consideration is already being given to the cost of generation for each plant while scheduling energy from them. The latest status regarding Pachhwarra Central Coal Mine is briefed here under:-</p> <p>1) It is submitted that Ministry of Coal, Govt. of India has allotted Pachhwarra Central Coal Mine to PSPCL vide Allotment Order No. 103/11/2015/INA dated 31.03.2015. PSPCL has floated e-tender Global Tender Enquiry No. 4/CE/ FUEL/ C-273 (V) dated 31.08.2015 for selection of Mine Developer cum Operator (MDO) for development and operation of Pachhwarra Central Opencast Coal Mining Project, Distt. Pakur, Jharkhand. Though the above tender enquiry was scheduled to be opened on 29.10.2015, but after holding pre-bid meeting, three number corrigenda were issued to the Global Enquiry and the tender enquiry was re-scheduled to be opened on 15.12.2015.</p> <p>2) Evaluation of bids: Against the tender enquiry floated by PSPCL for appointment of MDO, the Technical and Commercial Bids were submitted by five number firms which were opened on its scheduled date i.e. on 15.12.2015. The technical and commercial evaluation of bids submitted by the bidders was carried out by PSPCL consultant M/s aXYKno. On the basis of the recommendations of the Core Committee of PSPCL on this evaluation, an Agenda No. 186/ CE/ Fuel/ C-273 A (IV) dated 02.02.2016 was put up before the WTDs of PSPCL to consider and decide on the proposal contained in the Agenda. The WTDs in its 178th meeting held on 04.02.2016 decided as under:-</p> <p>"RESOLVED THAT approval be and is hereby accorded for opening of price bids of following four number firms:</p> <ul style="list-style-type: none"> i) Adam Enterprises Limited, Gurgaon ii) EMTA Coal Limited, Kolkata iii) NCC-BGR Consortium (Nagarjuna Construction Company Ltd. (Hyderabad) - BGR Mining & Infra Pvt. Ltd. (Hyderabad) through Consortium)

	<p>iv) <u>SAINIK-VPR Mining Consortium (Sainik Mining & Allied Services Ltd. (Gurgaon) - VPR Mining Infrastructure Ltd. (Hyderabad) through Consortium)</u></p> <p>FURTHER RESOLVED THAT Thriveni-AMR JV (Thriveni Earthmovers Pvt. Ltd. (New Delhi) - AMR India Ltd. (Hyderabad) through Consortium have not fulfilled the eligibility criteria under Clause 6.2.4 of the bid and hence disqualified.</p> <p>Based upon the above decision of the WTDs, the price bid of the above four number eligible firms was scheduled for opening on 11.02.2016 and all the firms were informed vide this office letters dated 04.02.2016 for opening of the price bid. However, against this tender enquiry Price Bids could not be opened due to stay granted by Hon'ble Punjab & Haryana High Court in the following CWP's filed by various bidders against this tender enquiry.</p> <p>3) <u>Status of CWPs filed by various bidders against Global Tender Enquiry No. 4/ CE/FUEL/C-273 (V) dated 31.08.2015.</u></p> <p>a) <u>CWP No. 26180 of 2015 titled "EMTA Vs PSPCL":</u></p> <p>It came to the notice of PSPCL that on a petition filed by M/s EMTA Coal Limited, the Hon'ble High Court of Karnataka State had stayed the further processing of KPCL's tender enquiry floated for appointment of MDO to undertake the mining operation in respect of coal mine allotted to KPCL. So apprehending that M/s EMTA Coal Ltd. may approach the Hon'ble Punjab & Haryana High Court, Chandigarh for similar relief in case of PSPCL's Global Enquiry for selection of MDO, a Caveat petition was filed by PSPCL before the Hon'ble Punjab & Haryana High Court on 10.12.2015 with the approval of CMD PSPCL.</p> <p>In the meanwhile, EMTA claiming heavy investment made by them in creating infrastructure for mining over the years filed CWP No. 26180 of 2015 in Hon'ble Punjab & Haryana High Court, Chandigarh, whereby submission has been made for issuance of directions to PSPCL to offer EMTA Right of First Refusal as well as Right of novation in the Tender Enquiry floated by PSPCL for appointment of MDO.</p> <p>b) <u>CWP No. 2610 of 2016 titled "M/s Thriveni Earthmovers Private Ltd & another vs PSPCL"</u></p> <p>M/s Thriveni Earthmovers Private Ltd in their writ petition had mainly prayed to direct PSPCL to intimate the price bid opening date in terms of clause 7.14 and 7.14.2 of e-tender for selection of MDO for Pachhara Central Open Cast Coal Mining Project under the e-tender document and also prayed that during the pendency of the writ petition, the declaration of result / opening of technical / financial bids or any activity subservient to the furtherance of the tender process may kindly be stayed in the interest of justice. M/s Thriveni Earthmovers Private Ltd & another had also filed CM No. 1799 to CWP No. 2610 of 2016. However, this petition was subsequently withdrawn by them on 25.02.2016.</p> <p>c) <u>CWP No. 2581 of 2016 titled M/s NCC-BGR consortium vs PSPCL</u></p> <p>M/s NCC-BGR consortium in their writ petition had mainly prayed to disqualify SAINIK-VPR Mining Consortium (Sainik Mining & Allied Services Ltd. (Gurgaon) - VPR Mining Consortium)</p>
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Infrastructure Ltd. (Hyderabad) through Consortium) from opening of Price bid and had prayed for issuance of appropriate order, direction or writ to abide by the tender conditions and act upon the representation dated 18.01.2016 given by them regarding disqualification of SAINIK-VPR Mining Consortium (Sainik Mining & Allied Services Ltd. (Gurgaon) - VPR Mining Infrastructure Ltd. (Hyderabad) through Consortium) in view of misrepresentation of facts in the bid documents submitted. The firm also prayed that the opening of price bid may be stayed by the Hon'ble High Court.

During the proceedings of CWP 2581 of 2016, M/s Sainik-VPR mining Consortium counter represented in High Court challenging the eligibility of NCC-BGR Consortium in MDO tender for Pachhwara Central Coal Block for concealing material information regarding various terminations and blacklisting of their contracts. The Hon'ble Punjab and Haryana High Court during hearing held on 22.03.2016 passed an interim order as under:

"It is clarified that the pendency of this writ petition does not prevent respondents No.2 and 3 from taking a decision on the fourth respondent's representation which inter alia challenges the eligibility of the petitioner."

The above said representation was received by PSPCL on 28.03.2016 and 30.03.2016 from M/s Sainik-VPR mining Consortium against NCC-BGR Consortium challenging their eligibility. These representations were sent to NCC-BGR Consortium who gave their reply on 01.04.2016.

During the hearing held on 04.04.2016, it was desired by the Punjab and Haryana High Court that the order on the above representation may be communicated by PSPCL to the parties concerned by 20th April, 2016.

As per the legal opinion of PSPCL legal counsel and recommendations of the core committee an Agenda No. 190/ CE/ Fuel/ C-273 A (IV) dated 08.04.2016 was placed before the WTDs. As per decision of WTDs of PSPCL in its meeting held on 11.04.2016, M/s NCC - BGR consortium was disqualified as they did not fulfil the eligibility criteria under Clause 6.2.4 of the bid document, as the member of the said consortium namely NCC Limited had suffered termination of the contract awarded by the Government Undertaking especially by the Government of West Bengal as well as by the Government of Jharkhand. Accordingly, this decision was informed to the parties on 20.04.2016.

d) CWP No. 7561 of 2016 titled M/s NCC-BGR consortium vs PSPCL

M/s NCC - BGR consortium did not resile with the decision of PSPCL and they filed CWP No. 7561 of 2016 on 25.04.2016 in Punjab and Haryana High Court.

<p>Various hearings have been held in these cases on 24.02.2016, 02.03.2016, 10.03.2016, 17.03.2016, 21.03.2016, 22.03.2016, 30.03.2016, 04.04.2016, 25.04.2016, 10.05.2016, 16.05.2016, 26.05.2016, 27.05.2016, 12.07.2016, 19.07.2016, 03.08.2016, 09.08.2016, 23.08.2016, 01.09.2016, 05.09.2016, 20.09.2016, 04.10.2016, 06.10.2016, 26.10.2016, 21.11.2016, 13.12.2016, 19.01.2017, 24.01.2017, 30.01.2017, 02.02.2017, 07.02.2017, 14.02.2017, 23.02.2017, 07.03.2017, 22.03.2017, 20.04.2017, 10.05.2017, 14.07.2017 and next date of hearing is 18.08.2017.</p>	<p>e) <u>CWP No. 12397 of 2016 titled as M/s THRIVENI EARTHMOVERS PRIVATE LIMITED AND ORS V/S STATE OF PUNJAB AND ORS</u></p> <p>As discussed at Sr. No. 2 above, the WTDs in their 178th meeting held on 04.02.2016 had disqualified the firm for not fulfilling the eligibility criteria under Clause 6.2.4 of the bid and further as discussed at Sr. No. 3(b) above the firm had withdrawn their challenge in the Hon'ble High Court to the action of disqualification. Since M/s Thriveni-AMR JV had misrepresented facts as per Clause No. 6.5 (c) of bid document due to wrong declaration given at the time of bid submission & not disclosing the termination of its contract with a Government Undertaking, therefore, PSPCL is entitled to encash the earnest money deposit. The Core Committee after detailed discussions and deliberations in its meeting dated 31.05.2016 decided that:</p> <p><i>"EMD submitted by M/s Thriveni-AMR JV Consortium in form of Bank Guarantee amounting to Rs. 30 Crore against Global Tender Enquiry No. 4/ CE/ Fuel/ C-273 (V) dated 31.08.2015 be forfeited."</i></p> <p>After due information of the above decision of the core committee to CMD/PSPCL, instructions were issued to Tamilnad Mercantile Bank Ltd., Salem, Tamil Nadu on 03.06.2016 for encashment of EMD amounting to Rs. 30 Crore. However, the firm challenged this decision of PSPCL in the Hon'ble Punjab & Haryana High Court. Chandigarh by filing CWP No. 12397 of 2016 titled as "M/s Thriveni Earthmovers Private Limited and Others v/s State of Punjab and Others". The Hon'ble High Court vide its order dated 07.06.2016 directed PSPCL not to encash the bank guarantee till next date of hearing i.e. 11.08.2016. Hearings held on 24.09.2016, 27.10.2016, 25.01.2017. With effect</p>
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from 30.01.2017, the case is being listed for hearing alongwith other MDO cases

4) P SERC Orders on Petition No. 41 of 2016 (Suo-motu), application filed by PSPCL thereof in Hon'ble Punjab and Haryana High Court.

Order dated 09.06.2016

PSERC at Sr. No. (ii) of its Order dated 09.06.2016 on Petition No. 41 of 2016 (Suo-motu) regarding "Press clipping appearing in the Hindustan Times dated 11.05.2016 regarding generation at Ropar Thermal Plant reduced due to outages" directed PSPCL as under:

"Apprise the Hon'ble High Court for the State of Punjab and Haryana at Chandigarh through A.C. Punjab, regarding each day loss to PSPCL duly corroborated with the calculations, due to non-operationalization of Pachhiwara Coal Mine from where the coal is to be supplied to PSPCL thermal plants."

Accordingly, an office note was sent to Ld. Advocate General, Punjab and thereafter CIM Application No. 8880 of 2016 in CWP No. 26180 of 2015, CM Application No. 8885 of 2016 in CWP No. 7561 of 2016 and CM Application No. 8857 of 2016 in CWP No. 2581 of 2016 have been filed in the Hon'ble Punjab and Haryana High Court with a prayer that PSPCL may kindly be permitted to open the financial bids and to tentatively shortlist the bids submitted by the bidders in the facts and circumstances of the case and in the interest of justice and fair play.

Order dated 09.09.2016

PSERC at Sr. No. (i) of its Order dated 09.09.2016 on Petition No. 41 of 2016 (Suo-motu) regarding "Press clipping appearing in the Hindustan Times dated 11.05.2016 regarding generation at Ropar Thermal Plant reduced due to outages" directed PSPCL as under:

"to file an affidavit in Hon'ble Punjab & Haryana High Court by 13.09.2016 stating that the loss due to non-operationalisation of Pachhiwara mines allocated to PSPCL is Rs. 37. Crare for the year and a loss of Rs. 185 Cr. Has already been passed on to the consumers of Punjab and there is impact of 8.36 paisa per unit on different categories of consumers. The domestic supply, which is given to SC consumers and non BPL families at Rs. 4.52 (above 200 free units per month) is now higher by 8.36 paisa per unit. Similarly, industry which is already suffering in Punjab, is paying extra 8.36 paisa per unit. Copy of the affidavit filed in the Hon'ble High Court be also sent to the Commission"

<p>Accordingly, CM Application No. 11749 of 2016 in CWP No. 26180 of 2015, CM Application No. 11643 of 2016 in CWP No. 7561 of 2016 and CM Application No. 11642 of 2016 in CWP No. 2581 of 2016 have been filed in the Hon'ble Punjab and Haryana High Court as per orders of Hon'ble PSERC.</p>	<p><u>Development as per the order of High Court during the hearing held on 05.09.2016</u></p> <p>During the hearing held on 05.09.2016, the Senior Counsel for the petitioner NCC-BGR Consortium made a submission that that they have filed a representation before PSPCL, wherein, various disqualifications/ ineligibility as per the tender conditions have been pointed out against Sainik-VPR Consortium and the same is pending for decision by PSPCL. The Hon'ble Court ordered that the representation submitted by NCC-BGR Consortium, and pending with PSPCL should be decided by PSPCL and further directed that NCC-BGR Consortium should be given an opportunity to submit any additional representations. Accordingly, vide letter dated 06.09.2016 NCC-BGR Consortium has been asked to submit any additional relevant documents and Sainik-VPR Consortium to submit reply to this office for decision by PSPCL in this regard.</p> <p>Further, as per instruction imparted by Hon'ble High Court vide order dated 05.09.2016, PSPCL passed speaking order disqualifying M/s Sainik-VPR Consortium, for not fulfilling eligibility criteria under Clause 6.2.4 of the bid document and it stands conveyed to the firm vide this office letter 1970 /CE/Fuel/C-273 (A)(VII) dated: 19.09.2016. Copy of the same also stands furnished to Hon'ble High Court in hearing held on 20.09.2016.</p> <p><u>Latest status of hearings in the CWPs</u></p> <p>During the course of hearing held on 04.10.2016 M/s Sainik-VPR Consortium filed CWP No. 20861 of 2016 challenging its disqualification in the tender enquiry as per the decision taken by PSPCL. Also the petitioner in its writ petition alleged that an order of termination was passed on 06.10.2014 by Secretary, Jharkhand State Electricity Board, Ranchi against EMTA and the same was not disclosed by EMTA while submitting bid against subject cited Global Tender Enquiry. It has been further alleged that EMTA is liable to be disqualified on this ground.</p> <p>Hearing continued on 06.10.2016 and Hon'ble High Court directed that M/s Sainik-VPR Consortium shall furnish Bank Guarantee within 10 days with validity up to 31.03.2017 and</p>
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4/29 PSPCL

<p>directed PSPCL not to encash Bank Guarantee till further orders.</p> <p>During the proceedings held on 26.10.2016 M/s EMTA was directed to submit its reply within one week on the issue raised by M/s Sainik-VPR Consortium through its CWP No. 20861 of 2016 and directed PSPCL to pass speaking order in this regard after affording an opportunity of hearing to EMTA. The next date of hearing and next date of hearing is fixed on 21.11.2016.</p> <p>Further, as per instruction imparted by Hon'ble High Court vide order dated 26.10.2016, PSPCL has passed speaking order disqualifying M/s EMTA, for not fulfilling eligibility criteria under Clause 6.2.4 of the bid document and it stands conveyed to the firm vide this office letter 2367 /CE/Fuel/C-273 (A)(VII) dated: 18.11.2016. Copy of the same also stands furnished to Hon'ble High Court in the hearing held on 21.11.2016.</p> <p>M/s EMTA filed CWP No. 25050 of 2016 challenging its disqualification in the tender enquiry as per the decision taken by PSPCL. The Hon'ble High court through its order dated 03.12.2016 stayed the encashment of Bank Guarantee till further orders and also clubbed the case with CWP 26180 of 2015.</p> <p>In the hearing held on 13.12.2016, Hon'ble high court ordered that the bidder shall extend bid validity up to 30.06.2017 within 15 days from today. Hon'ble high court also ordered that if bank guarantee had not been extended till 31.03.2017, the same shall also be extended upto 31.03.2017.</p> <p>Hearing continued on 19.01.2017. PSPCL submitted its reply to CWP 25050 of 2016 filed by M/s. EMTA . Ld. Advocate General (Senior standing counsel of PSPCL) very strongly argued for urgency to decide the matter. The Hon'ble High Court heard the arguments and announced that the orders regarding disqualification of bidders shall be pronounced during the month of February.</p> <p>On 24.01.2017, arguments were concluded by counsel for NCC-BFR in CWP 2581 of 2016 regarding their application to challenge qualification of Sainik-VPR mining consortium. Further on 30.01.2017 & 02.02.2017, arguments were made and concluded in CWP 7561 of 2016 by counsel for NCC-BGR against their own disqualification.</p> <p>During hearings held on 07.02.2017, 14.02.2017, 23.02.2017 counter arguments were made by counsel of Sainik-VPR in CWP 2581 of 2016 and arguments in CWP 20861</p>			
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			<p>continued. During hearing held 07.03.2017, case was adjourned on request from Sainik-VPR counsels. Hon'ble High Court also directed the bidders to extend bid validity and bank guarantee upto 30.09.2017. During hearing held on 22.03.2017, the case was adjourned on request of State of Punjab. During hearing held on 20.04.2017 case was adjourned on request of counsels of PSPCL to seek instructions. During hearing held on 10.05.2017 learned state counsel submits that the matter is under consideration of the Government for taking some decision. Therefore, prayer is made for grant of some time. During last hearing held on 14.07.2017, a short affidavit was filed in Hon'ble High court apprising about the decision of BODs to drop the present tender enquiry and to float fresh tender. Next date of hearing is fixed for 18.08.2017. Further action on retendering is initiated.</p>
8.20	System Analysis wings	<p>PSPCL should establish system analysis wings under CE/Planning and CE/PPR to conduct planning and system operation studies respectively.</p> <p>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.)</p>	<p>The Commission notes the action taken in setting up of System analysis Wing.</p> <p>The Commission reiterates that all Technical Proposals submitted to the Commission, should invariably be supported by Load Flow Studies, Short Circuit, Analysis, Stability Studies etc.</p> <p>The Commission observes the painfully slow progress on the network model of 33 KV/66 KV sub transmission system to properly study the system load flow and other critical parameters through a software designed for the studies.</p>
8.21	Updating of consumers' Security Registers, payment of interest on Security	<p>The claim of PSPCL that interest on security for FY 2013-14 has been made to all consumers appears to be incorrect since during public hearings held on APR petition for FY 2015-16, various consumer representatives complained that interest has not been paid to all the consumers. This fact is</p>	<p>Analysis wing has been created in the Planning Organisation vide O/o No.03/SE/P/ig-3 dated 2.1.2015 in compliance to the directive of PSERC issued against the suo-moto petition No. 54/2014. Planning Organisation is studying and taking up the matter with designers/suppliers of existing software and with various power utilities and organisations in context of using the software for sub transmission system analysis at voltage level of 66 KV/33 KV/11 KV.</p> <p>The matter was taken up with the consultant M/s. PRDC, Bangalore regarding load flow studies, short circuit studies, GPS mapping & feasibility studies and the budgetary offer was obtained. Now, expression of interest is under process.</p> <p>It is submitted that PSPCL has made rigorous efforts to update the record of various consumers w.r.t. their ACD with DS offices. But the record being old and not updated continuously in the Sub-Divn./Divn. offices, the desired results could not be achieved. Now PSPCL has given press advertisement in various popular/leading newspapers requesting its consumers to come forward with the details of ACD deposited with them in the respective Sub-Divisions. so their records can be updated. Now, approximately 5 Lac.</p>

