CONTENTS

PUNJAB STATE ELECTRICITY REGULATORY COMMISSION
SCO NO. 220-221, SECTOR-34-A, CHANDIGARH

PETITIONS FILED BY PSPCL FOR ANNUAL REVENUE REQUIREMENT AND DETERMINATION OF TARIFF FOR MYT CONTROL PERIOD FROM FY 2017-18 TO FY 2019-20 (PETITION NO. 90 OF 2017) AND FOR TRUE UP OF FY 2015-16 (PETITION NO. 33 OF 2017)

PRESENT: Ms. Kusumjit Sidhu, Chairperson
Sh. S.S. Sarna, Member
Ms. Anjuli Chandra, Member

Date of Order: 23rd October, 2017

ORDER

The Punjab State Electricity Regulatory Commission (Commission), in exercise of powers vested in it under the Electricity Act, 2003 (Act), passes this order determining the Annual Revenue Requirement (ARR) for FY 2017-18, FY 2018-19 & FY 2019-20 and Tariff for FY 2017-18 for supply of electricity by the Punjab State Power Corporation Limited (PSPCL) to the consumers of the State of Punjab for MYT Control Period from FY 2017-18 to FY 2019-20. The petitions filed by PSPCL, facts presented by PSPCL in its various submissions, objections received by the Commission from consumer organizations and individuals, issues raised by the public in hearings held at Jalandhar, Bathinda and Chandigarh, the responses of PSPCL to the objections and observations of the Government of Punjab (GoP), in this respect have been considered. The State Advisory Committee constituted by the Commission under Section 87 of the Act has also been consulted and all other relevant facts and material on record have been perused before passing this Order.

1.1 Background

The Commission has in its previous Tariff Orders determined tariff in pursuance of the ARRs and Tariff Applications submitted by erstwhile Punjab State Electricity Board (the Board) for the years 2002-03 to 2006-07, 2008-09, 2009-10, 2010-11 and PSPCL for 2011-12, 2012-13, 2013-14, 2014-15, 2015-16 and 2016-17. Tariff Order for FY 2007-08 had been passed by the Commission in suo-motu proceedings.

1.2 ARR & Multi Year Tariff Petition for the Control Period from FY 2017-18 to FY 2019-20

PSPCL has filed the ARR and MYT Petition for the Control Period (FY 2017-18 to FY 2019-20) on 30.11.2016. PSPCL has submitted that it is one of the 'Successor Companies' of the erstwhile Board, duly constituted under the Companies Act, 1956 on 16.04.2010 after restructuring of the Board by Government of Punjab vide notification no.1/9/08-EB(PR)/196 dated 16.04.2010, under the "Punjab Power Sector Reforms Transfer Scheme" (Transfer Scheme).

As per the Transfer Scheme, the erstwhile Punjab State Electricity Board (the predecessor) has been unbundled into two entities i.e. POWERCOM and TRANSCO. The POWERCOM has been re-named as Punjab State Power Corporation Limited (PSPCL) and the TRANSCO has been re-named as Punjab State Transmission Corporation Limited (PSTCL).

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, PSPCL is left with the Distribution, Generation and allied activities of the erstwhile PSEB.

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

Following are the salient features of the aforesaid amendments:

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

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

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

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

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

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

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

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

Based on the opening balance sheet notified by the Government of Punjab vide the Amendment in Transfer scheme, the provisions of Regulation 13 of the Punjab State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2005, directives of the Commission on the matter and the provisions of Punjab State Electricity Regulatory Commission (Terms and Conditions of Determination of Generation, Transmission, Wheeling and Retail Supply Tariff)

Regulations, 2014, the petitioner has filed MYT Petition for the Control Period from FY 2017-18 to FY 2019-20.

The petitioner has prayed to the Commission to:

a) Admit the Petition seeking approval of MYT for Generation and Distribution for FY 2017-18 to FY 2019-20 in accordance with the PSERC MYT Regulations, 2014;

b) Approve the MYT Petition for Generation and Distribution Business for FY 2017-18 to FY 2019-20 as proposed by the petitioner in the above-said petition;

c) Take appropriate view on the revenue gap projected by PSPCL as per the PSERC MYT Regulations while determining the tariff for the Control Period;

d) Condone any error/omission and to give opportunity to rectify the same;

e) Pass any other order(s) as the Commission may deem fit and appropriate under the circumstances of the case and in the interest of justice.

On scrutiny of the petition, it was noticed that the Petition was deficient in some respects. The deficiencies were conveyed to PSPCL vide letter No. PSERC/Tariff/T-198/6431 dated 14.12.2016. The replies to deficiencies were furnished by PSPCL vide its Memo. No. 1178/CC/DTR/Dy.CAO/245/Vol-1/ Deficiency dated 23.12.2016 followed by Memo. No. 1179/CC/DTR/Dy. CAO/245/Vol-1/ Deficiency dated 27.12.2016. Accordingly, after taking into consideration the aforementioned replies of PSPCL, the petition was taken on record on 29.12.2016 as Petition No. 90 of 2016.

Earlier, PSPCL also filed a Petition (No. 46 of 2016) on 31.05.2016 for approval of Capital Investment Plan and Business Plan for MYT Control Period from FY 2017-18 to FY 2019-20, which was admitted by the Commission vide its order dated 09.06.2016. PSPCL filed additional submissions vide Memo. No. 768/ARR/ Dy.CAO/245/CIP/Business Plan dated 12.07.2016. Further, the Commission vide its Order dated 16.08.2016 held that the said petition is deficient on various points and directed PSPCL to resubmit the Capital Investment Plan & Business Plan after attending to the deficiencies and observations pointed out in the Order. PSPCL attended to the deficiencies vide Memo. No. 1031/CC/DTR-245/Deficiency dated 30.09.2016.

1.3 Objections and Public Hearings

A public notice in respect of petition for Capital Investment Plan & Business Plan and Petition for Aggregate Revenue Requirement (ARR) and determination of tariff for

MYT Control Period from FY 2017-18 to FY 2019-20 was published by PSPCL in The Tribune (English), Ajit (Punjabi), Jagbani (Punjabi), Punjab Kesri (Hindi) on 30.12.2016 and Dainik Jagran (Hindi) on 31.12.2016 inviting objections from the general public and stake holders on the petition filed by PSPCL. Copies of the ARR, Capital Investment Plan and Business Plan were made available on the website of PSPCL and in the offices of the Chief Engineer/ARR and TR, PSPCL, Patiala and also in the offices of all the Chief Engineers (Operation) and all the Superintending Engineers (Operation) of PSPCL. In the public notice, objectors were advised to file their objections with the Secretary of the Commission within 30 days of the publication of the notice i.e. by 30.01.2017, with an advance copy to PSPCL. The public notice also indicated that the Commission, after perusing the objections, may invite such objector(s) as it considers appropriate for hearing on the dates to be notified in due course.

The Commission decided to hold public hearings at Jalandhar, Bhatinda, Chandigarh and Ludhiana. A public notice to this effect was published in various news papers i.e. The Tribune, Punjab Kesri and Jagbani on 28.01.2017 and Punjabi Tribune and Hindustan Times on 29.01.2017, as well as uploaded on the website of the Commission. The objectors and consumers whose objections were received by the due date were also informed in this respect, as per details hereunder:

Venue	Date & time of Public Hearing	Category of consumers to be heard
JALANDHAR Conference Room, Office of Chief Engineer/Operation (North), PSPCL, Shakti Sadan, GT Road, Near Khalsa College, Jalandhar.	**February 06, 2017** 11.30 AM to 1.30 PM (To be continued in the afternoon, if necessary).	All consumers/ organizations of the area.
BATHINDA Conference Room, Guest House, Thermal Colony, PSPCL, Bathinda.	**February 07, 2017** 11.30 AM to 1.30 PM (To be continued in the afternoon, if necessary).	All consumers/ organizations of the area.
CHANDIGARH Commission office i.e. SCO 220-221, Sector 34-A, Chandigarh.	**February 08, 2017** 10.30 AM to 12.30 PM	All consumers except Industrial & Agricultural consumers/organizations and Officers'/Staff Associations of PSPCL and PSTCL.
	12.30 P.M. to 2:30 PM	Agricultural consumers and their unions.
CHANDIGARH Commission office i.e. SCO 220-221, Sector 34-A, Chandigarh.	**February 09, 2017** 11.00 AM to 1.30 PM	Industrial consumers/ organizations
	3.00 PM onwards	Officers' / Staff Associations of PSPCL and PSTCL
LUDHIANA Multi Purpose Hall, Power Colony, PSPCL, Opposite PAU, Ferozepur Road, Ludhiana.	**February 13, 2017** 11.30 AM to 1.30 PM (To be continued in the afternoon, if necessary).	All consumers/ organizations of the area.

Through this public notice, it was also intimated that the Commission will also hear the comments of the Punjab State Power Corporation Limited and Punjab State Transmission Corporation Limited to the objections raised by the public besides Corporations' own point of view at Commission's office i.e. SCO 220-221, Sector 34-A, Chandigarh on 10.03.2017 from 11.00 AM to 1.00 PM (to be continued in the afternoon, if necessary).

1.4 The Commission held public hearings as per schedule from 6th February, 2017 to 9th February, 2017 at Jalandhar, Bathinda and Chandigarh. The public hearing scheduled to be held at Ludhiana on 13th February, 2017 was postponed by the Commission due to unavoidable circumstances. The said hearing was held at Chandigarh on 08.03.2017 after a public notice in this regard was published in The Tribune, Punjabi Tribune, Hindustan Times, Punjab Kesri and Jagbani newspapers on 04.03.2017. The views of PSPCL on the objections/comments received from public and other stakeholders were heard by the Commission on 10.03.2017.