<p>Consumption and Security Meter</p>	<p>further corroborated by the ARR figures which shows a payment of ₹150 crore against a security deposit of ₹2292 crore during 2013-14. At interest rate of 11.70% payable during 2013-14, the amount of interest paid to consumers should have been almost double. While taking a serious view of the harassment of general consumers, PSPCL is directed to ensure updation of consumer's security register and submit a certificate on affidavit at annual interest on Security (Consumption) and Security (Meter) payable upto FY 2014-15 along with penal interest, where ever payable due to delay in payment of interest, has been credited to the accounts of all eligible consumers as per regulation 17 of the Supply Code 2014.</p>	<p>the five Distribution zones in the last one year to certify to the Commission. The security registers have not been updated and consumers are being denied the interest payable as per the Act and the Supply Code. The updation of Security registers is the internal administrative matter of the licensee and it cannot be used as an alibi to deny the interest to large number of consumers. The Commission directs PSPCL to ensure up to date payment of interest on Security (Consumption) and Security (Meter) to all consumers and submit certificate within one month of the issue of this Tariff Order failing which proceedings under relevant sections of the Act shall be initiated</p>	<p>consumers record is pending and ACD of these consumers will be uploaded as soon as some record is traced or made available by the consumer.</p>
<p>8.22 Introduction of Contract Demand System</p>	<p>Refer Para 5.1 of this Tariff Order. PSPCL is directed to submit a road map for introduction of Contract Demand System for remaining category of consumers within 3 months of the issue of this Tariff Order.</p>	<p>The Commission notes the compliance and agrees with the reply of PSPCL.</p>	<p>A Sub committee was constituted vide P'SERC office Order No. 164/P'SERC/Tariff/1/39 dated 6.8.2015. This sub committee was constituted to examine the issue of extending kVAh tariff and introduction of Contract Demand System for 3 phase SP and DS and NRS categories of consumers (having connected load up to 50 KW) and give its report to P'SERC. A meeting of the sub committee was held in the office of Director/Distribution on 6.10.2015 & 4.3.2016 and after deliberations it was resolved as under :- i) The committee suggested that the system of contract demand may not be implemented at present for both the categories i.e. SP category and DSNRS categories having connected load from 20KW to 50 KW as in both categories small consumers of non organized sector are covered. Moreover the demand requirement of these consumers as a percentage of their connected load is low. ii) As for the conversion factor, the committee decided to suggest a conversion factor of 0.90 in line with the conversion factor being implemented for other category of consumers to maintain parity.</p>
<p>8.23 Calculation of depreciation as per straight line method</p>	<p>PSPCL is directed to claim the depreciation for assets in the next ARR as per straight line method over the useful life of the asset at the rate of depreciation as specified by the CERC provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station/line shall be spread over the balance useful life of the</p>	<p>The depreciation rates as per CERC (Terms and Conditions of Tariff) Regulations, 2014 are applicable to PSPCL. Remaining depreciable value as on 31st March of the year closing after a period of 12 years from date of commercial operation shall be spread over the balance useful life of the assets. The Commission directs PSPCL to prepare accounts accordingly.</p>	<p>The provision regarding calculation of differential depreciation is in accordance with the "Punjab State Electricity Regulatory Commission (Terms & Conditions for determination of Generation, Transmission, Wheeling and Retail supply Tariff) Regulation-2014" issued by P'SERC vide notification dated 1st July-2014, which is applicable w.e.f. 01.04.2017 and it will be considered while preparing the accounts of 2017-18. However, a Petition No. 16 of 2017 under section 18(2) read with section 61 & 62 of the electricity act, 2003 for amendments in the "Punjab State Electricity Regulatory Commission (Terms & Conditions for determination of Generation, Transmission, Wheeling and Retail supply Tariff) Regulation-2014", has been filed by PSPCL. Therefore, the policy regarding differential depreciation shall be finalized after decision of the above said Petition.</p>

8.24	Proper sealing/locking of pillar boxes/ MCBs	as per.	<p>The Commission has repeatedly directed PSPCL to ensure that all pillar boxes and MCBs housing meters in public places or outside consumer premises must be properly locked and sealed. The Commission directs PSPCL to do the needful and submit a certificate within two months of the issue of this Tariff Order that all pillar boxes/MCBs have been properly sealed/locked.</p>	<p>The directions issued by the Commission to PSPCL were to ensure that pillar boxes/MCBs are properly sealed. The Commission is aware that sometimes, opening of pillar box will be required to carry out some job but such an event cannot become an excuse to keep the pillar box unsealed/open. PSPCL has to issue necessary guidelines to the field officers to ensure immediate resealing of pillar boxes/MCBs.</p>	<p>Copy of Instruction No.08/2016 and references were enclosed as Annexure-B with PSPCL office memo No. 2541 dated 13.10.2016 addressed to Secretary/PSEERC. Instructions have already been passed to field offices for ensuring sealing of meters & locking of Pillar boxes. This issue is stressed upon during review meeting & disciplinary action has been taken against delinquent officials.</p>																																																								
8.25	Periodic Checking of meters	<p>Regulation 21.3 of the Supply Code 2014 provides for periodic inspection/ testing of all meters/metering equipment installed at the consumers' premises in the given time schedule. It has been brought to the notice of the Commission that EHT metering equipments are not being tested at site by the licensee. PSPCL is directed to ensure compliance of the regulations and report compliance within two months of the issuance of this Tariff Order. PSPCL should check the multiplying factor of all C.T./P.T. meters and report compliance within 6 month of issue of this Tariff Order.</p>	<p>PSPCL should certify that accuracies of EHT metering equipments including CT/PT units of all 172 EHT connections have been checked by MMTS. The details of the testing equipments for checking the accuracies at site for ratio error and phase angle errors of CTs/PTs and meter accuracies of electronic meters be shared with the Commission.</p> <p>The Commission reiterates its directions that meticulous compliance of regulation 21.3 of Supply Code 2014 regarding periodic inspection /complete testing at site of all meters/metering equipments must be ensured.</p>	<p>The EHT meters checked and detail of checking of EHT meters by MMTS units of CE/Ent. during 1st quarter of FY 2017-18 ending June, 2017 is as under :-</p>	<table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Emf. Circle</th> <th>No. of EHT Meters</th> <th>No. of Conns. checked during Qtr.</th> <th>No. of DDL done.</th> <th>Accuracy mtr. checked or not.</th> <th>Status of M.F.</th> <th>Any other violation found</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Amritsar</td> <td>15</td> <td>9</td> <td>9</td> <td>5</td> <td>OK</td> <td>NIL</td> </tr> <tr> <td>2</td> <td>Bathinda</td> <td>21</td> <td>9</td> <td>9</td> <td>1</td> <td>OK</td> <td>NIL</td> </tr> <tr> <td>3</td> <td>Jalandhar</td> <td>18</td> <td>9</td> <td>9</td> <td></td> <td>OK</td> <td>NIL</td> </tr> <tr> <td>4</td> <td>Ludhiana</td> <td>68</td> <td>68</td> <td>67</td> <td></td> <td>OK</td> <td>NIL</td> </tr> <tr> <td>5</td> <td>Patala</td> <td>67</td> <td>40</td> <td>40</td> <td></td> <td>OK</td> <td>NIL</td> </tr> <tr> <td></td> <td>Total</td> <td>189</td> <td>135</td> <td>134</td> <td>6</td> <td></td> <td></td> </tr> </tbody> </table>	Sl. No.	Emf. Circle	No. of EHT Meters	No. of Conns. checked during Qtr.	No. of DDL done.	Accuracy mtr. checked or not.	Status of M.F.	Any other violation found	1	Amritsar	15	9	9	5	OK	NIL	2	Bathinda	21	9	9	1	OK	NIL	3	Jalandhar	18	9	9		OK	NIL	4	Ludhiana	68	68	67		OK	NIL	5	Patala	67	40	40		OK	NIL		Total	189	135	134	6		
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8.26	Replacement of defective energy meters at Grid Sub-station	<p>PSPCL is directed to ensure that all the energy meters installed at various grid sub-stations record correct energy. Any meter found defective must be replaced within 10 working days. Similarly any other defect contributing to wrong recording of the energy must be rectified within 10 days. The defective meter shall be got tested from MMTS/ME lab and</p>	<p>The officer of the Commission has noticed during inspection of various grid sub-stations that non-functional feeder meters are not being replaced within 10 days.</p> <p>The MMTS must carry out DDL of meters during checking and supply the same to the Commission with its report.</p>	<p>It is submitted that the periodic checking of all the EHT connections have been carried out by MMTS squads. During the checking, the instantaneous contribution of all the three phases by PTs and CTs, phase disassociation, any anomaly etc. as recorded by meter are checked. The history of tempered data as recorded by meter was also downloaded through DIMRI for scrutinising any discrepancy. The accuracy of meter/ CTs/ PTs as the case be, is to be got checked from ME lab/ other Test Labs.</p>	<p>Replacement of defective energy meters at sub stations is ongoing process. On the average 1-2% meters become defective due to various reasons. It is the endeavour of PSPCL to replace all such meters at the earliest possible time. Regarding carrying out DDL of all meters is not practically feasible not it is required as the accuracy of recording of our summation by all the outgoing meters is cross checked by comparing it with the energy recorded on the incoming meter in terms of busbar losses. However letter has been written to MMTS organisation to check the downloaded data of those meters only whose working is reported to be doubtful or defective by concerned SSE for the purpose of validation.</p>																																																								

	<p>the report should be submitted to the Commission. PSPCL is directed to check multiplying factors of all energy meters & report compliance within 3 month of issue of this Tariff Order.</p>	<p>PSPCL is directed to calculate AT&C losses along with T&D losses w.e.f 01.04.2015</p>	<p>8.27</p> <p>Calculation of AT&C losses</p>	<p>The Commission directs PSPCL to supply AT&C losses for FY 2015-16. PSPCL is directed to achieve AT&C loss target of 14.00% set under UDAY scheme by 2018-19.</p>	<p>1) Against target of 16.16% for ending March, 2015-16 under the UDAY Scheme, 15.95% AT&C Losses has been achieved. The provisional AT&C losses for the year 2016-17 are 15.03% inclusive of transmission losses. 2) In FY 2016-17 PSPCL has achieved the 87.38% billing efficiency against target of 84.70%. 3) PSPCL has also achieved 99.58% collection efficiency excluding the revenue of subsidy booked and received. 4) 12.99% AT&C Losses has been achieved by excluding the subsidized revenue of PSPCL. 5) The amount of subsidy booked for FY 2016-17 is Rs.5900 Cr. against which subsidy of Rs. 5600.70 Cr. has been received from GOP therefore overall collection efficiency of PSPCL including subsidized revenue is reduced to 94.33%. Therefore %age AT&C losses has increased to 17.57% against target of 15.30% due to less receipt of the subsidy during the FY 2016-17. All the field offices are already directed to give the Road Map for decreasing the AT&C Losses as per target given under UDAY Scheme.</p>	<p>8.28</p> <p>Power Regulatory Measures</p>
	<p>PSPCL is directed to ensure clear, proper and timely advance intimation of scheduled power cuts/other regulatory measures to the consumers. All unscheduled power cuts shall be put on the website of PSPCL on the next day giving reasons and duration of such regulatory measures.</p>	<p>The Commission notes the action being taken and directs PSPCL for meticulous implementation of the directions.</p>	<p>8.28</p> <p>Power Regulatory Measures</p>	<p>The directions issued by PSERC in this regard are already being implemented meticulously.</p>	<p>The Commission notes the action being taken and directs PSPCL for meticulous implementation of the directions.</p>	<p>8.29</p> <p>Assessment of T&D losses on AP feeders</p>
	<p>Since PSPCL has not implemented Section 55 of the Act mandating 100% metering, therefore, to estimate the T&D loss level on AP feeders, PSPCL is directed to cover atleast 5% pure AP feeders spread all over the state under 100% metering by December, 2015 and to engage an independent agency to record metered sale and pumped energy of these AP feeders to calculate T&D losses.</p>	<p>The Commission reiterates its directive to PSPCL to install 100% meters on 5% pure AP feeders by December, 2016 and another 5% by December, 2017. Before implementing the scheme, PSPCL should get the AP feeders identified for 100 % metering approved from the Commission.</p>	<p>8.30</p> <p>Implementation of Commi-</p>	<p>The issue has been discussed in meeting of commission with management of PSPCL where it was decided that instead of 100 % metering of AP connection, 100% meters on 1 % of AP feeders be installed to determine losses of AP feeder. Accordingly 83 No AP feeders are identified for 100% metering and meters are being installed. Same will be completed soon.</p>	<p>The Commission reiterates its directive to PSPCL to install 100% meters on 5% pure AP feeders by December, 2016 and another 5% by December, 2017. Before implementing the scheme, PSPCL should get the AP feeders identified for 100 % metering approved from the Commission.</p>	<p>8.30</p> <p>Implementation of Commi-</p>

The status of implementation of directions of Hon'ble Commission's is as under:-
Point No.5:

The Hon'ble Commission has already noted its compliance in T.O. 2016-17. However, during the year 2016-17 658.659 Ckt. KM 66KV transmission lines have been completed & commissioned.

Point No.6:
The Hon'ble Commission has already noted its compliance in T.O. 2016-17. The transmission works are being constructed & commissioned with full thrust to achieve the targets fixed. The progress is as under please:-

Year	66KV Sub-station works	66KV Transmission lines (Ckt. KM)	MVA capacity added
2012-13	150	414.589	1510.45
Year	66KV Sub-station works	66KV Transmission lines (Ckt. KM)	MVA capacity added
2013-14	153	662.217	1499.00
2014-15	226	715.250	2222.20
2015-16	115	814.886	1130.50
2016-17	70	658.659	686.00
2017-18 Ending June 17	10	97.573	98.00

A number of 11KV capacitor banks are being added in the Sub-transmission system of the State. During the year 2016-17, 240.897 MVAR of 11KV capacitor banks has been added/commissioned.

Point No.7:
The observation is being implemented please. The policy of Best Practices in transmission is being followed. There is well considered planning of the transmission works, E-tendering system is being followed for procurement of the equipment and allotment of work orders. There is efficient project management & monitoring of the quality including pre-dispatch in the field offices. The working officials are continuously being trained regarding safety measures and improving quality of works.

Point No.8:
Regular meetings between the Planning Organization of the PSPCL with PSTCL Organizations are taking place. Exchange of data on load assessment, demand forecast

The Commission notes the compliance

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The Commission notes the compliance and directs PSPCL to follow provisions of the report of the committee constituted by Govt recommending the Best Practices.

PSPCL has not intimated anything regarding regular meetings

issued in the Commission's order dated 04.12.2014 in case of petition no. 54 of 2014. The first such quarterly report ending June, 2015 is to be submitted by 31.07.2015 and next quarterly reports should be submitted by 31.10.2015, 31.01.2016 and 30.04.2016.

Commission's order dated 04.12.14 in case of petition no. 54 of 2014 in the matter of Technical Audit of works executed by PSTCL and PSPCL for development of transmission, sub-transmission system from 01.04.10 to 31.03.13

is done and works are planned & decided accordingly.

Point No.9:

The Hon'ble Commission has already noted its compliance in T.O. 2016-17. The observation is being implemented. E-tendering process is followed for procurement and allotment of work orders. The Grid construction activity is departmental. Lowest bidder is awarded the work after process of competitive bidding.

Point No.10:

The observation is being implemented. The physical & financial progress is being reported & monitored on monthly basis. The compiled physical & financial progress is also sent to RE&APDRP and Financial Advisor, PSPCL for financial tie-up. The TS Organization of PSPCL came into existence w.e.f. 1.12.2011. However during the last three years, substantial achievements have been made in the field of Grid Construction activities including New, Additional, and Augmentation & Up-gradations in Sub-transmission system and construction of 66KV transmission lines. The progress has been summarized under Point No.6 above. All out efforts are being made to increase the quantum of the works completed & commissioned. However, overall financial aspect of the PSPCL scenario is being taken care of while initiating the Transmission work.

Point No.11:

Record is being maintained of the scheduled date of commissioning and actual date of commissioning of the TS works please. This is regularly being implemented at all functional level to avoid any slippage etc.

Point No.12:

The observation is being implemented. The preparatory activities such as surveys, design and testing, processing for forest & other statutory clearances like Railways, tendering activities etc. is being done parallel to the Sub-transmission system works.

Point No.13:

The observation is being implemented. There is no undue delay in the up-gradation/commissioning of Sub-transmission System of the PSPCL. The capacity of existing Sub-stations has been added. A number of 66KV Sub-stations have been completed & commissioned for strengthening the Sub-transmission System. So flow of reliable power benefits envisaged to the consumers is actually being achieved.

Point No.14:

The maps of Sub-transmission System of the PSPCL are being maintained office of Chief Engineer/Planning, PSPCL. Data regarding updation is being supplied by TS Organization to the office of Chief Engineer/Planning, PSPCL monthly basis.

with PSTCL and exchange of data on load assessment demand forecast for each substation and nothing has been mentioned regarding load flow analysis, contingency analysis, short circuit analysis and dynamic analysis. The Commission directs PSPCL to follow the directive of the Commission meticulously in this regard.

The Commission notes the compliance.

PSPCL was directed to submit to the Commission on half yearly basis, the physical & financial record of the works. But no such record has been submitted by PSPCL. PSPCL is again directed to submit the same on half yearly basis.

The Commission notes with serious concern that no action has been taken by PSPCL to maintain proper record of scheduled date of commissioning and actual date of commissioning of all works with reasons for delay, if any. PSPCL is directed to maintain the same, under intimation to the Commission.

The Commission notes the compliance and directs PSPCL to maintain complete record as directed earlier.

The Commission notes the action taken in this regard and directs PSPCL to supply the list of Substations/Transmission works which are delayed for more than 3 months, with reasons.

		<p>PSPCL has not mentioned anything regarding preparation and updation of Maps of the system. PSPCL is again directed to prepare Maps of the whole system and update them regularly with exchange of data with PSTCL.</p> <p>PSPCL has not mentioned anything regarding load flow study for system planning so that overloaded lines can be brought within permissible loading limits. PSPCL is directed to follow the directive in letter and spirit.</p> <p>The Commission notes the compliance.</p>	<p>Point No.17: The office of Chief Engineer/Planning is carrying out the load flow study of the system and obtaining the progress regularly. Field in put is also given by the Organization to the office of Chief Engineer/Planning. DS Organization is also contributing with this information.</p> <p>Point No.18: The Hon'ble Commission has already noted its compliance in T.O. 2016-17. TS Organization has been giving full care for addition of 11KV Capacitor Banks in Sub-transmission System. The progress is as under:-</p> <table border="1"> <thead> <tr> <th>Year</th> <th>MVAR capacity added</th> </tr> </thead> <tbody> <tr> <td>2012-13</td> <td>61,245 MVAR</td> </tr> <tr> <td>2013-14</td> <td>438,238 MVAR</td> </tr> <tr> <td>2014-15</td> <td>334,806 MVAR</td> </tr> <tr> <td>2015-16</td> <td>191,901 MVAR</td> </tr> <tr> <td>2016-17</td> <td>240,897 MVAR</td> </tr> <tr> <td>2017-18 Ending June 17</td> <td>65,328 MVAR</td> </tr> </tbody> </table>	Year	MVAR capacity added	2012-13	61,245 MVAR	2013-14	438,238 MVAR	2014-15	334,806 MVAR	2015-16	191,901 MVAR	2016-17	240,897 MVAR	2017-18 Ending June 17	65,328 MVAR
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<p>8.31</p>	<p>Sale of Surplus Power</p>	<p>The Commission notes the action taken by PSPCL. PSPCL is again directed to develop and follow the scientific inventory management system.</p> <p>The PSPCL was directed to submit quarterly information on de-loading of overloaded Transmission lines and Substations. No information is being submitted by PSPCL. PSPCL is again directed to submit the same.</p> <p>PSPCL is directed to formulate a policy for marketing surplus power by creating dedicated trained team of experts, empowered to take prompt decisions to tap electricity market. Necessary training and institutional mechanism is to be put in place immediately. PSPCL is further directed to submit quarterly reports on the steps taken in this regard along with status of sale of power to the Commission.</p>	<p>Point No.19: The inventory control of all the 3 Nos. S&T Stores in PSPCL is computerized. Every material is issued through computerized Gate Passes system. The updation of inventory is carried out by the computer system. The GRN's of newly received material is entered on the computer system. As such, the orders of Hon'ble PSERC are complied with meticulously in this direction.</p> <p>Point No.20: The information regarding completion & commissioning of transmission works including 66KV transmission lines is regularly being supplied to the office of Chief Engineer/Planning, PSPCL, Patiala. The list of over loaded transmission lines & Sub-stations is updated by them on regular basis.</p> <p>i) PSPCL has already created a dedicated cell consisting of a Dy. CE, an Addl. SE and an AE to manage sale of surplus power. Regarding training, it is intimated PSPCL had sent its 2 no. officers for attending training on Power Markets in India issues and challenge conducted by Indian Energy Exchange (IEX) and administrative staff college of India (ASCI) at Hyderabad. PSPCL has also arranged a training program on sale of surplus power and marketing of surplus power on for its Senior and middle level executives.</p>														

	<p>ii) From the dates of creation of dedicated cell till June, 17 PSPCL has considered 88 No. tenders for sale of power to other utilities/discoms till June, 17. Out of which, PSPCL has participated in 38 No. tenders and could not participate in the rest of tenders due to reasons like paddy season, coal related condition, transmission corridor congestion etc. PSPCL had got only one order from Uttar Pradesh Power Corporation Limited (UPPCL) in the month of Oct.-16 and in other tenders did not get any order due to its quoted price being higher than discovered L-1 price.</p> <p>iii) PSPCL has also signed MOUs with M/s. PTC, M/s. Tata Power Trading Company Limited (TPTCL) and M/s. JSW Power Trading Company (JSWPTC) for sale of surplus power on behalf of PSPCL.</p> <p>iv) Ministry of Power Govt. of India has launched an e-bidding "DEEP" portal for procurement of power on short term basis. PSPCL has registered itself on the portal as bidder for sale of power. The dedicated cell is constantly in touch with this portal and has been participating in tenders as and when Utilities/Discoms will raise their demands on this portal.</p> <p>v) PSPCL has sold 25.84 MUS of Energy at an average rate of Rs. 2.63 per KWH at Punjab periphery in India Energy Exchange (IEX) during the period April-June '17 by participating in Day-Ahead market and through short term tenders.</p>
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Annexure-A

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
	<p>Installation of belt weighers for more key coal conveyors together with instrumentation for measurement of unit wise bunkered coal in addition to existing system</p>	<p>Microprocessor based belt weighers are already installed. Beltweigher 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.</p>

Sr. No.	Recommendation	Action Taken
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. Paperless process can be done after developing the software by IT section of PSPCL as the work order earlier issued to M/s TCS stands terminated by the O/o CE, Thermal Design, Patiala with the approval of competent authority 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.
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 2 nd 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.	Bronze impellers of CW pumps of all the units have been replaced with SS impellers
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.
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.
15.	Chemical analysis instruments for GCV and other analysis	One no. additional Automatic Bomb Calorimeter has been procured and installed.
16.	Continuous monitoring system for CO in the furnace and flue gas ducting and operational optimization	CO measurement of all the units is made operational.

Apart from above, following major works have been done to improve heat rate at the plant:-

1. Approximately 2000m length WW tube, suspected to be weak, has been replaced so far on unit no.1 during different shut downs.
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 during its annual overhauling in Mar-2013. General eroded tubes of pressure parts of boiler of all the units are being replaced during annual/Capital overhauling.

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 after developing the software by IT section of PSPCL as the work order earlier issued to M/s TCS stands terminated by the O/o CE, Thermal Design, Patiala with the approval of competent authority of PSPCL.
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2.	Inventory control software	The software is to be developed by IT section of PSPCL as the work order earlier issued to M/s TCS stands terminated by the O/o CE, Thermal Design, Patiala with the approval of competent authority of PSPCL.
3.	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.
4.	Renovation of lift with energy efficient control cards	Renovation of lift on Boiler side of stage-2 units with energy efficient control cards is commissioned on 29.09.2016.
5.	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. However, both types of soot blowers have been installed on boilers of Unit #3 & 4 under R&M and are in operation.

C) 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 1A,2B,3A,3B&4B 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.

<p>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.</p>	<p>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 rates are being unloaded with best possible efforts on wagon tippler, Pochlain and Manual Unloading Hopper to avoid demurrage. Picking of stones before entry to Wagon Tippler area is not possible</p>
<p>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.</p>	<p>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 2x37.5m³/hr. Therefore, no need of such software is envisaged at the plant.</p>
<p>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.</p>	<p>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.</p>

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. All tubes of APH 4 th block has been replaced and 10600 ferrules have been provided during Capital overhauling of unit-2 in Nov-Dec, 2014. About 10000 ferrules have been replaced on unit-3 & 4 (5000 on each unit) during 2016-16.
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. 40 No. broken pipes and 125 No. missing nozzles have been replaced on unit-2 during its COH in Nov-Dec'2014. Also, 115 No. nozzles have been cleaned. 115 mtr. broken pipes replaced and 340 No. missing nozzles restored in cooling tower of unit-1 during May 2015. On unit-2, 22.5 mtr. broken pipe replaced & 60 No. missing/choked nozzles replaced in its cooling tower during June-2015. Due to the above measures, performance of cooling towers has significantly improved.
3.	Strengthening of dry ash evacuation system including in-leak minimization and upgradation 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 Inconel 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	The software is being developed by IT section of PSPCL as the work order earlier issued to M/s TCS stands terminated by the O/o CE, Thermal Design, Patiala with the approval of competent authority of PSPCL.
2.	Knowledge management portal.	Use of modern IT practices is being encouraged at all levels at the plant. 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.	The software is to be developed by IT section of PSPCL as the work order earlier issued to M/s TCS stands terminated by the O/o CE, Thermal Design, Patiala with the approval of competent authority of PSPCL.
4.	Software for history archive of maintenance departments	The software is to be developed by IT section of PSPCL as the work order earlier issued to M/s TCS stands terminated by the O/o CE, Thermal Design, Patiala with the approval of competent authority of PSPCL.
5.	Steam path audit restoration of steam paths during a COH	Restoration of steam path will be done during COH of the units. The same has been done on unit-2 during its Capital Overhauling in Nov-Dec,2014
6.	Boiler side modifications through OEM (of R & M) to ensure heating surfaces are in order	Heating surfaces of all the units are in order.

C) 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 of the path to failure well before it happens.
Step 4: Recommendation: The group must be treated as an operations group and must not be burdened with responsibilities that will not give them time for real full time field monitoring. The complete condition assessment responsibility must be theirs.

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.

<p>2.</p>	<p>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.</p>	<p>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.</p>
<p>3.</p>	<p>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.</p>	<p>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 °C to 55° C Alarm – 55°C b) Working Oil temperature Operating range – 60° C to 110° C Alarm – 110° C Trip – 130° 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.</p>

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 plant 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 & pulverisers 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 & pulverisers 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.
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. Capture and dissemination of maintenance knowledge	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. 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.
9.	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.
10.	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.
11.	Quality circles must be initiated at GNDTP	3 no. quality circles have already been formed at GNDTP
12.	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.
13.	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.
14.	'Zero coal leak tolerance' policy	The policy is in implementation. Any coal leakage observed is immediately attended.
15.	'Zero steam leak tolerance' declaration	Efforts are being made to minimize steam leakages. However, the DM makeup is maintained within the permissible limits.
16.	Dynamic proactive vendor development	Every effort is made to develop new vendors.
17.	The percentage of tenders turning into orders must be increased to over 90 %.	The percentage of tenders turning into orders is already very high.
18.	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.
19.	Long term contracting can be entered into to minimize inventory levels for many items.	Policies of PSPCL are being followed.
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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.
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.
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	Three 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/cm ² ; blue for feed water, compressed air carrying at above 5 kg/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.
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(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.	The software is to be developed by IT section of PSPCL as the work order earlier issued to M/s TCS stands terminated by the O/o CE, Thermal Design, Patiala with the approval of competent authority of PSPCL.
6.	Reliability and risk indices of equipment must be worked out in formulating maintenance strategy	The software is to be developed by IT section of PSPCL as the work order earlier issued to M/s TCS stands terminated by the O/o CE, Thermal Design, Patiala with the approval of competent authority of PSPCL.
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.

9.	KAIZEN is recommended for improvements in maintenance and operations procedures.	It is covered under 3 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 (Thermo-gravimetric 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
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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 CPRJ 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 CPRJ 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 of all the units 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. Damaged Joints of all the units are being replaced on best available opportunity as and when required.
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 tipping 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 tipping 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 water lines for isolation have been installed and activity is completed.
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 200KH-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. Existing boiler feed pump 2B has been replaced with energy efficient, improved design 200KH-S model pump during its Capital Overhauling in Nov-Dec, 2014. This pump has designed efficiency of 80% (at BEP) against 72 % (at BEP) of old pump. This has resulted in saving of about 200KW.
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	After completing the study, work for up gradation of the system has been completed by OEM M/S Elecon. New Wagon Tippler with high capacity has not been recommended. Angles on 4A,4B,5A,5B,6A,6B,4A1,4B1,2A&2B conveyors have been modified departmentally and same modification shall be carried out on rest of the conveyors.
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(C) 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, some 0.5 accuracy EEMs has been replaced with 0.2 accuracy EEMs for better energy accounting. Rest of the EEMs shall be replaced in phased manner after getting from CE/Metering office.

Action taken by GNDTP, Bathinda on the Recommendations of CPRI on Auxiliary Power

1. Medium Term Measure

(A) Recommendations for which action has been 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. Damaged expansion Joints of all the units are being replaced as and when required on best available opportunity.
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 Dosing 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. Replacement/overhauling of Voith coupling of ID Fans of all the units is being carried out on best available opportunity as and when required.
5	Improving the PA Fan efficiency by overhauling of fan & motors	During the annual overhaul of all the units, PA Fans & Motors are being 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. Rim Gear, Journal Bearing and Liners of Coal Mills of all the units are being changed as and when required. 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 Pumps 1B, 1C, 2A & 2B has been got done. Gain in pump efficiency is about 5%. 2. Bronze impellers of CW pumps of all the units have been replaced with SS impellers.
8	Improving efficiency of Intake water pumps	Two no. better efficiency pumps with SS impellers have been procured and installed.
9	Installation of motor controller for conveyor motors	On main conveying system such as conveyors 2A, 2B, 9A, 9B, 4A, 4B, 4A1, 4B1, 6A, 6B, 5A & 5B high efficiency motors of EFF1 design along with new gear boxes have been installed.

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(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 has been installed to reduce coal spillage from belts.
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Action taken by GNDTP, Bathinda on the Recommendations of CPRI on Auxiliary Power
2. Long Term Recommendations

(C) 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 been installed on CW Pumps 3A, 3B, 3C, 4A & 4B.

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ANNEXURE-B

Recommendations:

S. No	Recommended Energy Efficiency Improvement Measures	Remarks/Status of Compliance
1	Energy conservation through improvement in Boiler & APH of all the Units by arresting the leakages in APH and by reducing the dry flue gas losses near to the design values.	All related maintenances activities/other activities for improvement are being carried out in routine and during overhauling. APH of Unit-1 shall be replaced in forthcoming shutdown in FY 2017-18.
2	Energy conservation through reducing leakage across APH of all the Units except Unit-2.	All related maintenances activities/other activities for improvement are being carried out in routine and during overhauling.
3	Energy conservation through optimizing primary air flow to coal mills of Units-1,2,3& 6.	All related maintenances activities/other activities for improvement are being carried out in routine and during overhauling and all possible efforts are made during operation of the units.
4	Energy conservation through improving efficiency of ID fans of all the Units by attending the maintenance activity.	All related maintenances activities/other activities for improvement are being carried out in routine and during overhaulings.
5	Energy conservation through installing VFDs for ID Fans.	Techno economic viability of installation of VFDs on ID fans and BFPs has been adversely affected due to low plant load factor in present power demand scenario. So implementation of this scheme shall not fruitful at this stage.
6	Energy conservation through improving efficiency of BFPs of all the Units by attending maintenance activity.	All related maintenances activities/other activities for improvement are being carried out in routine and during overhaulings. However for performance improvement cartridges of BFPs stage-1 are planned for replacement with new modified cartridge assemblies in 2018-19, 2019-20.
7	Energy conservation through installing VFDs for BFPs.	Techno economic viability of installation of VFDs on ID fans and BFPs has been adversely affected due to low plant load factor in present power demand scenario. So implementation of this scheme shall not fruitful at this stage.
8	Energy conservation through avoiding passing of BFP recirculation valves of all the Units.	Unit No.2 BFP RCV shall be replaced in the forthcoming shut down in Nov-Dec-2017.
9	Energy conservation through improving Vacuum of all the Units by arranging high pressure cleaning of condenser tubes in the overhauls and by taking step to improve CW flow (e.g. periodical operation of priming ejectors, rising of CW pump performance).	Condenser tube cleaning is being done by latest bullet shot technique. Condenser vacuum of all the units except Unit-5 is being maintained as per rated parameter. To improve the performance of CWP's, anti-friction/anti-corrosive coating is planned to be carried out on trial basis during coming shutdowns of Units. This is in line with other thermal plants where improvement has been observed.

	improving vacuum pump performance.	
10	Energy conservation through replacement of AHP Pumps stage-1.	All related maintenances activities/other activities for improvement are being carried out in routine and during overhauls.
11	Energy conservation through replacement of AHP Pumps stage-2.	All related maintenances activities/other activities for improvement are being carried out in routine and during overhauls.
12	Energy conservation through replacement of AHP Pumps stage-3.	All related maintenances activities/other activities for improvement are being carried out in routine and during overhauls.
13	Energy conservation through replacement of BACW Pump 1A.	Replacement of BACWs of Unit-1 & 2 is planned in 2018-19, 2019-20.
14	Energy conservation through Improving Output of Service air compressors and Instrument air compressors of all the units except SAC-3, IAC-1A, IAC-1B, IAC-1C, IAC-2A, IAC-3A, IAC-3B, SAC-2A, IAC-5A, IAC-5B, IAC-6A, and IAC-6B.	Replacement of existing compressors is planned with more efficient screw type compressors in 2018-19.
15	Energy conservation through adopting New LED based Lighting system.	Regarding installation of LED street light lamps, the requirement has been sent to office of SE/DSM, PSPCL, Patiala as it is being centrally procured by their office. The implementation shall be done tentatively by March-2018.

2) Other Recommendations:

S. No	Recommended Energy Efficiency Improvement Measures	Remarks/Status of Compliance
16	Energy conservation through increasing the frequency of water wall soot blowing of all the Units.	Water wall soot blowing of all the Units is being done regularly.
17	Energy conservation through keeping the burner tilt under Auto control will reduce SH & RH spray requirement of all the Units except Unit-3.	i) In stage-1, Burner tilt system field equipment and associated control system is obsolete and will be replaced during up-gradation of FSSS and SADC system. ii) In Unit-3, Burner tilt is operative in auto mode. iii) In Unit No. 4 to 6, Burner tilt is operative in manual mode. As the control system is old and obsolete auto operation is not available.
18	Energy conservation through maintaining TTDs and DCAs of all the regenerative heaters.	All related maintenances activities/other activities for improvement are being carried out in routine and during overhauls and all possible efforts are made during operation of the units
19	i) Energy conservation through improving the efficiencies of HPT & IPT cylinders of the Units-3, 5 & 6. ii) It is also recommended to conduct a steam path audit that would enable identify specific issues that are contributing to lower cylinder efficiencies in certain HPTs and IPTs.	Replacement of HP cylinder of Unit-3 planned in coming shutdown.
20	i) Reliability accuracy of available instruments must be ensured by frequent check up and calibration etc., ii) Local instruments must be provided to enable the monitoring of performance of various equipment like, for observing performance of regenerative heaters extraction steam pressure & temperatures and drip temperatures instruments must be provided at local points.	i) Water Monitoring software package. New SWAS system has been successfully installed and commissioned for online monitoring of water/ steam, chemistry in unit No 1,2,4,5. Installation of the system has been completed in Unit no 3 and 6 but commissioning is pending. ii) Optimizing the DP across FRS control station of BFP. The modification scheme has been successfully carried out at stage 1 and 3 of GGSSTP. Due to obsolescence of stage-2 control system the modification is not feasible on stage-2. iii) Bunker Level Monitoring System Feasibility of installation of coal bunker level measurement system and finalization of technical specifications for coal bunker level system with M/s EIP TPL who has installed at MAHAGNECO (Chandrapur TPS) and their performance is under study.