1.5 Petition for True-up of FY 2015-16

PSPCL filed Petition (No.33 of 2017) for True-Up of FY 2015-16 in respect of its Generation and Distribution business on 25.04.2017, which was admitted and taken on record on 11.05.2017. The Commission noticed certain deficiencies in the petition and vide letter No. PSERC/Tariff/T-211/559 dated 22.06.2017 sought reply from PSPCL. PSPCL vide Memo No.632/ARR/Dy.CAO/247/True-up2015-16/Deficiency dated 06.07.2017 and Memo No.650/ARR/Dy.CAO/247/True-up2015-16/Deficiency dated 19.07.2017 submitted its replies to the deficiencies. Public notice was published by PSPCL on 16.05.2017 in The Tribune (English), Hindustan Times (English), Ajit (Punjabi), Jagbani (Punjabi), Punjab Kesri (Hindi) inviting objections, if any, together with supporting material within fifteen days of the publication of notice.

1.6 The Commission decided to hold another public hearing in connection with Petition for ARR and determination of tariff (Petition No. 90 of 2016), Petition for approval of Capital Investment Plan & Business Plan (Petition No. 46 of 2016) and Petition No.33 of 2017 for true-up of FY 2015-16. Public notice in this regard was published on 15.08.2017 in The Tribune (English), Punjabi Tribune (Punjabi), Hindustan Times (English), Punjab Kesri (Hindi) and Jagbani newspapers for public hearings to be held as per details below:

Venue	Date & Time of Public Hearing	Category of consumers to be heard
CHANDIGARH Commission office i.e. SCO 220-221, Sector 34-A, Chandigarh.	**September 05, 2017** 11.00 AM to 1.30 PM	Industrial consumers/ organizations.
	3.00 PM onwards	Agricultural consumers and their unions.
CHANDIGARH Commission office i.e. SCO 220-221, Sector 34-A, Chandigarh.	**September 06, 2017** 11.00 AM to 1.30 PM	All consumers except Industrial & Agricultural consumers/ organizations and Officers'/ Staff Associations of PSPCL and PSTCL.
	3.00 PM onwards	Officers'/Staff Associations of PSPCL and PSTCL.

The comments of PSPCL to the objections raised by the public besides Corporation's own point of view regarding the petitions were heard on 08.09.2017.

1.7 The Government of Punjab, Department of Power was approached by the Commission through DO letter No. DIR/T-198/6620-21 dated 04.01.2017 seeking its views on the Petitions for (i) Capital Investment Plan and Business Plan of PSPCL (Petition No. 46 of 2016) and (ii) Annual Revenue Requirement and Determination of Tariff (Petition No.90 of 2016) for MYT Control Period from FY 2017-18 to FY 2019-20, which also included the True up for FY 2014-15 and Review for FY 2016-17. Further, the views of the Government on Petition No. 33 of 2017 for True-up of FY 2015-16 were sought vide DO letter No. 318 dated 17.05.2017. In response, Government of Punjab, Department of Power, through its Principal Secretary, vide Memo No.1/2/2017-EB(PR)/584 dated 14.09.2017, submitted its comments/ observations on the ARR and MYT Petition for the control period from FY 2017-18 to FY 2019-20.

1.8 The Commission, in all, received 40 written objections including the comments of Government of Punjab. A few objections were received after the due date. The number of objections (category-wise) received from consumer groups, organizations and others are detailed below:

Sr. No.	Category	No. of Objections
1.	Chambers of Commerce	4
2.	Industrial Associations	11
3.	Industry	17
4.	PSEB Engineers Association	2
5.	Government of Punjab	1
6.	Others	5
	Total	**40**

The complete list of objectors is given in **Annexure-III (Volume-2)** to this Tariff Order. PSPCL submitted its comments on the objections, which were made available to the respective objectors. A summary of issues raised in objections, the response of PSPCL and the view of the Commission are contained in **Annexure-IV (Volume-2)** to this Tariff Order.

1.9 State Advisory Committee

The State Advisory Committee constituted under Section 87 of the Act, discussed the petitions of PSPCL in a meeting convened for this purpose on 14.02.2017. The minutes of the meeting of the State Advisory Committee are enclosed as **Appendix-I (Volume-1)** to this Order.

The Commission has, thus, taken the necessary steps to ensure that due process, as contemplated under the Act and Regulations framed by the Commission, is followed and adequate opportunity is given to all stakeholders in presenting their views.

1.10 Compliance of Directives

In its previous Tariff Orders, the Commission had issued certain directives to PSPCL in the public interest. A summary of directives issued during previous years, status of compliance along with the directives of the Commission in the petitions is given in **Chapter-6** of this Tariff Order.

1.11 In this Order, the Commission has dealt with Petition No. 90 of 2016 for ARR and determination of Tariff for MYT Control Period from FY 2017-18 to FY 2019-20 and Petition No. 33 of 2017 for True-up of FY 2015-16 filed by PSPCL. However, the Commission provisionally approves the Capital Investment Plan (Petition No. 46 of 2016) and final Order in this regard shall be issued separately.