21	As per requirement of BEE PAT scheme suitable energy meters with data logging facility are recommended to be installed which will enable to assess the Auxiliary Power Consumption (APC) of the Units for various loads and durations to get APC normalization benefit.	Feasibility of installation of suitable energy meters with data logging facility is being explored and requirement is being consolidated, specifications are being finalized. Tentatively the implementation shall be achieved by December, 2018.
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4/2/2018

GENERATION, AUX. & GT Losses (MUs)							SHANAN		Remarks/Action Plan
MONTH	GEN.	AUX	%	GT	%				
Apr-16	49.587	0.014	0.03	0.619	1.25				
May-16	47.22	0.015	0.03	0.530	1.12				
Jun-16	53.88	0.013	0.02	0.746	1.38				
July-16	70.078	0.022	0.03	1.126	1.61				
Aug-16	78.00	0.02	0.03	1.080	1.38				
Sept-16	59.66	0.02	0.03	0.930	1.56				
Oct-16	28.92	0.01	0.03	0.320	1.11				
Nov-16	15.97	0.01	0.06	0.130	0.81				
Dec-16	12.83	0.015	0.12	0.068	0.53				
Jan-17	12.546	0.014	0.11	0.097	0.77				
Feb-17	17.842	0.013	0.07	0.140	0.78				
March--17	26.34	0.015	0.06	0.150	0.57				
Total of FY 2016-17	472.873	0.184	0.04	5.936	1.26				
April, 17	57.697	0.014	0.02	0.479	0.83				
May-17	74.87	0.014	0.02	0.64	0.85				
June-17	73.4	0.014	0.02	0.74	1.01				
Total April 17 to June 17	205.967	0.04	0.02	1.859	0.90				

Annexure-C

GENERATION, AUX. & GT Losses (MUs)						UBDC		Remarks/Action Plan
MONTH	GEN.	AUX	%	GT	%			
Apr-16	16.995	0.055	0.32	0.056	0.33			
May-16	22.47	0.070	0.31	0.070	0.31			
Jun-16	38.69	0.084	0.22	0.146	0.38			
July-16	31.315	0.088	0.28	0.113	0.36			
Aug-16	40.75	0.080	0.20	0.150	0.37			
Sept.-16	48.51	0.090	0.19	0.180	0.37			
Oct-16	37.32	0.080	0.21	0.100	0.27			
Nov-16	30.57	0.070	0.23	0.070	0.23			
Dec-16	27.29	0.092	0.34	0.057	0.21			
Jan-17	17.05	0.096	0.56	0.036	0.21			
Feb-17	14.75	0.085	0.58	0.030	0.20			
March-17	15.34	0.078	0.51	0.044	0.29			
Total of FY 2016-17	341.05	0.968	0.28	1.052	0.31			
April-17	12.16	0.054	0.44	0.038	0.31			
May-17	43.78	0.081	0.19	0.14	0.32			
June-17	45.75	0.084	0.18	0.15	0.33			
Total April 17 to June 17	101.69	0.219	0.22	0.328	0.32			

Auxiliary losses are within permissible limit.

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Remarks/Action Plan

MONTH	GENERATION, AUX. & GT Losses (MUs)				RSD %
	GEN.	AUX	%	GT	
Apr-16	75.32	0.17	0.23	0.08	0.11
May-16	72.32	0.18	0.25	0.06	0.08
Jun-16	162.37	0.39	0.24	0.15	0.09
July-16	162.26	0.39	0.24	0.15	0.09
Aug-16	164.43	0.41	0.25	0.14	0.09
Sept.-16	197.65	0.47	0.24	0.18	0.09
Oct-16	132	0.35	0.27	0.18	0.14
Nov-16	89.73	0.25	0.28	0.05	0.06
Dec-16	82.92	0.16	0.19	0.12	0.14
Jan-17	58.76	0.12	0.20	0.08	0.14
Feb-17	47.15	0.10	0.21	0.06	0.13
March--17	61.22	0.12	0.20	0.08	0.13
Total of FY					
2016-17	1306.13	3.11	0.24	1.33	0.10
April-17	66.35	0.14	0.21	0.08	0.12
May-17	209.28	0.46	0.22	0.24	0.11
June-17	227.70	0.52	0.23	0.24	0.11
Total April 17 to					
june 17	503.33	1.12	0.22	0.56	0.11

Auxiliary losses are within permissible limit.

GENERATION, AUX. & GT Losses (MUs)		ASHP			
MONTH	GEN.	AUX	%	GT	%
Apr-16	41.153	0.055	0.134	0.122	0.296
May-16	73.440	0.066	0.090	0.149	0.203
Jun-16	76.420	0.058	0.076	0.159	0.208
July-16	89.408	0.066	0.074	0.156	0.174
Aug-16	84.16	0.060	0.07	0.16	0.19
Sept.-16	75.480	0.070	0.093	0.150	0.199
Oct-16	71.41	0.060	0.084	0.140	0.196
Nov-16	18.61	0.037	0.199	0.310	1.666
Dec-16	13.15	0.016	0.122	0.027	0.205
Jan-17	42.56	0.050	0.117	0.103	0.242
Feb-17	47.92	0.047	0.098	0.098	0.205
March--17	40.15	0.045	0.112	0.085	0.212
Total of FY 2016-17	673.859	0.630	0.093	1.659	0.246
April-17	17.609	0.021	0.119	0.025	0.142
May-17	81.100	0.067	0.083	0.121	0.149
June-17	73.620	0.650	0.883	0.118	0.160
Total April 17 to June 17	172.329	0.153	0.089	0.264	0.153

Auxiliary losses are within permissible limit.

		GENERATION AUX. & GT Losses (MUs)				MHP		Remarks/Action Plan
MONTH	GEN.	AUX	%	GT	%			
Apr-16	42.324	0.103	0.243	0.684	1.616		<p>1. Auxiliary losses are within permissible limit.</p> <p>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) 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. The losses in these cables are also contributing to GT losses</p> <p>3. G.T. losses are higher as the transformers installed at PH-1 to PH-4 of Mukerian Hydel project are very old and were commissioned during 1983, 1988 & 1989. P.O. for procurement of 2 No. 20MVA new transformers has been placed upon M/s BBL.</p> <p>4. Work for replacement of 132 KV CT/PTs as per State grid Code is in progress.</p>	
May-16	77.748	0.137	0.176	1.185	1.524			
Jun-16	56.235	0.140	0.249	0.819	1.456			
July-16	65.470	0.166	0.254	0.868	1.326			
Aug-16	113.53	0.19	0.17	1.49	1.310			
Sept-16	122.550	0.190	0.155	1.600	1.306			
Oct-16	84.920	0.169	0.199	1.094	1.286			
Nov-16	111.150	0.185	0.166	1.303	1.172			
Dec-16	117.690	0.185	0.157	1.528	1.298			
Jan-17	114.543	0.186	0.162	1.438	1.255			
Feb-17	118.330	0.165	0.139	1.430	1.208			
March-17	89.460	0.161	0.180	1.068	1.194			
Total of FY 2016-17	1113.950	1.977	0.177	14.507	1.302			
April-17	29.171	0.089	0.305	0.467	1.601			
May-17	73.580	0.145	0.197	0.935	1.271			
June-17	76.620	0.195	0.255	0.917	1.197			
Total April 17 to June 17	179.371	0.429	0.239	2.319	1.293			

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ANNEXURE-D

To implement the various recommendations made in the CPRI report for fuel savings and cost reduction:-

PSPCL thermal plants are in process of implementation of various recommendations made in fuel audit report and has already implemented most of the recommendations. The latest status is as under:-

Sr. No.	PSERC directives	Status of implementation
1.	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 the matter has already been taken up with Ministry of Coal and Ministry of Power by CE/Fuel.
2.	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 have implemented the decision.
3.	To bring down the drop in GCV between the receipted coal and bunkered coal within 150 KCal/kg.	All out efforts are being made to bring down drop in GCV. The drop in GCV between receipted coal and bunkered coal is within 150 Kcal/kg for most of the months.
4.	PSPCL should explore third party validation of the washery energetic and may be got carried out once in a month.	Policy formulation on disposal of washery rejects/middling/surplus coal has been drafted by Ministry of Coal, Govt and for greater acceptability of tests like PGT, review of performance washery etc., these can be conducted in the presence of independent third party such as CSIR labs in addition to CIL and CCO and may be called as PGT committee, which is under consideration.

5.	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 and the values are being submitted to PSERC regularly on quarterly basis.
6.	PSPCL is directed to get the audit of its captive mine at Pachhwarra 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.	M/s CIMFR, Dhanbad have carried out the audit of Pachhwarra (Central) captive mine for the period 06.01.2014 to 30.6.2014 against Work order No. 2/FRM-60 dated 05.09.2013 placed by GHTP on the firm. The report of the same has been submitted to PSERC. The annual mine audit could not be conducted thereafter because of uncondusive law and order situation at mine site and non-restart of mining operation since 01.04.2015. As and when the situation improves there, the annual mine audit will be resumed.

Annexure-E

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/committee of ASEs / Sr. Xeris, Chief Chemist / Dy. Chief / Sr. Chemist 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.	<p>GGSSSTP 1 no. in-motion weigh bridge is installed at GGSSSTP and has been upgraded for online data transfer and data is being transferred On-line.</p> <p>GHTP There are two No. In-motion weighbridges installed at GHTP. The software in respect of both</p>

<p>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 computers of In motion Weighbridge and server of computer network of the Plant is pending.</p> <p>There are 2 No. in-motion weigh bridges installed at GNDTP. The software in respect of both the weighbridges has been upgraded to fetch all data recorded online to other offices. 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.</p>	
<p>Fuel oil-Recording (Quantity)</p> <p>3. It is recommended that in GNDTP also, the wagon dip level measurement may be taken as the primary measurement for recording receipt quantity.</p>	
<p>Coal Sampling</p> <p>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.</p>	<p>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 takes, 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 on sample basis.</p>
<p>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.</p>	<p>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.</p> <p>Instructions regarding not to divulge the random table details before hand are already being compiled with.</p> <p>GNDTP : At the first instance, one Auger machine has been purchased by GHTP Lehra Mohabbat for trial run for all PSPCL Thermal Plants. The trial sampling of Auger has been completed at GNDTP. However, a committee comprising of 7 No. officers (4 No. ASE's/Sr.XENs and 3 No. officers from Chemical Dept.) has already been formed for performing random quality checks of received & bunkered coal and monitoring the process of sampling & analysis.</p> <p>GHTP : An Auger sampler on shared basis among all thermal plants of PSPCL has been procured by GHTP and has been made operational for sampling.</p> <p>GGSSTP : There is no automatic sampler available at GGSSTP.</p>

	<p>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.</p>	<p>Auger sampler has been procured by GHTP. Its effectiveness is being observed at GHTP and further will be observed at GGSSTP. This issue stands implemented. During reduction process of coal samples, coal density measurement has been started to keep general record of coal density for particular coal colliery.</p>
6.		
	<p>Coal consumption calculation & verification of stocks Coal stock verification and reconciliation may be done once a month.</p>	<p>Physical verification and reconciliation of stock is being done by Technical Audit, wing of PSPCL, Patiala on quarterly basis. 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. In house coal stock assessment is carried out at the end of each month.</p>
7.		
	<p>The coal stock verification must be in the presence of the committee of senior level officers as indicated in section 2.1.1.</p>	<p>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. Monthly in house assessment of coal stock is being carried out at the plant regularly in the presence of senior level officers i.e. Sr.Xen/CHP (Op), Sr.Xen/Civil & ASE/F&E.</p>
8.		
	<p>Belt weighers: Belt weighers may be installed for all 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 can be 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.</p>	<p>GGSSTP 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 with M/s EIP TPL (who has installed the same at MAHAGENCO, Chanderpura TPS) are being re-examined and will be implemented accordingly.</p>
9.		
	<p>GHTP Belt weighers have already been installed for all conveyors feeding to all Units before entrance to the bunkers & are functional. For part upgradation, microprocessor based interfaces for 4 No. belt weighers have been installed.</p> <p>GNDTP</p>	

		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 frozen 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 frozen values. Monthly in house assessment of coal stock is being carried out at the plant regularly.
	Fuel oil Reporting (quantity)	
11.	The reporting of the reconciled consumption of fuel oil must be on a monthly basis.	Oil is reconciled and figures are frozen on monthly basis after receipt of final report by technical audit wing of PSPCL at end of each quarter. The in-house assessment of oil is already being done 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.	All out efforts are being made to bring down the drop in GCV. Strict monitoring of process of coal sampling and analysis is being done to minimise the difference between the GCV of received and bunkered coal. As a result the drop in GCV is within 150 kcal/kg for most of the occasions.
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.	PSPCL has signed Tripartite agreement with CIMFR & CIL subsidiaries on 19.09.2016 for undertaking work of third party sampling for coal quality monitoring by CIMFR at loading ends. For other collieries, sampling is already being done strictly as per various provisions of the FSAs at plant end.
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. A Truck Mounted Dust Suppression System has also been procured and put into service to control the dust in the coal yard and the other area of coal handling plant and to avoid hot spots. GHTP 9 no. Auto Dust Suppression systems have been installed on conveyor nos. 3-A/B, 10-A/B, 15, 23-A/B & 30-A/B. 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.	At each PSPCL plant coal compactor are being used for compaction of coal heaps.
18.	Coal-Method of testing fuel quality at site 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 have implemented the decision. GCV is being determined using bomb calorimeter.
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 subsidiaries 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.
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.	A panel/committee of ASEs / Sr. Xens, Chief Chemist / Dy. Chief/ Sr. Chemist 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.
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 party central laboratories whose result must be final, such as the following: <ul style="list-style-type: none"> • Central Institute of Mining & Fuel Research (CIMFR) (Formerly CFRI), Nagpur. • Central Institute of Mining & Fuel Research (CIMFR) (Formerly CFRI), Dhanbad. • CPRI, Bangalore. 	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. 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. Moreover, the GGSSTP and GHTP have coal testing laboratories which are now NABL accredited so there is no need to check the GCV in other laboratories.
22.	It is recommended to go for additional set of sample primary and secondary crushing equipment including pulverisers.	GGSSTP is already implemented the decision. having. New Grinders have been installed and are working satisfactorily. 4 No. new Jaw crusher have been procured and are being used. GHTP & GNDTP
23.	Presently, the three stations are having only bomb	Additional set of crushers and grinders have been procured and installed. Thermal Plants have implemented the decision. One number additional automatic bomb calorimeter has

	<p>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.</p> <p>Basis for working out station heat rate (SHR)</p> <p>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.</p>	<p>been procured, installed and commissioned at each plant</p>
24	<p>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.</p>	<p>All out efforts are being made to bring down the drop in GCV. GCV of coal is being measured and supplied to PSERC on quarterly basis.</p>
25	<p>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.</p>	<p>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 one 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. Oil consumption is calculated and finalized at end of each month with dip stick, so SHR is calculated and reported on monthly basis.</p>
26	<p>Fuel cost- PAYMENTS ASSOCIATED WITH FUEL RELATED COSTS, REASONS FOR HIGH LOSS</p> <p>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.</p>	<p>Policy formulation on disposal of washery rejects/middling/surplus coal has been drafted by Ministry of Coal, GoI and for greater acceptability of tests like PGT, review of performance washery etc., these can be conducted in the presence of independent third party such as CSIR labs in addition to CIL and COO and may be called as PGT committee, which is under consideration.</p>
27	<p>The coal cost (landed price of coal at the (TPS) can be evaluated in three formats: $Rs./t = (coal\ cost + freight)/receipt\ weight$ $Rs./kWh = (coal\ cost + freight)/energy\ generated$ $Rs./GCal = (coal\ cost + freight)/(receipt\ weight \times GCV\ of\ receipt\ coal)$ converted in GCal to have it in comparable no. values.</p>	<p>Agreed, the coal costs can be evaluated in all the three given formats.</p>

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<p>Transit loss (TL)</p>	<p>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.</p>	<p>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. The loss in weight due to windage & evaporation of moisture is unavoidable over a long distance. Efforts are being made to bring the washed coal to equilibrium with respect to moisture before loading.</p>
<p>Demurrages</p>	<p>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 tippers.</p>	<p>GGSTP Beetle chargers of Wagon tippler No. 1, 2 & 3 are in working order however, these are quite fault prone and also increases the unloading period. Beetel charges at wagon tippers No. 4 & 5 are not in operation since long. There is space constraint due to which it is not economically viable to install new side arm chargers. Therefore, no further improvement is possible in existing system.</p> <p>GHTP Both side arm chargers of wagon tippler of Stage-1 are working. There is no provision for beetle charger or side arm charger at wagon tippers of GHTP Stage-II.</p> <p>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.</p> <p>GGSTP & 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 and the supply of coal free from boulders and stones.</p> <p>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. However, the work to increase the angle of conveyors and speed of drive for faster conveying of coal is completed. One no Vibratory Feeder has already been replaced with latest design electro-mechanical feeder. Old reclaim Vibratory Feeders are also proposed to be replaced in a phased manner.</p>
<p>30</p>	<p>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 tipping systems and coal conveying may be studied for removal of existing bottlenecks and for up-gradation wherever it is critical.</p>	<p>operative.</p>
<p>31</p>	<p>Detailed study and up-gradation of coal conveying system especially at GNDTP which is using vibratory</p>	<p>reclaim Vibratory Feeders are also proposed to be replaced in a phased manner.</p>

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32	<p>feeders. Rail tracking system through GPS or alternative technologies.</p>	<p>GGSSTP Information regarding Loads On Run is already available on daily basis through liasioning agent M/s KCT Delhi. The details provided by the agent are sufficient for monitoring the rakes. However, 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 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.</p>
33	<p>Grab cranes for removal of stones from the wagon tippler area is present in Ropar. The same may be installed in GNDTP & GHTP.</p>	<p>GGSSTP Already installed at GGSSTP. GHTP 3 No. Grabber and loader machines are functional 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, Pocolain and Manual Unloading Hopper to avoid demurrage. Picking of stones before entry to Wagon Tippler area is not possible.</p>
34	<p>Rotary pneumatic or electrical hammers may be used for crushing coal lumps at the wagon tippler in place of manual hammering.</p>	<p>GGSSTP Already 3 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 hammer is not required.</p>

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35	<p>Penal overloading charges(POL) Since loading is in the scope of Monnet, POL may be brought into the scope of Monnet.</p>	<p>GNDTP Due to space constraints at existing Wagon Tippler Hopper, proposal to install Rotary pneumatic or electrical hammers is not feasible.</p>
36	<p>Costs associated with stones and non-fuel foreign materials in coal. Frequent visits and inspections at the colliery loading end is essential to minimize the receipt of stones</p>	<p>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.</p>
37	<p>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.</p>	<p>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. Now, CIL subsidiaries have been started dispatching of sized coal free from stones and there is improvement in coal quality. As per FSA signed with various CIL subsidiaries, stones are to be distributed proportionate to the supplies from various sources of coal. Matter was taken up with CIL authorities but they did not agree and have insisted that the stones are being divided as per the FSA. Still matter is with ADRM for consideration & will be discussed with CIL during reconciliation.</p>

38	<p>The joint witness of weighment and quality determination at the sending end must be fully utilized for ensuring that quality and quantity are in order.</p>	<p>Quantity of each rake is strictly supervised by M/s KCT and Bros. The work of 3rd party sampling and analysis at loading end by M/s CIMFR has been started w.e.f. 1.11.2016. For other collieries, sampling & analysis is already being done strictly as per various provisions of the FSAs at plant end.</p>
39	<p>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.</p>	<p>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, the matter is being taken up with Ministry of coal and MoP by PSPCL.</p>
40	<p>FSA with captive mines (Panem)-STUDY OF FUEL SUPPLY AGREEMENTS (FSAs) 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.</p>	<p>The Supreme Court vide its order dated 24.09.2014, cancelled 214 coal blocks out of total 218 coal blocks allocations made from 1993 to 2010. The Pachwara (Central) coal block allocated to PSEB (now PSPCL) was also cancelled. As per the order, the supply from this coal block was allowed only upto 31.03.2015. Even though this mine was reallocated to PSPCL but the coal supply from captive coal mine is yet to resume. The process for appointing Mine Developer and Operator (MDO) is under process.</p>
41	<p>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</p>	<p>The Supreme Court vide its order dated 24.09.2014, cancelled 214 coal blocks out of total 218 coal blocks allocations made from 1993 to 2010. The Pachwara (Central) coal block allocated to PSEB (now PSPCL) was also cancelled. As per the order, the supply from this coal block was allowed only upto 31.03.2015. Even though this mine was reallocated to PSPCL but the coal supply from captive coal mine is yet to</p>