Chapter 2
True up for FY 2014-15

2.1 Background

The Commission approved the ARR and Tariff for FY 2014-15 in its Tariff Order dated 22.08.2014, which was based on the costs and revenues estimated by the Punjab State Power Corporation Limited (PSPCL). PSPCL had furnished revised estimates for FY 2014-15 during the determination of ARR and Tariff for FY 2015-16, in which there were major differences in certain items of costs as well as projected revenues both in the revised estimates furnished by PSPCL and the approvals granted by the Commission. The Commission, in its Tariff Order of FY 2015-16, reviewed its earlier approvals and re-determined the same based on the revised estimates made available by PSPCL. PSPCL, in its ARR Petition for FY 2016-17, submitted that the Audit of Accounts for FY 2014-15 is under process and had prayed that the truing up of the costs and revenue for FY 2014-15 may be undertaken by the Commission after the finalisation of the Audited Annual Statement of Accounts (Audited Annual Accounts) of the year. As per provisions under Tariff Regulations, true up can be undertaken only after the Audited Annual Accounts are made available. As such, the Commission decided to undertake the true up for FY 2014-15 along with the ARR Petition of PSPCL for FY 2017-18, when Audited Annual Accounts for FY 2014-15 were likely to be made available.

Now, in the ARR for MYT Control Period from FY 2017-18 to FY 2019-20 (ARR petition), PSPCL has furnished the Audited Annual Statement of Accounts (Audited Annual Accounts) for FY 2014-15. But, the Audited Annual Accounts of PSPCL for FY 2014-15 did not contain the audited figures of energy sales, generation and power purchase. PSPCL was directed to furnish the audited figures of energy sales, generation and power purchase. PSPCL in its reply, vide memo no. 1178 dated 23.12.2016 submitted that as per the duties of Statutory Auditors laid down under section 227 of the Companies Act, 1956, auditing of energy sales, generation and power purchase figures are over and above the scope of Statutory Audit. It was submitted that the figures taken in the ARR are duly signed by the Chief Engineer/ ARR&TR, who is duly authorised by the company for preparing the ARR petition and disclosing the information to the Commission. Further, the ARR has been duly approved by the WTDs of the Company, indicating that the figures of energy sales, generation and power purchase are also approved by the WTDs. After considering the reply of PSPCL, the Commission decided to take into consideration the energy sales, generation and power purchase figures as submitted by PSPCL in the ARR petition. However, the Commission once again directs PSPCL to submit these figures duly audited in future.

The figures supplied by PSPCL vary somewhat from the figures taken into account in the Review for FY 2014-15 by the Commission. This Chapter contains a final true up of FY 2014-15, based on figures submitted by PSPCL in the ARR petition.

2.2 Energy Demand (Sales)

2.2.1 The sales projected by PSPCL during the determination of ARR for FY 2014-15, sales approved by the Commission in the Tariff Order of FY 2014-15, revised estimates furnished by PSPCL during determination of ARR of FY 2015-16, sales revised by the Commission in review, sales figures now given by PSPCL and approved by the Commission are summarized in Table 2.1.

Table 2.1: Energy Sales – FY 2014-15

(MU)

Sr. No.	Category	Projected by PSPCL during determination of ARR FY 2014-15	Approved by the Commission in T.O. FY 2014-15	Revised Estimates by PSPCL during determination of ARR FY 2015-16	Revised by the Commission in Review	Energy Sales figures now submitted by PSPCL for true up	Now approved by the Commission
I	II	III	IV	V	VI	VII	VIII
1.	Domestic	11683	11637	11489	11490	11483	11483
2.	Non-Residential	3347	3331	3246	3245	3266	3266
3.	Small Power	981	981	924	925	915	915
4.	Medium Supply	1998	1996	1943	1942	2009	2009
5.	Large Supply	10248	10172	11252	11252	11097	11097
6.	Public Lighting	170	170	187	185	183	183
7.	Bulk Supply	619	619	633	634	639	639
8.	Railway Traction	130	130	153	151	152	152
9.	**Total metered Sales (within the State)**	**29176**	**29036**	**29827**	**29824**	**29744**	**29744**
10.	Common Pool	289	289	309	309	307	307
11.	Outside State sales	129	54	73	73	157	73*
12.	**Total metered Sales (9+10+11)**	**29594**	**29379**	**30209**	**30206**	**30208**	**30124**
13.	AP consumption	11586	9749	10832	10264	10658	9630**
14.	**Total Sales (12+13)**	**41180**	**39128**	**41041**	**40470**	**40866**	**39754**

* as discussed in para 2.2.2
** as discussed in para 2.2.3

PSPCL has furnished the total sales at 40866 MU for FY 2014-15, in the ARR petition, as shown column VII of Table 2.1.

2.2.2 Metered Sales

In view of discussion as brought out in para 2.1 and on the basis of sales figures supplied by PSPCL in the ARR petition, the Commission approves metered sales within the State at 29744 MU.

PSPCL has also submitted 157 MU of energy sales under the head "Outside State sale," consisting of 20 MU of sales to other States,53 MU as royalty of Himachal Pradesh (HP) from Shanan and 84 MU as free share from RSD to HP. The Commission considers the Outside State sale of 73 MU, after excluding free share of HP in RSD from Outside State sales. Further, the Commission considers sales to common pool consumers as 307 MU on the basis of figures given in the ARR petition.

Thus, total metered sales now approved by the Commission are 30124 MU as shown in column VIII, Sr. No. 12 of Table 2.1.