<p>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.</p>	<p>resume. The process for appointing Mine Developer and Operator (MDO) is under process.</p>
<p>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.</p>	<p>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.</p>
<p>Analysis of details of FSA:</p>	
<p>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.</p>	<p>Joint Sampling of the Raw coal is being carried out by the washery Operator and CCL. GCV of each and every rake received at plant is determined and documented. As per amendment yield has been specified w.r.t. input coal.</p>
<p>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.</p>	<p>Same as at Sr. No.26 above.</p>
<p>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.</p>	<p>Same as at Sr. No.26 above.</p>



	<p>GHTP & GGSSTP : As per Sr.no. 13 of amendment-3 dt 29-6-15 of contract agreement with M/s Monnet, the weighment of clean coal done on In-motion weigh bridges installed at power plants of PSPCL will be final even after provision under article no. 6.6.5 are complied with by the company. The company shall have the right to witness the weighment and check the calibration of these weighbridges. However, the cushion in transit loss as per directive of PSERC issued from time to time will be allowed on quarterly basis.</p> <p>GNDTP : 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 quality and weighment 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.</p> <p>Accordingly in amendment-III to the contract with Monnet, dt. 29-6-15, it has been added that quality and quantity of beneficiated coal at unloading ends i.e. PSPCL plant end will be final even after the Commissioning of telemetry at loading ends.</p> <p>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</p> <p>Coal lost due to increase in moisture is being booked to the firm as per contract agreement with the firm.</p>
46	<p>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.</p>
47	<p>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.</p>
48	<p>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.</p>

49	<p>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).</p>	<p>As far as quality of washery process is concerned, GCV, ash & moisture of coal lifted by washery are determined jointly with CCL authorities as per contract agreement with M/s Monnet. GCV of raw coal has been specified as per amendment of contract. Also sampling frequency of the coal is same as that of the rake sampling at plants.</p>
50	<p>The transit loss may be fully included in the scope of the liaisoning 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.</p>	<p>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.</p>

Annexure-F 1 ~~58~~

DEFAULTING AMOUNT OUTSTANDING AGAINST GOVT. DEPARTMENT CONNECTIONS ENDING JUNE-2017 (UNAUDITED)							
SR.NO	DEPARTMENT	ZONE					(Rs. in lacs)
		BORDER	CENTRAL	NORTH	SOUTH	WEST	TOTAL
1	CIVIL DEFENCE	3.33	1.61	7.02	0.00	0.94	12.90
2	DC OFFICE	116.55	153.66	32.81	52.43	101.23	456.68
3	PSTC	71.28	0.25	0.82	8.08	0.95	81.38
4	PUNJAB POLICE	65.89	143.91	72.17	377.36	67.10	726.43
5	M.C.WATER WORKS	3392.30	1189.03	146.92	929.37	5587.42	11245.04
6	PUBLIC HEALTH	7535.14	1221.65	9382.49	12452.28	9834.22	40425.78
7	MES/BSF	0.00	0.00	1.24	0.00	0.00	1.24
8	SDM OFFICE	33.40	23.04	16.43	33.34	28.52	134.73
9	TEHSIL COMPLEX	59.40	98.05	86.26	98.71	59.48	401.90
10	PUDA COMPLEX	0.00	4.94	0.34	112.48	9.58	127.34
11	DISTT. SPORTS OFFICE	0.00	0.00	0.00	14.35	1.81	16.16
12	GOVT.HOSPITAL/DISPENSARY	297.77	291.22	316.13	317.07	269.18	1491.37
13	FOREST DEPARTMENT	11.11	5.03	7.54	27.07	5.24	55.99
14	IRRIGATION DEPTT.	9016.34	3.80	111.75	151.72	1269.02	10552.63
15	PWD ELECY.DEPTT.	5.53	6.25	9.96	29.61	42.19	93.54
16	PWD B&R	32.11	16.97	2.03	67.71	2.93	121.75
17	PUNSUP	0.00	0.00	0.00	0.00	0.00	0.00
18	GOVT.SCHOOL/COLLEGE/ITI	72.57	22.46	17.50	40.67	75.20	228.40
19	M.C./LOCAL BODIES	3641.10	127.83	271.84	932.54	2389.94	7363.26
20	AGRICULTURE DEPTT	0.76	0.75	10.60	0.24	14.10	26.45
21	CENTRAL DEPARTMENT	33.33	18.79	6.47	1.83	3.79	64.21
22	ANIMAL HUSBANDARY	0.59	1.67	3.99	5.55	4.97	16.77
23	SOCIAL DEPARTMENT	0.00	0.00	5.26	28.06	6.32	39.64
24	PANCHYATI RAJ	398.85	215.40	25.80	710.65	273.95	1624.65
25	STATISTICAL DEPARTMENT	0.00	0.00	0.00	0.00	0.00	0.00
26	FOOD AND SUPPLY	0.61	0.19	0.77	0.44	0.76	2.77
27	REVENUE DEPARTMENT	7.67	12.27	0.03	1.43	2.20	23.60
28	SEWERAGE BOARD	95.59	17.39	0.52	675.88	217.11	1006.59
29	BDO OFFICE	21.95	0.93	0.16	4.45	36.10	63.59
30	ZILA PARISHAD	0.00	1.23	0.47	0.05	2.22	3.97
31	WELFARE DEPARTMENT	0.00	2.62	1.67	0.00	4.96	9.25
32	CID	0.00	0.00	0.00	0.00	0.00	0.00
33	CIVIL COURTS	71.74	117.57	11.03	4.37	50.38	255.09
34	JAIL DEPTT.	88.62	18.28	6.02	88.24	0.00	201.16
35	OTHER DEPARTMENTS	268.16	232.29	527.95	6782.22	198.64	8009.26
	TOTAL	25341.69	3949.08	11084.09	23948.20	20560.45	84883.51

SOURCE OF DATA : EIC/CE, DS CONCERNED.

AAO/RM

June 2017/17
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Annexure 9

Short Term Corporate Commission (Over Allocated) 20.01.2017

Block	Predicted Day-ahead Demand MW	Remaining energy capacity MW	Required Total Availability MW	Shortage If any MW	Required SCS capacity MW	Required DA Availability (as per contract) MW	Short Term (Bilateral + Bidding) MW	UC Involvement Short Term MW	Applied In-Day flexibility (Down) MW	Total ATC MW	Complies (Available for use) (Available) MW	Entitlement from all named Parties MW	Capable Available for Day-ahead (Including RT) MW	Successful Predictions (on Estimate) (including RT) MW	Successful bids MW	Predicted Estimates (on The RTWB) MW
0000-0115	4994	-200	6294	1377	2895	149	0	2441	2545	2800	2028	0	3026	3177	0	3103
0015-0210	4984	-200	6184	1377	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	3100
0030-0315	7917	-200	8117	1408	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	3081
0045-0100	7059	-200	6859	1450	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2993
0100-0115	7210	-200	7010	1838	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2993
0115-0130	7177	-200	7077	1206	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	3018
0130-0145	7250	-200	7050	1679	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	3018
0145-0200	7240	-200	7040	1684	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2922
0200-0215	7036	-200	6836	1514	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2935
0215-0230	6377	-200	6177	1431	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2841
0230-0245	4815	-200	4615	1317	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2777
0245-0300	4671	-200	4471	1326	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2841
0300-0315	4903	-200	4703	1326	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2777
0315-0330	6904	-200	6704	1573	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2866
0330-0345	6904	-200	6704	1573	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2866
0345-0400	6277	-200	6077	1471	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0400-0415	5814	-200	5614	1450	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0415-0430	5814	-200	5614	1450	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0430-0445	6646	-200	6446	1502	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0445-0500	6646	-200	6446	1502	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0500-0515	6862	-200	6662	1327	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0515-0530	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0530-0545	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0545-0600	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0600-0615	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0615-0630	7106	-200	6906	1440	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0630-0645	7106	-200	6906	1440	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0645-0660	7083	-200	6883	1349	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0660-0675	7083	-200	6883	1349	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0675-0690	7083	-200	6883	1349	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0690-0705	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0705-0720	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0720-0735	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0735-0750	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0750-0805	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0805-0820	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0820-0835	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0835-0850	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0850-0905	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0905-0920	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0920-0935	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0935-0950	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
0950-1005	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1005-1020	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1020-1035	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1035-1050	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1050-1105	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1105-1120	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1120-1135	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1135-1150	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1150-1205	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1205-1220	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1220-1235	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1235-1250	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1250-1305	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1305-1320	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1320-1335	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1335-1350	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1350-1405	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1405-1420	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1420-1435	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1435-1450	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848
1450-1515	6835	-200	6635	1316	2895	100	0	2441	2545	2800	2028	0	3026	3177	0	2848

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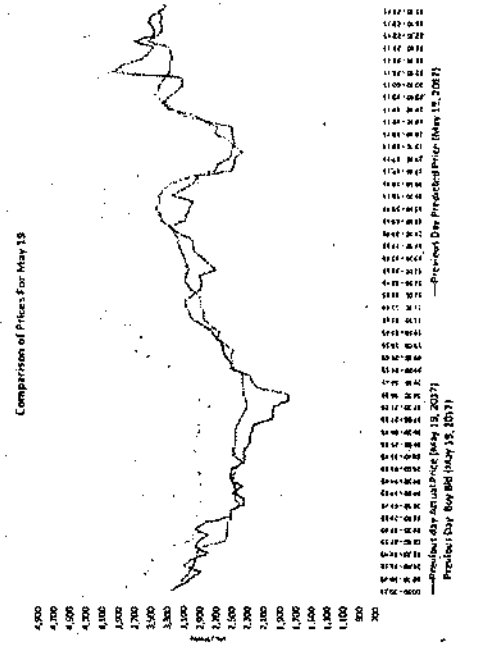
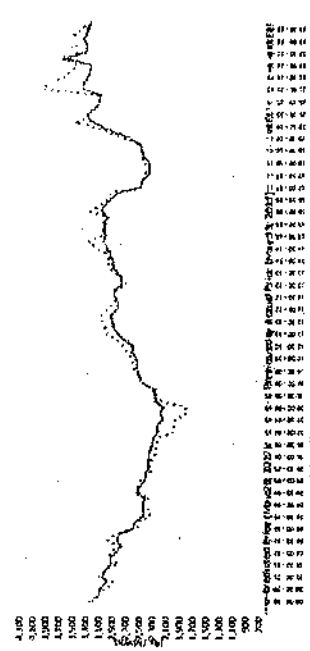
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TABLE 2 - SHORT TERM PRICE FORECAST (DAY 4 HEAD) - May 20, 2017

Block	Predicted Price (May 20, 2017)	Previous Day Actual Price (May 19, 2017)	Previous Day Predicted Price (May 19, 2017)	Previous Day Buy Bid (May 19, 2017)	MAPE (% Absolute Error Between Predicted and Actual Price (May 19, 2017))	Buy Bids Cleared (C) /Uncleared (U) for Previous Day
0020-0015	3,033.01	3,250.67	3,224.93	3,264.70	0.8%	C
0015-0030	3,160.35	3,101.79	3,154.09	3,249.38	1.7%	C
0030-0045	3,080.70	3,000.69	3,053.16	3,083.16	3.1%	C
0045-0100	2,993.48	2,894.41	3,028.16	3,059.32	3.7%	C
0100-0115	3,050.42	3,101.85	3,288.63	3,287.76	3.7%	C
0115-0130	3,015.98	3,000.44	3,261.33	3,482.60	1.3%	C
0130-0145	2,924.72	3,476.93	3,400.07	3,350.61	5.6%	C
0145-0200	2,934.16	2,946.08	2,901.28	3,223.63	2.2%	C
0200-0215	2,984.14	2,929.38	2,985.10	2,997.20	11.0%	C
0215-0230	2,777.37	2,800.17	2,878.23	2,983.94	7.9%	C
0230-0245	2,851.36	2,874.33	2,871.89	2,982.69	13.5%	C
0245-0300	2,796.64	2,847.45	2,857.51	3,007.03	10.2%	C
0300-0315	2,606.26	3,049.59	3,049.58	2,948.65	13.3%	C
0315-0330	2,581.99	3,024.76	3,024.91	2,972.31	0.2%	C
0330-0345	2,449.32	2,849.32	2,849.32	2,913.87	2.5%	C
0345-0400	2,452.24	2,866.66	2,866.66	2,847.76	4.2%	C
0400-0415	2,460.12	2,499.92	2,499.92	2,651.83	4.1%	C
0415-0430	2,427.05	2,360.77	2,426.52	2,880.51	0.9%	C
0430-0445	2,566.29	3,000.30	2,495.66	2,920.63	1.3%	C
0445-0500	2,497.55	2,529.13	2,488.77	2,926.35	1.6%	C
0500-0515	2,442.93	2,883.84	2,449.33	2,881.86	2.3%	C
0515-0530	2,415.77	2,854.00	2,349.43	2,933.57	1.5%	C
0530-0545	2,387.83	2,845.35	2,349.75	2,841.87	5.6%	C
0545-0600	2,383.06	2,349.61	2,492.54	2,987.17	6.1%	C
0600-0615	2,376.35	2,279.37	2,468.10	2,943.81	8.3%	C
0615-0630	2,350.64	2,834.76	2,461.18	2,941.21	8.0%	C
0630-0645	2,320.80	2,748.92	2,463.10	2,927.72	9.5%	C
0645-0700	2,303.95	2,777.25	2,334.95	2,925.14	9.5%	C
0700-0715	2,235.17	2,711.89	2,398.45	2,876.02	20.0%	C
0715-0730	2,251.78	2,608.09	2,010.91	2,355.50	12.1%	C
0730-0745	2,172.66	2,612.90	1,985.19	2,761.52	16.8%	C
0745-0800	2,200.73	2,754.06	1,801.97	2,338.46	29.8%	C
0800-0815	2,160.94	2,697.07	1,820.02	2,385.15	29.4%	C
0815-0830	2,276.15	2,846.43	2,185.56	2,370.55	8.5%	C
0830-0845	2,280.99	2,958.31	2,249.02	2,376.44	5.7%	C
0845-0900	2,312.43	3,035.49	2,279.49	2,372.74	0.1%	C
0900-0915	2,475.86	3,227.34	2,529	2,486.83	1.7%	C
0915-0930	2,526.83	3,457.14	2,529.91	2,502.56	1.1%	C
0930-0945	2,535.99	3,361.14	2,595.43	2,531.52	2.6%	C
0945-1000	2,565.13	3,787.16	2,679.33	2,493.49	4.9%	C
1000-1015	2,587.60	3,534.42	2,649.29	2,597.88	2.0%	C
1015-1030	2,648.52	3,592.48	2,716.77	2,713.73	0.1%	C
1030-1045	2,681.35	3,576.48	2,769.38	2,677.56	3.3%	C
1045-1100	2,775.58	3,727.07	2,869.43	2,795.85	2.6%	C
1100-1115	2,865.14	4,140.62	3,020.51	2,875.43	4.8%	C
1115-1130	2,919.57	4,173.57	3,047.81	2,823.20	5.7%	C
1130-1145	2,930.88	3,976.05	3,088.77	2,907.79	5.9%	C
1145-1200	2,964.73	3,968.28	3,102.53	2,935.07	6.0%	C
1200-1215	2,860.01	4,096.69	3,000.12	2,946.93	1.8%	C

No. of blocks in which bids are cleared (May 19, 2017) 96
 No. of blocks in which bids are not cleared (May 19, 2017) 0
 No. of block in which price was not formed 0

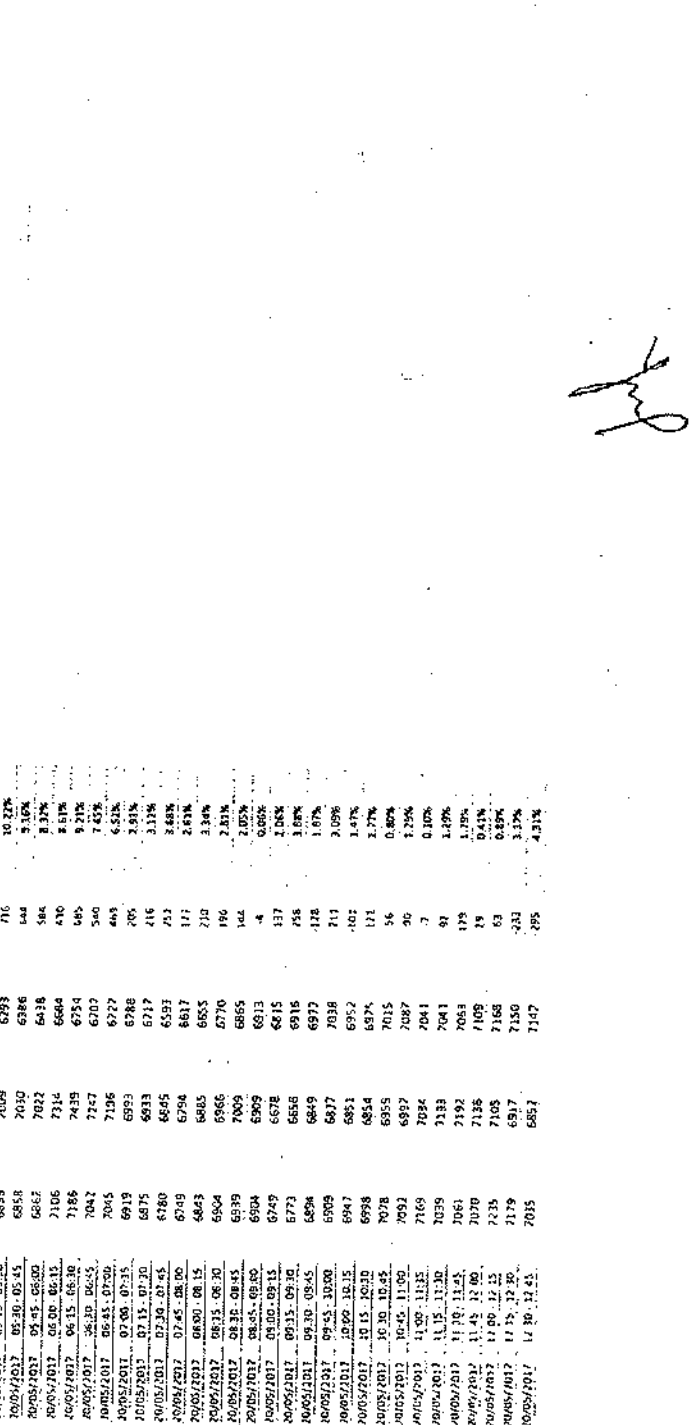


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Account	Forecasted	Actual	Change	% Change
2000000000	6608	6832	224	3.4%
2000000001	6650	6788	138	2.1%
2000000002	6819	6802	-17	-0.2%
2000000003	6757	6944	187	2.8%
2000000004	7175	6953	-222	-3.1%
2000000005	7031	6807	-224	-3.2%
2000000006	5990	6706	716	12.0%
2000000007	5900	6556	656	11.1%
2000000008	6841	6440	-401	-5.9%
2000000009	6815	6287	-528	-7.7%
2000000010	6871	6786	-85	-1.2%
2000000011	6857	6740	-117	-1.7%
2000000012	6904	6082	-822	-11.9%
2000000013	6804	6045	-759	-11.0%
2000000014	6773	6014	-759	-11.2%
2000000015	6836	6046	-790	-11.6%
2000000016	6664	5167	-1497	-22.6%
2000000017	6664	5192	-1472	-22.1%
2000000018	6664	5256	-1408	-21.1%
2000000019	6825	5373	-1452	-21.3%
2000000020	6835	5264	-1571	-22.8%
2000000021	6835	5293	-1542	-22.6%
2000000022	6858	6386	-472	-6.9%
2000000023	6867	6438	-429	-6.2%
2000000024	7106	6604	-502	-7.1%
2000000025	7186	6754	-432	-6.0%
2000000026	7042	6702	-340	-4.8%
2000000027	7045	6727	-318	-4.5%
2000000028	6919	6788	69	1.0%
2000000029	6875	6717	-158	-2.3%
2000000030	6800	6593	-207	-3.0%
2000000031	6749	6593	-156	-2.3%
2000000032	6749	6593	-156	-2.3%
2000000033	6749	6593	-156	-2.3%
2000000034	6749	6593	-156	-2.3%
2000000035	6749	6593	-156	-2.3%
2000000036	6749	6593	-156	-2.3%
2000000037	6749	6593	-156	-2.3%
2000000038	6749	6593	-156	-2.3%
2000000039	6749	6593	-156	-2.3%
2000000040	6749	6593	-156	-2.3%
2000000041	6749	6593	-156	-2.3%
2000000042	6749	6593	-156	-2.3%
2000000043	6749	6593	-156	-2.3%
2000000044	6749	6593	-156	-2.3%
2000000045	6749	6593	-156	-2.3%
2000000046	6749	6593	-156	-2.3%
2000000047	6749	6593	-156	-2.3%
2000000048	6749	6593	-156	-2.3%
2000000049	6749	6593	-156	-2.3%
2000000050	6749	6593	-156	-2.3%



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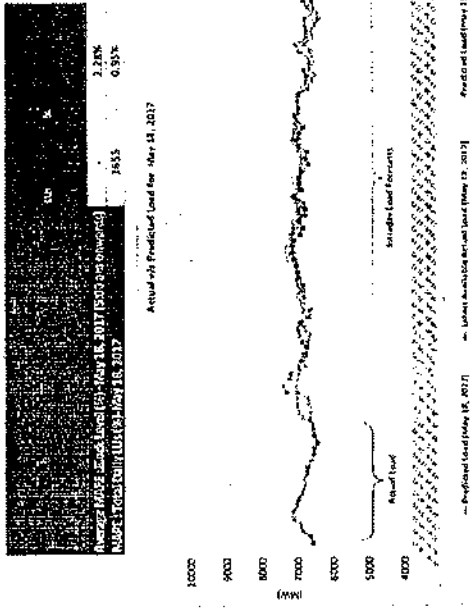
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10
mg

2005/2017	12.45	13.00	6963	7181	-236	3.25%
2006/2017	13.00	13.15	6929	6925	37	0.17%
2007/2017	13.15	13.20	6906	6939	-33	0.18%
2008/2017	13.20	13.25	6881	7290	-408	6.25%
2009/2017	13.25	13.30	7071	7115	-44	2.61%
2010/2017	13.30	13.35	6904	7065	-164	2.89%
2011/2017	13.35	13.40	7123	6940	182	1.72%
2012/2017	13.40	13.45	6900	6959	-59	0.50%
2013/2017	13.45	13.50	6939	6904	35	2.94%
2014/2017	13.50	13.55	6863	7122	-439	6.12%
2015/2017	13.55	13.60	6859	7189	-416	6.11%
2016/2017	13.60	13.65	6937	7181	-443	6.61%
2017/2017	13.65	13.70	6977	7159	-182	2.61%
2018/2017	13.70	13.75	7087	7130	-43	0.94%
2019/2017	13.75	13.80	7073	7134	-61	1.31%
2020/2017	13.80	13.85	7031	7040	9	0.11%
2021/2017	13.85	13.90	7083	7068	15	0.64%
2022/2017	13.90	13.95	7037	7074	-37	0.84%
2023/2017	13.95	14.00	7051	7092	-41	2.84%
2024/2017	14.00	14.05	6960	6930	30	0.86%
2025/2017	14.05	14.10	6980	6988	-8	0.24%
2026/2017	14.10	14.15	6975	6919	56	1.20%
2027/2017	14.15	14.20	6923	6636	287	3.84%
2028/2017	14.20	14.25	6904	6555	349	7.39%
2029/2017	14.25	14.30	6770	6589	181	2.84%
2030/2017	14.30	14.35	6584	6482	102	2.82%
2031/2017	14.35	14.40	6695	6492	203	1.61%
2032/2017	14.40	14.45	6848	6690	158	1.04%
2033/2017	14.45	14.50	6958	6783	175	2.12%
2034/2017	14.50	14.55	6974	6886	86	2.42%
2035/2017	14.55	14.60	6974	6886	86	2.42%
2036/2017	14.60	14.65	6915	6753	162	2.95%
2037/2017	14.65	14.70	6875	6559	316	2.90%
2038/2017	14.70	14.75	6782	6774	8	3.62%
2039/2017	14.75	14.80	6740	6548	192	3.44%
2040/2017	14.80	14.85	6687	6574	113	0.60%
2041/2017	14.85	14.90	6627	6639	-12	0.85%
2042/2017	14.90	14.95	6714	6683	31	3.20%
2043/2017	14.95	15.00	6774	6737	37	3.74%
2044/2017	15.00	15.05	6834	6654	180	2.43%
2045/2017	15.05	15.10	6870	6637	233	3.39%
2046/2017	15.10	15.15	6764	6630	134	1.74%
2047/2017	15.15	15.20	6819	6582	237	4.34%
2048/2017	15.20	15.25	6846	6703	143	1.78%
2049/2017	15.25	15.30	6872	6691	181	2.63%
2050/2017	15.30	15.35	6877	6766	111	3.85%
2051/2017	15.35	15.40	7010	6733	277	4.14%
Total (lurs)			14601	14432	169	3.47%

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Inventory Lead Forecast - May 12, 2017

Date	Book	Inventory	Forecast	Actual	Forecast	Actual	Forecast	Actual	Forecast	Actual	Forecast	Actual	Forecast	Actual	Forecast	Actual	Forecast	Actual	Forecast	Actual	Forecast
19/05/2017	00:30	00:15	7019	6606	0.00%	6606	0.00%	6606	0.00%	6606	0.00%	6606	0.00%	6606	0.00%	6606	0.00%	6606	0.00%	6606	0.00%
19/05/2017	00:15	00:30	1008	6650	0.00%	6650	0.00%	6650	0.00%	6650	0.00%	6650	0.00%	6650	0.00%	6650	0.00%	6650	0.00%	6650	0.00%
19/05/2017	00:00	00:15	6930	6919	0.00%	6919	0.00%	6919	0.00%	6919	0.00%	6919	0.00%	6919	0.00%	6919	0.00%	6919	0.00%	6919	0.00%
19/05/2017	00:45	01:00	7048	6959	0.00%	6959	0.00%	6959	0.00%	6959	0.00%	6959	0.00%	6959	0.00%	6959	0.00%	6959	0.00%	6959	0.00%
19/05/2017	01:00	01:15	7218	7175	0.00%	7175	0.00%	7175	0.00%	7175	0.00%	7175	0.00%	7175	0.00%	7175	0.00%	7175	0.00%	7175	0.00%
19/05/2017	01:15	01:30	7305	7135	0.00%	7135	0.00%	7135	0.00%	7135	0.00%	7135	0.00%	7135	0.00%	7135	0.00%	7135	0.00%	7135	0.00%
19/05/2017	01:30	01:45	7383	7031	0.00%	7031	0.00%	7031	0.00%	7031	0.00%	7031	0.00%	7031	0.00%	7031	0.00%	7031	0.00%	7031	0.00%
19/05/2017	01:45	02:00	7277	6960	0.00%	6960	0.00%	6960	0.00%	6960	0.00%	6960	0.00%	6960	0.00%	6960	0.00%	6960	0.00%	6960	0.00%
19/05/2017	02:00	02:15	6981	6900	0.00%	6900	0.00%	6900	0.00%	6900	0.00%	6900	0.00%	6900	0.00%	6900	0.00%	6900	0.00%	6900	0.00%
19/05/2017	02:15	02:30	6913	6841	0.00%	6841	0.00%	6841	0.00%	6841	0.00%	6841	0.00%	6841	0.00%	6841	0.00%	6841	0.00%	6841	0.00%
19/05/2017	02:30	02:45	6778	6809	0.00%	6809	0.00%	6809	0.00%	6809	0.00%	6809	0.00%	6809	0.00%	6809	0.00%	6809	0.00%	6809	0.00%
19/05/2017	02:45	03:00	6868	6786	0.00%	6786	0.00%	6786	0.00%	6786	0.00%	6786	0.00%	6786	0.00%	6786	0.00%	6786	0.00%	6786	0.00%
19/05/2017	03:00	03:15	7027	6740	0.00%	6740	0.00%	6740	0.00%	6740	0.00%	6740	0.00%	6740	0.00%	6740	0.00%	6740	0.00%	6740	0.00%
19/05/2017	03:15	03:30	7001	6642	0.00%	6642	0.00%	6642	0.00%	6642	0.00%	6642	0.00%	6642	0.00%	6642	0.00%	6642	0.00%	6642	0.00%
19/05/2017	03:30	03:45	6943	6515	0.00%	6515	0.00%	6515	0.00%	6515	0.00%	6515	0.00%	6515	0.00%	6515	0.00%	6515	0.00%	6515	0.00%
19/05/2017	03:45	04:00	6971	6531	0.00%	6531	0.00%	6531	0.00%	6531	0.00%	6531	0.00%	6531	0.00%	6531	0.00%	6531	0.00%	6531	0.00%
19/05/2017	04:00	04:15	6779	6451	0.00%	6451	0.00%	6451	0.00%	6451	0.00%	6451	0.00%	6451	0.00%	6451	0.00%	6451	0.00%	6451	0.00%
19/05/2017	04:15	04:30	6736	6543	0.00%	6543	0.00%	6543	0.00%	6543	0.00%	6543	0.00%	6543	0.00%	6543	0.00%	6543	0.00%	6543	0.00%
19/05/2017	04:30	04:45	6745	6569	0.00%	6569	0.00%	6569	0.00%	6569	0.00%	6569	0.00%	6569	0.00%	6569	0.00%	6569	0.00%	6569	0.00%
19/05/2017	04:45	05:00	7036	6595	0.00%	6595	0.00%	6595	0.00%	6595	0.00%	6595	0.00%	6595	0.00%	6595	0.00%	6595	0.00%	6595	0.00%
19/05/2017	05:00	05:15	6937	6886	0.00%	6886	0.00%	6886	0.00%	6886	0.00%	6886	0.00%	6886	0.00%	6886	0.00%	6886	0.00%	6886	0.00%
19/05/2017	05:15	05:30	7089	7009	0.00%	7009	0.00%	7009	0.00%	7009	0.00%	7009	0.00%	7009	0.00%	7009	0.00%	7009	0.00%	7009	0.00%
19/05/2017	05:30	05:45	7112	7030	0.00%	7030	0.00%	7030	0.00%	7030	0.00%	7030	0.00%	7030	0.00%	7030	0.00%	7030	0.00%	7030	0.00%
19/05/2017	05:45	06:00	7143	7027	0.00%	7027	0.00%	7027	0.00%	7027	0.00%	7027	0.00%	7027	0.00%	7027	0.00%	7027	0.00%	7027	0.00%
19/05/2017	06:00	06:15	7450	7214	0.00%	7214	0.00%	7214	0.00%	7214	0.00%	7214	0.00%	7214	0.00%	7214	0.00%	7214	0.00%	7214	0.00%
19/05/2017	06:15	06:30	7515	7439	0.00%	7439	0.00%	7439	0.00%	7439	0.00%	7439	0.00%	7439	0.00%	7439	0.00%	7439	0.00%	7439	0.00%
19/05/2017	06:30	06:45	7405	7247	0.00%	7247	0.00%	7247	0.00%	7247	0.00%	7247	0.00%	7247	0.00%	7247	0.00%	7247	0.00%	7247	0.00%
19/05/2017	06:45	07:00	7172	7196	0.00%	7196	0.00%	7196	0.00%	7196	0.00%	7196	0.00%	7196	0.00%	7196	0.00%	7196	0.00%	7196	0.00%
19/05/2017	07:00	07:15	7103	6993	0.00%	6993	0.00%	6993	0.00%	6993	0.00%	6993	0.00%	6993	0.00%	6993	0.00%	6993	0.00%	6993	0.00%
19/05/2017	07:15	07:30	7072	6933	0.00%	6933	0.00%	6933	0.00%	6933	0.00%	6933	0.00%	6933	0.00%	6933	0.00%	6933	0.00%	6933	0.00%
19/05/2017	07:30	07:45	6946	6845	0.00%	6845	0.00%	6845	0.00%	6845	0.00%	6845	0.00%	6845	0.00%	6845	0.00%	6845	0.00%	6845	0.00%
19/05/2017	07:45	08:00	6907	6794	0.00%	6794	0.00%	6794	0.00%	6794	0.00%	6794	0.00%	6794	0.00%	6794	0.00%	6794	0.00%	6794	0.00%
19/05/2017	08:00	08:15	7002	6885	0.00%	6885	0.00%	6885	0.00%	6885	0.00%	6885	0.00%	6885	0.00%	6885	0.00%	6885	0.00%	6885	0.00%
19/05/2017	08:15	08:30	7083	6956	0.00%	6956	0.00%	6956	0.00%	6956	0.00%	6956	0.00%	6956	0.00%	6956	0.00%	6956	0.00%	6956	0.00%
19/05/2017	08:30	08:45	7112	7009	0.00%	7009	0.00%	7009	0.00%	7009	0.00%	7009	0.00%	7009	0.00%	7009	0.00%	7009	0.00%	7009	0.00%
19/05/2017	08:45	09:00	7080	6909	0.00%	6909	0.00%	6909	0.00%	6909	0.00%	6909	0.00%	6909	0.00%	6909	0.00%	6909	0.00%	6909	0.00%
19/05/2017	09:00	09:15	6987	6678	0.00%	6678	0.00%	6678	0.00%	6678	0.00%	6678	0.00%	6678	0.00%	6678	0.00%	6678	0.00%	6678	0.00%
19/05/2017	09:15	09:30	6942	6658	0.00%	6658	0.00%	6658	0.00%	6658	0.00%	6658	0.00%	6658	0.00%	6658	0.00%	6658	0.00%	6658	0.00%
19/05/2017	09:30	09:45	7056	6849	0.00%	6849	0.00%	6849	0.00%	6849	0.00%	6849	0.00%	6849	0.00%	6849	0.00%	6849	0.00%	6849	0.00%
19/05/2017	09:45	10:00	7018	6877	0.00%	6877	0.00%	6877	0.00%	6877	0.00%	6877	0.00%	6877	0.00%	6877	0.00%	6877	0.00%	6877	0.00%
19/05/2017	10:00	10:15	7051	6851	0.00%	6851	0.00%	6851	0.00%	6851	0.00%	6851	0.00%	6851	0.00%	6851	0.00%	6851	0.00%	6851	0.00%
19/05/2017	10:15	10:30	7037	6854	0.00%	6854	0.00%	6854	0.00%	6854	0.00%	6854	0.00%	6854	0.00%	6854	0.00%	6854	0.00%	6854	0.00%
19/05/2017	10:30	10:45	7159	6959	0.00%	6959	0.00%	6959	0.00%	6959	0.00%	6959	0.00%	6959	0.00%	6959	0.00%	6959	0.00%	6959	0.00%
19/05/2017	10:45	11:00	7179	6997	0.00%	6997	0.00%	6997	0.00%	6997	0.00%	6997	0.00%	6997	0.00%	6997	0.00%	6997	0.00%	6997	0.00%
19/05/2017	11:00	11:15	7231	7034	0.00%	7034	0.00%	7034	0.00%	7034	0.00%	7034	0.00%	7034	0.00%	7034	0.00%	7034	0.00%	7034	0.00%
19/05/2017	11:15	11:30	7215	7133	0.00%	7133	0.00%	7133	0.00%	7133	0.00%	7133	0.00%	7133	0.00%	7133	0.00%	7133	0.00%	7133	0.00%
19/05/2017	11:30	11:45	7285	7192	0.00%	7192	0.00%	7192	0.00%	7192	0.00%	7192	0.00%	7192	0.00%	7192	0.00%	7192	0.00%	7192	0.00%
19/05/2017	11:45	12:00	7248	7138	0.00%	7138	0.00%	7138	0.00%	7138	0.00%	7138	0.00%	7138	0.00%	7138	0.00%	7138	0.00%	7138	0.00%
19/05/2017	12:00	12:15	7101	7105	0.00%	7105	0.00%	7105	0.00%	7105	0.00%	7105	0.00%	7105	0.00%	7105	0.00%	7105	0.00%	7105	0.00%
19/05/2017	12:15	12:30	7017	6917	0.00%	6917	0.00%	6917	0.00%	6917	0.00%	6917	0.00%	6917	0.00%	6917	0.00%	6917	0.00%	6917	0.00%
19/05/2017	12:30	12:45	7017	6857	0.00%	6857	0.00%	6857	0.00%	6857	0.00%	6857	0.00%	6857	0.00%	6857	0.00%	6857	0.00%	6857	0.00%



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19/05/2017	17.45	18.00	7137	6955	7117	2.13%
19/05/2017	17.45	18.00	7041	6877	6797	2.09%
19/05/2017	17.45	18.00	7076	6968	6803	2.45%
19/05/2017	17.45	18.00	7273	7175	7019	2.01%
19/05/2017	17.45	18.00	7093	6901	7114	0.91%
19/05/2017	17.45	18.00	7133	6940	7010	1.58%
19/05/2017	17.45	18.00	7213	6940	6979	0.56%
19/05/2017	17.45	18.00	7131	6959	6941	0.43%
19/05/2017	17.45	18.00	6944	6904	6880	0.35%
19/05/2017	17.45	18.00	7011	6953	6920	2.39%
19/05/2017	17.45	18.00	6969	6775	6900	1.89%
19/05/2017	17.45	18.00	7157	6977	6843	3.07%
19/05/2017	17.45	18.00	7265	7130	6980	0.04%
19/05/2017	17.45	18.00	7217	7134	6995	1.89%
19/05/2017	17.45	18.00	7127	7083	6949	2.57%
19/05/2017	17.45	18.00	7169	7074	6828	1.60%
19/05/2017	17.45	18.00	7207	7104	7028	0.65%
19/05/2017	17.45	18.00	7111	6976	7008	1.35%
19/05/2017	17.45	18.00	7128	6976	6989	0.19%
19/05/2017	17.45	18.00	7127	7003	7017	0.17%
19/05/2017	17.45	18.00	6946	6867	6999	0.85%
19/05/2017	17.45	18.00	6968	6757	6898	1.40%
19/05/2017	17.45	18.00	6590	6248	6641	1.21%
19/05/2017	17.45	18.00	6651	6402	6562	2.59%
19/05/2017	17.45	18.00	6554	6599	6630	2.57%
19/05/2017	17.45	18.00	6577	6690	6665	1.06%
19/05/2017	17.45	18.00	6888	6927	6676	0.96%
19/05/2017	17.45	18.00	6966	7027	6649	4.01%
19/05/2017	17.45	18.00	6660	6753	6793	2.83%
19/05/2017	17.45	18.00	6697	6755	6616	2.19%
19/05/2017	17.45	18.00	6622	6712	6562	2.06%
19/05/2017	17.45	18.00	6692	6765	6582	3.13%
19/05/2017	17.45	18.00	6565	6574	6415	3.47%
19/05/2017	17.45	18.00	6662	6714	6465	1.69%
19/05/2017	17.45	18.00	6710	6879	6563	7.20%
19/05/2017	17.45	18.00	6712	6856	6606	3.17%
19/05/2017	17.45	18.00	6836	6821	6586	3.94%
19/05/2017	17.45	18.00	6837	6870	6521	3.50%
19/05/2017	17.45	18.00	6869	6865	6570	4.37%
19/05/2017	17.45	18.00	6861	6812	6676	2.77%
19/05/2017	17.45	18.00	6879	6824	6687	3.41%
19/05/2017	17.45	18.00	6895	6872	6813	0.16%
19/05/2017	17.45	18.00	7045	7040	6792	1.60%
19/05/2017	17.45	18.00	7039	7013	6771	3.81%
19/05/2017	17.45	18.00	1693	1675	6730	4.04%
19/05/2017	17.45	18.00	1693	1675	1639	2.28%
Total (USD)						

Progress/ status report of compliance of directives to be updated ending Sept. 2017.