2.2.3 **AP Consumption**

PSPCL in its ARR for FY 2014-15, projected the AP consumption as 11586 MU and the Commission, in its Tariff Order for FY 2014-15, approved AP consumption of 9749 MU, after applying 3 year CAGR from FY 2010-11 to FY 2013-14, which worked out to be 0.24%, over the consumption of 9726 MU approved by the Commission for FY 2013-14 (review) in the Tariff Order for FY 2014-15. In the ARR petition for FY 2015-16, PSPCL had revised the estimate of AP consumption to 10832 MU for FY 2014-15. The Commission, in the review of FY 2014-15 carried out in the Tariff Order for FY 2015-16, approved the AP consumption of 10264 MU for FY 2014-15, on the basis of energy pumped during April, 2014 to December, 2014 and on proportionate basis (in proportion to average of the percentages of AP consumption during the last three months to the first nine months of FY 2011-12, FY 2012-13 and FY 2013-14) for the period from January, 2015 to March, 2015. PSPCL has now submitted the energy sales to AP category for FY 2014-15 as 10658 MU, in the ARR petition.

PSPCL in the ARR has submitted as under:

i) The Commission had approved the AP consumption of 9749 MU for FY 2014-15 in the Tariff Order, after applying 3-year CAGR of 0.24% from FY 2010-11 to FY 2013-14 (RE) over the AP consumption of 9726 MU approved by the Commission for FY 2013-14 (RE) in the Tariff Order for FY 2014-15, against 11586 MU projected by PSPCL in its ARR of FY 2014-15. In the revised estimate of FY 2014-15, the Commission determined the AP consumption based on the month-wise energy pumped in AP feeders.PSPCL has further submitted that the Commission has changed the methodology for AP consumption in the Tariff

Order for FY 2014-15. PSPCL had submitted the AP consumption based on sample meters. The actual AP consumption as recorded for FY 2014-15 is slightly higher by 395 MU than that approved by the Commission in review.

ii) The Commission has changed the methodology for AP consumption in Tariff Order for FY 2014-15 and has disallowed the actual sales of AP consumers on the grounds of change in methodology for deriving AP consumption. However, PSPCL has complied with most of the directives of the Commission regarding the implementation of metering of AP consumers.

iii) The disapproval of AP sales ultimately results in a huge disallowance in the power purchase cost. It is only the sixth year of PSPCL's functioning as a corporate entity, however, the legacy of disallowances in AP sales as prevalent in the erstwhile PSEB era are still being continued for the PSPCL. PSPCL believes that the whole agenda for carrying out the reform process through unbundling and introducing the Transfer Scheme was to bring in more transparency and accountability in the successor entities. It is, therefore, essential that such newly created entities be provided with the necessary handholding support so that they have enough funds to meet the stipulated targets.

iv) Since incorporation of PSPCL, it is aggressively pursuing the directives issued by the Commission within the overall budgetary constraints. The financial constraints are largely on account of the huge disallowances in actual expenses. Further, continued disallowance may lead PSPCL to the same financial crisis. The Electricity Act, 2003 mandates that the SERC should safeguard consumers' interest and at the same time, ensure recovery of the cost of electricity in a reasonable manner. PSPCL has prayed to balance the public interest with the financial viability of the Utility, which will be in the long-term interest of the consumers.

v) Further, continued disallowance may lead PSPCL to the same financial crisis as prevalent in erstwhile PSEB. Also, the Tariff Policy stipulates that in case the performance of the utilities is below the desired levels, then a suitable trajectory should be approved by the Commission to bring the performance to the desired levels. In this case, PSPCL has prayed that being a newly incorporated entity, suitable time frame be provided for meeting the desired performance levels and then impose any disallowances/penalties, if required.

vi) AP consumption has been considered based on sample meters as AP consumption based on energy pumped in AP feeders is not a reliable method of assessing the consumption. Further, the computation of AP consumption based on energy pumped in AP feeders involves assumptions with respect to losses on agriculture feeders and contribution of AP consumption on mixed load feeders and any incorrect assumption shall affect the consumption adversely for PSPCL. Further, working out the final output on the basis of reverse computation is not an appropriate method of computation. Also, this method of calculation is not being adopted by any other SERC. Further, there is hardly any State, having significant AP consumption, which has 100% metering of AP consumers.

vii) The approach adopted by the Commission for calculating AP consumption on pumped energy is not correct due to the following reasons:

(a) AP consumption of Kandi Area mixed feeders taken as 30% of the total consumption, whereas PSPCL has calculated the same as 45% of the total consumption. PSPCL has supplied detailed calculations to this effect to the Commission vide its letter no. 2944 dated 23.12.2013.

(b) The 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 facts. All new AP connections and shifting of connections are on HVDS only and therefore losses on AP feeders are nowhere more than 6-10%.

PSPCL has prayed that in light of the above, the AP sales as submitted in the Petition be approved.