Sr. No.	Issues	PSERC Directives for FY 2016-17	PSERC Comments & Directives for FY 2017-18	Progress of compliance of Directives ending 09/ 2017
7.1	<p>Third Party Audit</p>	<p>(i) Third Party Audit: The Commission vide Order dated 28.07.2014 in petition no. 15 of 2014, while allowing capital expenditure for shifting of meters under non-APDRP areas, directed PSPCL to get 3rd party audit carried out on all the loss reduction schemes to verify/quantify the benefits. On the specific request of PSPCL, the Commission vide Order dated 25.02.2015 in petition no. 8 of 2015 allowed PSPCL to conduct third party audit on at least 25% of the feeders. The Commission again lowered the sample size to 10% vide Order dated 26.05.2015 in petition no. 25 of 2015 and directed the utility to allot work for 3rd party audit of 10% feeders by August, 2015. The Commission observes with concern that PSPCL could award the work only in April 2016. The list of 10% randomly selected feeders has already been approved by the Commission and PSPCL is directed to ensure completion of work as per schedule and submit preliminary report to the Commission along with its observations/ objection before acceptance of final report of 3rd party audit.</p>	<p>Third Party Audit: The Commission observes that lot of time has been lost by PSPCL in the implementation of Order of the Commission dated 26.05.2015 against Petition No. 25 of 2015 for third party audit. PSPCL was directed to award work by August 2015 but work was allotted in April 2016. A list of randomly selected 126 feeders was approved by the Commission in May 2016 and the work was to be completed within 9 months but PSPCL after a gap of almost 9 months, informed the Commission vide letter dated 01.03.2017 that study on 73 feeders is not possible due to change in the configuration of these feeders due to bifurcation etc. PSPCL should have verified the status of feeders before submitting the list for random selection to the Commission. It clearly shows the casual approach of the distribution licensee and its officers in implementing the orders/directions of the Commission. The work of 53 number feeders was started in April 2016 and should have been completed as per the timelines in the work order. No report has been submitted to the Commission. In the status report, no timelines for completion of job has been committed. PSPCL is directed to submit the report of feeders where study has been completed along with timelines for completion of the job within one month of the issue of this tariff order. No further delay shall be allowed. Strict action shall be initiated in case of failure to accomplish the job in a time bound manner.</p>	<p>Work order no.84 dated 26.04.2016 was placed upon M/s Wapcos Limited, New Delhi. 126 No. 11 KV Feeders was randomly selected by Hon'ble PSERC for evaluation. 67 No. evaluation reports submitted by third party independent evaluation agency alongwith feeder wise abstract of benefits as per evaluation reports has been sent to Hon'ble PSERC vide this office Memo No. 2354 dated 22-11-2017 for kind information and consideration of Commission please. The balance reports shall be submitted within two months please.</p>
		<p>(ii) c) Key Exception Report: Serious violations of Standards of Performance (SOP) in replacing dead/ defective/burnt meters have been observed as the key exception reports shows large number of meter burnt, defective meters, broken M&T seals, glass broken cases continuing since 2015. PSPCL should certify within one month of issue of this Tariff Order that dead/burnt/ defective meters have been replaced as per SOP and there is no backlog. PSPCL is further directed to ensure submission of Management Information Report (MIR) for each quarter immediately after its completion.</p>	<p>c) Key Exception Report: In the T.O. for FY 2016-17, PSPCL was directed to certify that dead/burnt/ defective meters have been replaced as per SOP and there is no backlog. However, PSPCL has only submitted that instructions had been issued, which serve no purpose. The SOP have already been notified in Supply Code regulations and it is the duty of the distribution licensee to implement these regulations in letter and spirit as per the provisions of the Act. Non-submission of key exception reports to the Commission, which are generated regularly by PSPCL, is a deliberate attempt to conceal the desired information which is affecting a large section of consumers. The real time reports are only w.r.t. 47 APDRP towns and these reports do not cover various aspects of SOP. The Commission directs PSPCL to regularly supply cycle-wise key exception reports through e-mail within 10 days</p>	<p>The key exceptions report as on 24-08-2017 has already been sent to PSERC vide Memo No. 2261 dated 01/09/2017. The cycle-wise key exceptions reports as on 25-09-2017 and as on 13.10.17 have been sent to Secretary/PSERC vide this office Memo No. 2350 dated 17-11-2017 for kind information & consideration of Commission.</p>

of the data being generated by the agency. Failure to comply will result in penalty.

Energy Audit of Hydro Generating Stations:

The Commission notes the action taken by PSPCL. The status of replacement of 132 KV CTs/PTs at MHP should be submitted within one month of the issue of this Tariff Order.

In the Tariff Order for FY 2015-16, it has been recorded that two new transformers are being procured to spare existing T/Fs for over hauling. No progress in this regard has been submitted. PSPCL is directed to submit the latest status in this regard.

Energy Audit of Hydro Generating Stations:

The Commission observes that PSPCL has placed orders for GTs of MHP, UBDC, Shanan & Joginder Nagar in January, 2017. The latest status along with completion schedule must be shared with the Commission within one month of issue of this tariff order.

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. Detail of auxiliary consumption and G.T. Losses in respect of all Hydel Projects of PSPCL ending Sept., 2017 is tabulated below:

S. No	Name of Plant	Aux. Cons. (%)	GT Losses (%)
1	RSD	0.22	0.12
2	ASHP	0.086	0.161
3	UBDC	0.18	0.33
4	MHP	0.210	1.391
5	Shanan	0.02	1.00

Remarks for :

- 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 (size 500 mm² at PH1& 2 and 600 mm² 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, GT losses are higher as the generator transformers of this plant (PH-1 to PH-4) are very old and were commissioned during 1983, 1988 & 1989. P.O. for procurement of 2 No. 20MVA new transformers has been placed upon M/s BBL Work for replacement of 132 KV CT/PTs as per State grid Code is in progress.
- Above Sr. No.5 Shanan :-**
GT losses are higher due to installation of single phase transformers instead of 3-phase T/Fs due to space constraints. These T/Fs are about 30 years old and possess iron core due to which they have higher losses. These old T/Fs need replacement for which P.O. for procurement of new 7 No. 12MVA and 4 No. 19 MVA single phase GTs have been placed upon M/s BBL.

Latest Status of Procurement of Transformers:-

- 4 nos. 20 MVA, 11/132 KV Generator Transformers against purchase order cum contract agreement no 38/HPS/ED.IIIM-53 dated 11.01.2017 placed on M/s BBL, N.Delhi received at respective sites (2 no. MHP & 2 no. for UBDC).
- 7 no. Single phase 12 MVA 11/132/3 KV Generator against P.O. No 39/HPS/ED-I/S-343/Vol.II dt.12.01.2017 placed on M/s BBL, N.Delhi have been received at Shannan HEP, Joginder Nagar.

Energy Audit

The commissioning of the above received transformers shall be completed within one month from the date of shutdown of the respective power houses of the projects (within the lean period of 2017-18).

3. Status of tender enquires for replacement of 220kV/132kV/66kV CTs/PTs is as under:-

Sr. No.	Description	Status
1	TE No. 211 dt.28-10-16	Agenda no. 416 dated 16-10-17 submitted to WTDs for approval of purchase proposal. The delivery period as per tender enquiry for all types of CTs shall be within 4 months from the date of approval of drawings. The drawings needs to be submitted by the firm within 21 days from the date of issue of P.O.
2	TE No. 212 dt.28-10-16	P.O. No. 49/IFs/ED-III/M-107 dated 25-10-17 placed on M/s Mehru Electrical & Mechanical engineers Pvt. Ltd., Bhiwadi. All types of PTs shall be supplied within 4 months from the date of approval of drawings. The drawings needs to be submitted by the firm within 21 days from the date of issue of P.O.

After the clarification of various terms and conditions an Agenda regarding implementation of National UJALA Program in the state of Punjab, was placed in the 191st meeting of WTD PSPCL, held on 06.04.2017. In this meeting, approval in-principle was accorded to distribute 9 Watt LED lamps, 50 Watt Energy Efficient Fans & 20 Watt LED Tube light under UJALA Scheme in Up Front Model Only. Accordingly, the UJALA Scheme was launched, on dated 24.05.2017 at Mohali which was to be further extended in whole state of Punjab in phased manner through M/s EESL. In latest, upto 7.11.2017, the UJALA Scheme has been launched in 11 no. of towns of PSPCL named as (Mohali, Amritsar, Fazilka, Ferozpur, Ludhiana, Jalandhar, Kapurthala, Taran Tarn, Patiala, Rupnagar, Bathinda). In these 11 circles upto 7.11.17, M/s EESL have distributed 3,34,462 no. of 9 watt LED Lamps, 22,696 no. of 20 Watt LED Tube lights and 6,061 no. of 50 Watt energy efficient fans among the consumers of PSPCL. Further, PSPCL observed that the distribution of energy efficient appliances in the state of Punjab is at slow pace, therefore it has been requested to M/s EESL vide letter dated 3.11.2017 to expedite the expansion of scheme in the state of Punjab, so that esteemed consumers of PSPCL must draw the benefits of energy efficiency by using energy efficient

j) Efficient Lighting

The Commission notes with concern that for the last two years, PSPCL has been assuring that scheme for implementation to replace 16 lac ICLs with LEDs under DELP will be implemented but not a single LED has been distributed. Now PSPCL has informed that LEDs will be distributed to consumers through EESL at subsidised rates under UJALA scheme of Govt. The energy saving measure in lighting sector is one of the most effective tool to tackle demand curve during peak load hours and many DISCOMs have taken a very proactive action to implement the scheme. PSPCL should finalise the project on top priority and intimate the status within 15 days of the issue of this TO.

i) Bachat Lamp Yojana:

The Commission notes that despite in principle approval to replace 16 lac ICLs with LEDs under DELP Scheme, no tangible progress has been made. The Commission directs PSPCL to implement this project on top priority after following the procedure specified in DSM regulations.

Under UDAY scheme, PSPCL is required to provide LEDs to all domestic and other categories of consumers under DELP through EESL. PSPCL is directed to submit its roadmap and implementation schedule to fulfil its obligation under UDAY.

7.4 Demand Side Management & Energy Conservation

	<p>ii) Agricultural DSM: PSPCL has repeatedly been directed to execute a pilot project of Agricultural DSM, as a huge energy saving potential by replacing inefficient motors exist in the Agriculture Sector but PSPCL has totally failed to take any workable initiative to take up Agricultural DSM project. During meeting with PSPCL officers on 28.06.2016, it was informed that a demonstrative pilot project for replacement of about 100 existing pumpsets fed from 11 KV Chatipeer feeder under Nabha Divn. to ascertain energy saving potential is being executed through EESL. In case, Energy saving of 30% or more is achieved then project to replace 1 lac more pumpsets shall be taken in hand. The PSPCL is directed to share the results of pilot project with the Commission within 15 days of its completion. Under UDAY scheme, PSPCL is to replace 10% of the agriculture pumpsets with energy efficient pumpsets by March 2019. The Commission directs PSPCL to submit its implementation schedule within 3 months of issue of this Tariff order. PSPCL should also take up other energy saving projects such as replacement of inefficient air conditioners, air coolers, fans etc. under intimation to the Commission.</p>	<p>ii) Agricultural DSM: The Commission observes that the pilot project started by M/s EESL on 02.08.2016 was stopped by the firm on 02.09.2016 after replacing only 14 out of 108 motors and PSPCL failed to address the issues of the project implementer or the consumers. The utility must appreciate that no DSM project particularly that of AP sector can be successfully implemented without hand holding of the licensee. PSPCL must ensure completion of pilot project immediately so that benefits may be showcased to the stakeholders including the State Government. PSPCL is directed to share the status of the project with the Commission within one month of issue of Tariff Order.</p>	<p>appliances under UJALA Scheme.</p> <p>To implement various energy efficiency programs in the state of Punjab, Govt. of Punjab and PSPCL identified the areas of south zone predominantly having 1 Lac nos. of inefficient submersible Pumps to replace inefficient pumps with BEE 5 star rated motors. Accordingly, it was decided to implement a demonstrative pilot project of Ag-DSM for approx. 100 no. of pump at Chatipeer feeder of 66 KV Achal S/S under Nabha Division, circle Patiala district having 108 no. of pumps to find out the actual energy saving potential and consider it deemed for rolling out the large scale implementation of Ag-DSM project in the State of Punjab.</p> <p>M/s EESL started execution of Ag-DSM demonstrative pilot project on the selected Chatipeer feeder. Out of 108 nos. of AP consumers, 14 nos. of Pump sets were replaced. After replacing 14 no. of pump sets out of 108 nos. Pump sets in 3 months at Chatipeer feeder 66 KV Achal S/S under Nabha Division, Circle Patiala, M/S EESL held up the project. The matter was taken vigorously and requested M/s EESL at various platforms, through telephonic conversations, by issuing letters etc. for the early completion of the project.</p> <p>On dated 17th August 2017, M/s EESL submitted its reply along with new sensitivity analysis w.r.t. the savings achieved from the replacement of motors during the demonstrative pilot project. M/s EESL claimed that energy savings achieved from the Pilot project is around 20% whereas PSPCL is of view that the savings achieved from this project are around 18%.</p> <p>Further, M/s EESL requested in its reply that "Energy Savings which have been achieved from the replacements of these motors shall not differ much for the same feeder whether it is done for 16 pump sets or 50 pump sets. Further, M/s EESL also submitted that the pilot project at Chatipeer feeder may be treated as concluded and the remaining pumps of Pilot project may be covered further under the up scaling methodology of 1 lac EEPS (Energy Efficient Pump Sets) wherein M/s EESL proposed that the EEPS shall be distributed over the counter.</p> <p>It was noticed that in the proposal, M/s EESL is not offering installation of EESP to the farmers and proposing to distribute the EEPS to the farmers over counter whereas in the sensitive analysis M/s EESL included the installation cost & other overhead charges worth in Crores, which seems contradictory to each other and also to the earlier submitted proposals of M/s EESL.</p> <p>It is observed that there are lots of facts and figures that was not matching with the proposals/Financials submitted by M/s EESL regarding Ag-DSM, therefore it was again requested to M/s EESL to submit a revised sensitivity analysis along with the clarifications observed by PSPCL.</p> <p>In this regard after no. of letters, a latest reminder dated 3.11.2017 has been issued to M/s EESL for the early reply, but the reply is still awaited.</p> <p>Now in latest, to discuss the present status & further roadmap for the implementation of Ag-DSM in the state of Punjab, a meeting has been fixed with M/s EESL, under the chairmanship of Chief Engineer/ TA&I, PSPCL on 14.11.2017 at 11:30 AM in his office at Shakti Vihar, Patiala.</p>
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7.6	<p>Employee Cost</p>	<p>iii) AMR of H.T. consumers: The Commission observes that the AMR of HT consumers of 47 towns has been completed. The timelines for AMR of balance 97 towns covered in IPDS and MS consumers are upto 05-01-2020. However, all efforts will be made to complete the work as early as possible.</p>	<p>iii) AMR of H.T. consumers: The Commission notes that the AMR of HT consumers of 47 towns has been completed. The timelines for AMR of balance 97 towns covered in IPDS and MS consumers are upto 05-01-2020. However, all efforts will be made to complete the work as early as possible.</p>	<p>iii) DSM Plan / Capacity Building Programme: The Commission observes that no tangible progress has been made by PSPCL to get the DSM plan prepared despite accepting load research report of TERI on energy savings potential of different categories of consumers. Since notification of DSM regulations in 2012, the Commission has been issuing various directions and also suggesting execution of various DSM projects but it is a matter of concern that not even a single pilot project on any DSM measure has been completed by PSPCL. For the last three years, The Commission has been approving DSM funds, as requested by PSPCL in the ARR but not a single penny has been spent by the utility. From the status reports submitted by PSPCL during the last three years, it appears that implementation of DSM measures is the last priority of the distribution licensee.</p>	<p>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 and PSPCL has signed MoU with BEE under this programme. Further, PSPCL has signed MoU on dated 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. Under this programme BEE will provide full financial as well as technical support to PSPCL. In this context, as per the terms & 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 start the process, a meeting was organized with the representatives of EESL and TERI wherein TERI offered 1480 no. of consumers as sample size of survey. The survey report submitted by M/s TERI was found satisfactory and M/s EESL was informed to prepare Action plan for the state of Punjab under Capacity Building Programme. It was observed that some important observations are required to be incorporated in the action plan submitted by M/s EESL, and the same was informed to M/s EESL but the reply is still awaited by this office. In this regard, a reminder has been submitted to M/s EESL while incorporating the views/observations of Commission towards DSM Plan/Capacity Building Programme and further requested to submit revised action plan after incorporating the necessary amendments/modifications under Capacity Building Program at the earliest so that the various programmes/measures to achieve energy savings may be taken in hand by PSPCL after determining the scope of savings in particular areas from DSM action plan. In this regard, a reminder dated 3.11.2017 has been issued to M/s EESL for the early reply but the same is still awaited. Now, to discuss the present status & further roadmap for the implementation of Action Plan in the state of Punjab under Capacity Building Program, a meeting is scheduled with M/s EESL under the chairmanship of Chief Engineer/ TA&I, PSPCL on 14.11.2017 at 11:30 AM in his office at Shakti Vihar, Patiala.</p>
7.7	<p>Receivables</p>	<p>Receivables: The Commission observes that there is huge difference in the outstanding amount ending 3/16 reported during processing of ARR for FY 2016-17 and audited figures ending 3/16 now supplied. The outstanding amount of GSC category ending March 2016 was reported as 36493.59 lac which has now been reported as Rs.</p>	<p>Receivables: The Commission observes that there is huge difference in the outstanding amount ending 3/16 reported during processing of ARR for FY 2016-17 and audited figures ending 3/16 now supplied. The outstanding amount of GSC category ending March 2016 was reported as 36493.59 lac which has now been reported as Rs.</p>	<p>The offices of respective Chief Engineers/DS of various Zones have sent the amount of GSC category to the tune of Rs. 36493.59 Lacs and total defaulting amount of Rs. 108356.31 Lacs for the period of ending 3/16 whereas the office of the Chief auditor have sent the audited defaulting amount of GSC category of Rs. 68196.43 Lacs and total defaulting amount as Rs. 144525.23 Lacs for the same period i.e. ending 3/16. The reason for vast difference between audited & Un-audited defaulting amount had been sought from all CEs/DS. As regarding Govt. offices defaulting amount is concerned, efforts are being made at every</p>	