Commission's views

Section 55 of the Electricity Act, 2003 mandates supply of electricity through a correct meter in accordance with the regulations to be made by the Central Electricity Authority. The Commission has been issuing directions to the erstwhile PSEB (now PSPCL) through various Tariff Orders to prepare a road map to achieve 100% metering, but no action has been taken by the distribution licensee, even after a time period of more than 10 years. Most of the unmetered consumers in Punjab belong to AP category. Punjab Government is fully subsidising AP consumers by paying huge agriculture subsidy. This is public money. The inflated claim of agriculture consumption results in lower T&D losses, creating a myth of improvement in performance parameters of the distribution licensee. Thus, accurate computation of AP consumption is essential to protect public money and also to determine actual T&D losses in the State.

In the absence of 100% metering, the only alternative is to estimate AP consumption on the basis of some reliable data available with the distribution licensee (PSPCL). The endeavour of the Commission has always been to determine the AP consumption as accurately as possible and near to actual, for which various directions have also been issued from time to time by the Commission.

Punjab is one of the few states in the country where the agricultural load has been segregated from other mixed rural load at 11 kV feeder level. As per the pumped energy data for FY 2014-15 submitted by PSPCL in the ARR petition, 95.40% of the AP consumption has been recorded on exclusive AP feeders and remaining on mixed load/kandi area feeders. The input energy of all 11 kV AP feeders is recorded daily at the grid-substations and is available for verification at the grid substations.

In order to examine the authenticity AP consumption, the Commission carried out an exercise during processing of ARR for FY 2013-14 and compared the AP consumption claimed on the basis of sample meters data with pumped energy data supplied by PSPCL. It was observed that during the months of April, May, November and December, 2012, more than 40% divisions of PSPCL had claimed AP consumption even more than the input energy. Similar trends were observed from the scrutiny of the data for FY 2010-11 and FY 2011-12. Accordingly, it was decided in the Tariff Order for FY 2013-14, to estimate AP consumption for review of FY 2012-13 on the basis of the pumped energy data supplied by PSPCL. PSPCL filed an Appeal (No. 106 of 2013) in the matter of ARR for FY 2013-14 and review for FY 2012-13, before the Hon'ble APTEL and challenged various aspects of the Tariff Order but did not at any stage raised the issue regarding methodology for assessment of AP consumption on the basis of pumped energy data in the aforesaid Appeal before the Hon'ble APTEL. The Appeal has since been decided by an Order dated 16.12.2015 of the Hon'ble APTEL. Thus, the methodology of assessment of AP consumption on the basis of pumped energy data has attained its finality.

The Commission has been following the pumped energy methodology to assess AP consumption in all the subsequent Tariff Orders and has discarded the sample meters methodology. The Commission in the Tariff Order for FY 2016-17 had directed PSPCL to stop submission of sample meters data and to utilise the healthy sample meters to comply with the directions of the Commission to provide 100% metering on atleast 10% AP feeders. However, PSPCL is yet to comply with the directions of the Commission.

Where the issue of change in methodology is concerned, the methodology used for carrying out review for FY 2014-15 in the Tariff Order for FY 2015-16, is being followed for carrying out the true up for FY 2014-15. Thus, there is no change in methodology. The Commission makes it clear that as far as verification of the data submitted by PSPCL is concerned, the Commission is free to adopt any transparent and equitable methodology to arrive at a fair and accurate assessment of AP consumption in public interest. It is the statutory duty of the Commission to carry out a prudence check and verification of all the claims that may be lodged by the licensee for the projections for the ensuing year or review of the current year or true up of the previous year. The distribution licensee cannot be allowed to burden the consumers and State exchequer by claiming higher subsidy from the State Government by manipulating AP consumption and claiming lower T&D losses, by citing the alibi of change in methodology.

PSPCL has submitted that the Commission has erred in calculating higher T&D loss level for AP feeders by deducting 2.5% losses at transmission level and 15% of distribution losses at sub-transmission level from total T&D losses of the State. PSPCL has further submitted that since all new AP connections are released on HVDS, so the losses of the AP feeders are in the range of 6-10%. The claim of PSPCL is contrary to the submissions made by it in the status of compliance of directives submitted vide CE/ARR & TR letter no. 2074 dated 17.02.2016, wherein in reply to directive at para 6.1(iii), it has been mentioned that analytical losses of HVDS feeders are in the range of 6-10%, whereas those of non-HVDS AP feeders are in the range of 12-20%. So, the average analytical losses of AP feeders, as per claim of PSPCL, will be approximately 14-15%. In case, commercial losses due to rampant unauthorized running of AP motors during paddy season are taken into account, the losses in the AP sector would be much higher. On the other hand, the Commission has only considered 14.08% loss level for FY 2014-15 to allow AP consumption to PSPCL.

However, to arrive at a more accurate and fair conclusion regarding loss level prevailing in AP sector, the Commission, while taking the review of FY 2014-15 in the Tariff Order for FY 2015-16, directed PSPCL in para 3.2.2 as under:

"PSPCL is directed to cover atleast 5% of the AP feeders under 100% metering spread across the State by December, 2015 and to engage an independent agency to collect data of pumped & billed energy to calculate T&D losses of these feeders on regular basis".

It was felt by the Commission that the loss level in 11 kV AP feeders would more or less remain of the same order in various years and in case PSPCL is able to demonstrate its claim of lower T&D losses in the subsequent year(s), the Commission would consider the same. Accordingly, in the Tariff Order for FY 2016-17, the Commission reiterated its directions to PSPCL to install 100% meters on 5% pure AP feeders by December, 2016 and another 5% by December, 2017. PSPCL has failed to implement the directions of the Commission and to demonstrate its claim of lower T&D losses on the AP feeders. In the review meeting held with PSPCL management on 14.10.2016, the Commission on the specific request of the distribution licensee permitted PSPCL to cover only 1% AP feeders under 100% metering and carry out an exercise to capture T&D losses on these AP feeders through third party within one year. However, no compliance of the above mentioned directive has been reported by PSPCL. In the absence of segregation of overall losses of PSPCL at 66 kV and 11 kV level, the Commission has decided to determine the loss level at 11 kV as per regulation 30(2) of the PSERC (Terms & Conditions of Intra-state Open Access) Regulations, 2011.

Regarding assessment of AP consumption of consumers fed from mixed Kandi Area feeders, the pumped energy for agriculture load was taken as 30% of the total pumped energy of kandi area feeders in proportion to the connected load. PSPCL vide its letter no. 2944 dated 23.12.2013 requested the Commission to consider 45% of the total pumped energy of mixed Kandi Area feeders for assessing the consumption of AP consumers being fed from mixed Kandi Area feeders (instead of 30% as taken by the Commission for assessing AP consumption in the Tariff Order for FY 2013-14), on the plea that although the percentage of sanctioned load of AP consumers fed from mixed Kandi Area feeders is around 30% but the billed energy of the consumers is around 45% of the total pumped energy. The above reasoning submitted by PSPCL was not found convincing by the Commission, and PSPCL was accordingly asked to submit comments on the observations of the Commission in the matter vide letter no. 702 dated 20.01.2014. But, PSPCL did not submit its comments in the matter, and presuming that PSPCL had nothing more to say in the matter, the Commission accordingly estimated and approved the AP consumption for FY 2010-11 (true up), FY 2011-12 (true up) and FY 2013-14 (review) in the Tariff Order for FY 2014-15, on the basis of energy pumped data / information supplied by PSPCL in the ARR for FY 2014-15.

To ensure more accurate assessment of agriculture consumption on Kandi Area feeders, the Commission accorded opportunity to PSPCL to demonstrate consumption of AP load fed from mixed kandi area feeders. PSPCL was directed in the Tariff Order for FY 2013-14 that AP load of Kandi Area feeders fed from mixed feeders should be segregated and in case of any practical difficulty due to difficult terrain in certain areas, all AP motors of such feeders should be metered during the year 2013-14. This directive was reiterated in the Tariff Order for FY 2014-15, but PSPCL failed to implement the directions of the Commission. In the Tariff Order for FY 2015-16, the Commission directed PSPCL to utilise Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) for segregation of mixed kandi area feeders and/or achieve 100% metering on these feeders during 2015-16.

This scheme has specifically been launched by Government of India to achieve segregation of 11 kV mixed agriculture feeders and to ensure 100% metering of consumers as per the mandate of the Act. However, PSPCL deliberately ignored the directions of the Commission and the work of separation of Kandi Area feeders was excluded from the DPRs submitted to REC for approval under DDUGJY without the approval of the Commission. Thus, the Commission decides to continue its methodology to assess AP consumption of Kandi Area feeders.

During processing of ARR for FY 2015-16, the Commission noticed that PSPCL had booked huge pumped energy due to non-operational/defective meters at the grid substations. The Commission in para 3.2.2 of the Tariff Order for FY 2015-16 observed as under:

".............from April, 2014 to December, 2014, PSPCL has claimed 482.11 MU on average basis on account of defective meters or some other reasons. On validation of this claim at few grid sub-stations, it has been found that average energy has been booked on adhoc basis against agriculture feeders by declaring healthy meters as defective without any report of competent agency on record. The matter needs further investigation before taking a final decision.............".

Further, the Commission in para 3.2.3 of the tariff Order for FY 2016-17 noted as under:

"....................The matter was further investigated and it was found that PSPCL has booked 373.45 MU on average basis during FY 2013-14 and 517.26 MU during FY 2014-15. On an average, PSPCL booked pumped energy on average basis to about 140 feeders each month during FY 2013-14 and 158 feeders during FY 2014-15. A random checking of the data and status of working of meters/ metering equipment of 60 no. such 11 kV AP feeders fed from 12 no. 220/66 kV grid sub-stations was carried out by an officer of the Commission, with prior intimation to PSPCL/PSTCL, with the request to instruct the concerned officers/officials to remain present during inspection and also make available all the relevant data/record to the inspecting

officer.