<p>level to minimize the defaulting amount against Govt. departments. Further real time window of defaulting Govt. departments connections have been got developed by this office as per directions of Hon'ble CMD of PSPCL. Moreover worthy CMD of PSPCL has also requested vide D.O. letters to Principal Secretaries/Secretaries of major defaulting Govt. departments to release funds for making payments of pending electricity bills.</p> <p>Status of Defaulting Amount (Rs in lacs.) ending 09/2017 viz-a-viz 06/2017 is as under:-</p>	<table border="1"> <thead> <tr> <th>Category</th> <th>Ending 06/17 (un-audited)</th> <th>Ending 09/17 (un-audited)</th> </tr> </thead> <tbody> <tr> <td>Ind</td> <td>102844.79</td> <td>113993.29</td> </tr> <tr> <td>AP</td> <td>283.49</td> <td>279.70</td> </tr> <tr> <td>GSC</td> <td>65199.16</td> <td>36401.31</td> </tr> <tr> <td>Others</td> <td>2603.07</td> <td>3086.27</td> </tr> <tr> <td>Total</td> <td>170930.51</td> <td>203960.58</td> </tr> </tbody> </table>	Category	Ending 06/17 (un-audited)	Ending 09/17 (un-audited)	Ind	102844.79	113993.29	AP	283.49	279.70	GSC	65199.16	36401.31	Others	2603.07	3086.27	Total	170930.51	203960.58	<p>Tender enquiry No. MQP-116/2017-18PO(M) to procure prepaid meters as a pilot project was floated with due date of opening as 07.07.2017 but no firm participated. Corrigendum No.1 was issued with due date of opening as 23.08.2017. Corrigendum No.2 with due date of opening as 06.10.2017. Corrigendum No.3 with due date of opening as 06.11.2017. But the said tender could not be opened due to non participation of firms and even after extending the tender for thrice no firm has submitted bid. So in order to encourage participation of firms, the quantity of the tender enquiry has been increased to 5000 vide Corrigendum No.-4 with due date of opening as 08-12-2017. Firms are being persuaded for participation.</p>
Category	Ending 06/17 (un-audited)	Ending 09/17 (un-audited)																		
Ind	102844.79	113993.29																		
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<p>68196.41 lac i.e a difference of over 31700 lac, which needs to be explained.</p> <p>The receivables against Govt. Deptts. have further risen from Rs. 520.94 crore ending March 2016 to Rs. 756.25 crore ending March 2017. PSPCL has failed to protect its financial interests and ignored the directions of the Commission to introduce prepaid metering on Govt. Department connections in consultation with the State Govt. and also on temporary connections. In the review meeting held on 14.10.2016, the Commission referred to the success story of Manipur where revenue collection increased manifold after introduction of pre-paid meters. It was assured that pre paid meters shall be introduced. The lacklustre approach of PSPCL in this regard is not appreciated. The progress of introduction of pre-paid meters and its roll out plan must be shared by PSPCL with the Commission within one month of the issue of this Tariff Order.</p>	<p>The TS Organization of PSPCL during the year 2016-17 commissioned 70 Nos 66KV Sub-station works. 658.659 Ckt. KM 66 KV transmission line has been constructed during the year 2016-17. 11KV Capacitor banks of 240.897 MVAR capacity have been added and commissioned during the year 2016-17 in the Sub transmission System. For the year 2017-18, 75 Nos. 66KV Sub-station works are to be completed & commissioned including 23 Nos. new 66KV Sub-stations. 900 Ckt. KM transmission lines shall also be completed during the year 2017-18. 300 MVAR capacity shall be added in the Sub-transmission system of the State for further improving the efficiency in the State of Punjab. The addition of this transformation capacity shall further bring down the loading of existing 66KV Sub-stations. After preparation of list of 66KV Sub-stations with loading more than 70% by the Planning office by the month of November-2017, TS organisation of the PSPCL shall thereafter again formulate the time bound action plan to bring the loading of Sub-stations within the 70% loading limit after the approval of the transmission works by the Planning/ PSPCL, subject to availability of funds and material.</p> <p>As such, it may be observed that efforts are being made to keep the loading of all the Sub-stations of the State upto maximum limit of 70%. Progress of transmission works to de-load the transmission system is as under:-</p>	<table border="1"> <thead> <tr> <th>Year</th> <th>66KV Sub-station works</th> <th>66KV Transmission lines (Ckt. KM)</th> <th>MVA Capacity added</th> <th>11 KV Capacitor Banks (MVAR Capacity Added)</th> </tr> </thead> <tbody> <tr> <td>2012-13</td> <td>150</td> <td>414,589</td> <td>1510.45</td> <td>61,245</td> </tr> </tbody> </table>	Year	66KV Sub-station works	66KV Transmission lines (Ckt. KM)	MVA Capacity added	11 KV Capacitor Banks (MVAR Capacity Added)	2012-13	150	414,589	1510.45	61,245								
Year	66KV Sub-station works	66KV Transmission lines (Ckt. KM)	MVA Capacity added	11 KV Capacitor Banks (MVAR Capacity Added)																
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<p>The reply given for not adopting prepaid meters on Govt. and Temporary connections is not convincing as many progressive utilities are using these meters.</p> <p>Manipur State has successfully implemented the programme to introduce prepaid meters and reported very encouraging results. PSPCL is directed to study the implementation strategy of Manipur State for large scale introduction of prepaid meters and prepare roadmap for introduction of prepaid meters in the Punjab within a month of issue of this Tariff Order.</p>	<p>The Commission notes the action taken and directs PSPCL to submit its plan to de-load all grid sub-stations and lines having loading above 70% of its capacity.</p>	<p>The Commission notes the action taken and directs PSPCL to ensure de-loading of all overloaded 33/66 kV lines and grid sub-stations as per the criteria fixed by the utility.</p>																		
<p>7.3</p> <p>Loading status of sub-transmission system (66 KV & 33 KV)</p>	<p>The Commission notes the action taken and directs PSPCL to submit its plan to de-load all grid sub-stations and lines having loading above 70% of its capacity.</p>	<p>The Commission notes the action taken and directs PSPCL to ensure de-loading of all overloaded 33/66 kV lines and grid sub-stations as per the criteria fixed by the utility.</p>																		

	sections of consumers		
7.14	Review of PPAs with Generators/Traders for purchase of power from outside the State of Punjab.	PSPCL is directed to pursue the matter vigorously at higher level.	The Commission notes the action taken regarding identifying plants for surrendering power share on mutually agreed terms with NTPC & NHPC for at least for next five years. The outcome of the action on the issue be shared with the Commission. Further, PSPCL may explore the possibility of reviewing the PPAs of IPPs also.
7.15	Per Unit Fuel Cost	PSPCL to take note of the cost per unit while backing down its own generating plants. Regular supply of coal from Punjab's own captive coal mine is of utmost importance to protect the interest of the consumers. PSPCL is directed to follow the matter more vigorously, so that coal supply from own captive mine may be restored at the earliest.	During the proceedings in suo-moto petition no. 41 of 2016, PSPCL informed the Commission that it has been decided to call for fresh tenders for selection of new Mine Developer and Operator for Pachhwara Coal Mine and affidavits in this regard have been filed before the Hon'ble Punjab & Haryana High Court on 14.07.2017. PSPCL is directed to implement the Order of the Commission dated 08.08.2017 in suo-moto petition no. 41 of 2016 to reduce the per unit cost of generation of its own thermal plants.
7.17	System Analysis wings	The Commission notes the action taken in setting up of System analysis Wing. The Commission reiterates that all Technical Proposals submitted to the Commission, should invariably be supported by Load Flow Studies, Short Circuit Analysis, Stability Studies etc. The Commission observes the painfully slow progress on the network model of 33 kv/66 kv sub transmission system to properly study the system load flow and other critical parameters through a software designed for the studies.	After reviewing all the Long term PPAs/BPSAs, 11 No. NTPC/NHPC generating stations (Aitta, Auriya, Dadri, Jhajar, Unchahar-I, Farakka, Kahalgaon-I of NTPC and Sewa-II, Chameria-II, Uri-II & Parbati-III of NHPC) have been recognized for surrendering its power share on mutual agreed terms. The same matter is repeatedly being taken-up by Govt of Punjab with MOP, GOI. Also, a legal opinion regarding surrender of power share has been taken by PSPCL and the advocate Mr. M.G.Rmachandran opined that PSPCL cannot treat any agreement as terminated unless the generating company agrees to the same. Further, regarding review of PPAs of IPPs, it is submitted that there is no provision for review of PPAs signed with IPPs. However, only clause 'Terms of Agreement' which is from the 'Effective date' to 'Expiry date' exists in the PPAs of IPPs. PSPCL has decided to call for fresh tenders for selection of new Mine Developer and Operator for early operationalization of Pachhwara Central Coal Mine. PSPCL has appointed M/s KPMG as consultant for preparation of tender specifications for selection of MDO and fresh global tender enquiry. The enquiry is likely to be floated shortly.
			Analysis wing was created in the Planning Organisation vide O/o No.03/SE/Plg-3 dated 2.1.2015 in compliance to the directive of PSERC issued against the suo-moto petition No. 54/2014. Expression of Interest for Load flow studies is going to be floated shortly. The requisite input data for load flow studies is being collected from the respective offices.

7.21	Periodic Checking of meters	<p>PSPCL should certify that accuracies of EHT metering equipments including CT/PT units of all 172 EHT connections have been checked by MMTS. The details of the testing equipments for checking the accuracies at site for ratio error and phase angle errors of CTs/PTs and meter accuracies of electronic meters be shared with the Commission.</p> <p>The Commission reiterates its directions that meticulous compliance of regulation 21.3 of Supply Code 2014 regarding periodic inspection /complete testing at site of all meters/metering equipments must be ensured.</p>	<p>In the review meeting held on 14.10.2016, it was confirmed by CMD/PSPCL that although meters are being checked regularly at site by MMTS but CTs/PTs could not be checked at site due to non-availability of testing equipment for which procurement process has been started. However, in its reply now, PSPCL has not supplied any information regarding the status of procurement of testing equipment and timelines for ensuring compliance of Commissions' directions for periodic inspection/complete testing at site of all EHT meters/metering equipments. PSPCL must submit the same within one month of issue of this Tariff Order.</p>	<p>It is brought out that the periodic checking of all the EHT connections have been carried out by MMTS squads. During the checking, the instantaneous contribution of all the three phases by PTs and CTs, phase disassociation, any anomaly etc. as recorded by meter are checked. The history of tempered data as recorded by meter was also downloaded through DMPL for scrutinising any discrepancy. The EHT meters checked and detail of checking of EHT meters by MMTS units of CE/Enf. during 2nd quarter of FY 2017-18 ending Sept. 2017 is as under :-</p> <table border="1" data-bbox="606 89 957 963"> <thead> <tr> <th>Sr. No</th> <th>Ent. Circle</th> <th>No. of EHT Meters</th> <th>No. of Conns. checked during Qtr.</th> <th>No. of DDL done</th> <th>Accuracy of mtr. checked or not.</th> <th>Status of M.F.</th> <th>Any other violation found</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Amritsar</td> <td>15</td> <td>5</td> <td>5</td> <td>5</td> <td>OK</td> <td>NIL</td> </tr> <tr> <td>2</td> <td>Bethinda</td> <td>21</td> <td>5</td> <td>5</td> <td>5</td> <td>OK</td> <td>NIL</td> </tr> <tr> <td>3</td> <td>Jalandhar</td> <td>18</td> <td>4</td> <td>4</td> <td>4</td> <td>OK</td> <td>NIL</td> </tr> <tr> <td>4</td> <td>Ludhiana</td> <td>68</td> <td>65</td> <td>65</td> <td>0</td> <td>OK</td> <td>NIL</td> </tr> <tr> <td>5</td> <td>Patiala</td> <td>64</td> <td>33</td> <td>33</td> <td>0</td> <td>O.K</td> <td>NIL</td> </tr> <tr> <td></td> <td>Total</td> <td>186</td> <td>112</td> <td>112</td> <td>14</td> <td></td> <td></td> </tr> </tbody> </table> <p>Regarding testing equipment, it is submitted that a tender was called in 2015 for procurement of testing equipment for HT/EHT consumer by Enforcement Organization. However, the same was called off as no bid was found to be technically acceptable. Thereafter, a committee was constituted with the approval of worthy CMD in 2016 for procurement of such equipment. The Committee held its first meeting on 22.02.2017. M/s SM System had offered portable testing equipment to test HT/EHT metering equipment & subsequently called for giving live demonstration. The firm gave live demo on 6th & 7th July 2017 at ME lab Patiala and in the premises of HT consumers M/s Thapar University Patiala where in all the committee members were present. However, the equipment requires disconnection of power supply and separation of CT/PT unit & Meter</p>	Sr. No	Ent. Circle	No. of EHT Meters	No. of Conns. checked during Qtr.	No. of DDL done	Accuracy of mtr. checked or not.	Status of M.F.	Any other violation found	1	Amritsar	15	5	5	5	OK	NIL	2	Bethinda	21	5	5	5	OK	NIL	3	Jalandhar	18	4	4	4	OK	NIL	4	Ludhiana	68	65	65	0	OK	NIL	5	Patiala	64	33	33	0	O.K	NIL		Total	186	112	112	14		
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<p>for testing which was found to be too tedious and technically not practical. Thereafter, other channels were explored and it was learnt that ME Lab, Jalandhar can perform such testing if requisite equipment & staff is provided. It is submitted that ME Lab, Jalandhar is NABL accredited Lab. The ASE/ME Lab Jalandhar has given detailed proposal and committee in its meeting dated 31.10.2017 had gone through the proposal and gave recommendations to procure 3 no. equipments to be stationed at Patiala, Jalandhar and Ludhiana. The approx cost of the equipment will be 2.25 Crore for these units. The case has been submitted for approval of the Competent Authority. Meanwhile, the process for publication of NIT and preparation of specifications is being taken side by side. The procurement process is likely to be completed within 3 months after publication of the tender enquiry.</p>			
<p>Out of the 3 No. state owned Thermal Power plants namely GNDTP, Bathinda, GGSSTP, Ropar and GHTP, Lehra Mohabat, aproposal regarding retiring of all the four no. units of GNDTP Bathinda and Unit No. 1 & 2 of GGSSTP Ropar has been put to Cabinet, GoP for consideration & approval with the recommendations of Board of Directors of PSPCL. Final approval/decision in this regard is awaited.</p>	<p>The Commission notes that PSPCL's thermal plants are low on merit order for power procurement. PSPCL may explore the possibility of de-commissioning of old inefficient plants that have out lived their useful life.</p>		<p>7.27 De-commissioning of old inefficient plants.</p>
<p>In this regard, PSPCL has issued Commercial circular No. 52/2017 dated 15/11/2017 to allow Voluntary disclosure scheme for DS, NRS and SP category consumers, allowing them to get their additional connected load regularized without any penalty. The VDS shall remain available for 6 months from the date of issue of the amendment dt. 09/11/2017 by PSERC regarding Two part tariff. The circular has also been uploaded on PSPCL website.</p>	<p>PSPCL is directed to allow Voluntarily Disclosure Scheme (VDS) for DS, NRS and SP Category of Consumers, allowing them to get their load regularized without any penalty. The VDS shall remain available for 6 months from date of issue of this Tariff Order.</p>		<p>7.36 Voluntarily Disclosure Scheme (VDS) for DS, NRS and SP Category of Consumers</p>

SECTION-VI - EVIDENTIAL DOCUMENTS

SE/HPS
1 dtg 116 719

GOVERNMENT OF PUNJAB
DEPARTMENT OF POWER
(Energy Branch)

NOTIFICATION

The 24 May, 2017

10/10/17
24/10/17
10/10/17

No.3/13/2009-PE2/1445 The Governor of Punjab is pleased to inform that Punjab State Power Corporation Limited will annually pay Rs.12.00 Crore (Twelve Crore Only) to Chief Engineer, Ranjit Sagar Dam Construction Board, Department of Irrigation, Punjab, Shahpur Kandi Township as lump-sum Operation and Maintenance Charges with an increase of 6% per annum over the previous year.

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11/11

2. This is as per decision taken in a meeting under the Chairmanship of Irrigation and Power Minister, Punjab with Officers of Irrigation and Power departments on 26.4.2017 at Chandigarh.

3. PSPCL will pay this amount in four installments of Rs.3.00 Crore (applicable amount) every quarter and will be applicable from the year 2017-18 onwards.

4. This Notification will supersede the earlier Notification No.03/13/2009-PE2/50 dated 08.01.2010 issued by Principal Secretary to Govt. of Punjab, Department of Power regarding payment of 3% of revenue received from electricity generated from RSD for maintenance of the Dam.

Dated, Chandigarh
The 24 May, 2017 By *[Signature]* Principal Secretary to Govt. of Punjab,
Department of Power

Encl. No.03/13/2009-PE2/1445 Dated Chandigarh, the 24/5/17

A copy of the above is forwarded to the followings for information and necessary action:

1. Controller, Printing & Stationary Department, Punjab for publish the notification in the ordinary Gazette and to supply 15 copies of the notification to this department.
2. CMD, Punjab State Power Corporation Limited, Patiala.
3. Chief Engineer/RSD(Construction), Irrigation Department, Punjab, Shahpur Kandi Township
4. Secretary, Ranjit Sagar Dam Construction Board, Irrigation Department, Punjab.
5. Superintendent, Project Branch, Punjab Civil Secretariat-2.

[Signature]
Deputy Secretary, Power

[Handwritten notes and signatures]
Mr. Parshah
Director (Gen)
P.S. Sec
284

0175-221576