The inspecting officer, in the presence of the PSPCL/PSTCL officers/officials, checked the status of the meters/metering equipment and inspected the relevant record of the grid substations to cross verify the reasons attributed for booking pumped energy on average basis by declaring some feeder meters as non functional in the monthly pumped energy data submitted to the Commission. The statements of the officers/officials were also recorded enunciating the reasons for booking pumped energy on averages basis on some AP feeders. After detailed analysis, following discrepancies were noticed:

- *i) In 30 cases (50%), the meters were found in order but still average units were booked on arbitrary basis.*
- *ii) Only in 10 cases, genuine technical reasons for non-recording of correct energy by grid meters were found justified but the average units were booked on adhoc basis.*
- *iii) In 2 cases, double multiplication factor was used to calculate pumped energy.*
- *iv) In one case, the load of the feeder was shifted to another AP feeder but still average units were booked although no load was fed from that AP feeder.*
- *v) In one case, it was found that Urban Pattern Supply (UPS) load was shifted on AP feeder and pumped energy was shown as that of AP feeder.*
- *vi) In 10 cases, various technical reasons, like blowing off fuse or load shifting etc. were reported by the staff for booking average energy but the same could not be substantiated from the grid sub-stations record.*

It was observed in the above mentioned 60 feeders that 35.08 LU excess pumped energy was booked against 101.23 LU pumped energy claimed on average basis (34.66%) during FY 2013-14. Similarly, during FY 2014-15, 288.04 LU excess energy was booked against 785.95 LU pumped energy claimed on average basis (34.64%). In most cases, average units were booked to AP feeders to keep 11 kV bus bar losses at the grid sub-stations below 1%.

After considering all the relevant records made available and statements of the staff recorded during inspection, a detailed report was prepared and a copy of the same was sent to PSPCL vide letter no. 4335/36/ PSERC/DTJ-118 dated 04.08.2015, with the request to offer comments, if any, by 18.08.2015. Failing to solicit any response from PSPCL, reminders dated 25.08.2015 and 04.09.2015 were sent but PSPCL preferred not to respond to any of these communications. The comments received from PSTCL vide letter no. 7826 dated 19.08.2015 were taken into account. After *detailed examination of the matter, the Commission decided to reduce the pumped energy booked on average basis by 34.66% during FY 2013-14. To curb the practice of booking extra pumped energy arbitrarily by showing AP feeder meters defective/non-functional without any evidence on record, the Commission issued detailed directions to PSPCL and PSTCL vide letter no. 7313 dated 15.10.2015 and letter no. 7312 dated 15.10.2015 respectively.*

PSPCL submitted comments on the findings of the validation report vide CE/ARR&TR letter no. 2527 dated 19.10.2015 but no documentary evidence in support of the claims for booking pumped energy on average basis as directed by the Commission vide letter dated 15.10.2015 was supplied. The Commission again directed PSPCL to supply necessary evidence within 15 days vide letter no. 8798 dated 30.11.2015, followed by reminder vide letter no. 10742 dated 15.01.2016. The Commission again directed PSPCL to supply necessary evidences within 15 days vide letter no. 8798 dated 30.11.2015 followed by reminders vide letter nos. 9679 dated 22.12.2015 and 10742 dated 15.01.2016. PSPCL vide Chief Engineer/ARR & TR letter no. 2080 dated 23.02.2016 submitted feeder wise reply along with supporting documents.

From the scrutiny of the documents submitted by PSPCL, it has been observed that feeder wise comments are the same as were offered by PSPCL vide letter no. 2527 dated 19.10.2015 and also documentary evidences are not in accordance with the directions of the Commission. The reply submitted by PSPCL and the documentary evidences have not been found satisfactory and accordingly the Commission decided to reduce Pumped Energy booked on average basis during FY 2013-14 by 34.66%."

Subsequently, the pumped energy data of another 5 numbers AP feeders fed from 220 kV Sub-station, Ajitwal was validated by the officer of the Commission on 30.11.2015 for FY 2014-15 and FY 2015-16 (up to October, 2015). It was found that huge averages on arbitrary basis were booked by PSPCL against all the five feeders from August, 2014 to August, 2015 by showing the meters as dead stop, whereas the meters of all the five feeders were found to be recording true pumped energy in PSTCL record for the entire period of August, 2014 to August, 2015. The multiplying factor (MF) of Dhudike feeder was reported as 1000 in the online data from April, 2014 onwards but on validation, it was found to be 2000 and as such the pumped energy of the feeder was re-calculated. Also, the multiplying factor of remaining four feeders were reported as 1000 during FY 2013-14 and 2000 from April, 2014 onwards in the online data, but there was no entry available in the record for change of MF w.e.f. April, 2014 for these four feeders and officers present at site also confirmed in writing that MF of these feeders was 1000 from April 2014 onwards. The excess pumped energy claimed for these five feeders was worked out to be 75.96% and 48.68% of the pumped energy booked on average basis for FY 2014-15 and FY 2015-16 (upto October 2015), as per Multiplying Factors (MF) confirmed by the site officers of both PSPCL and PSTCL in their written statements.

The detailed report of five feeders validated on 30.11.2015, was sent to both PSPCL and PSTCL on 05.01.2016 for comments. PSTCL supplied the comments on 25.01.2016 and PSPCL supplied the comments on 11.03.2016. Both PSPCL and PSTCL confirmed the MF of four feeders (other than Dhudike) as 2000 w.e.f. April, 2014 instead of 1000 as confirmed by their officers present at site during inspection. The testing report of P&M organisation of PSPCL was also enclosed for confirmation. After considering the comments of both PSPCL and PSTCL, the excess pumped energy booked at 220 kV sub-station Ajitwal was re-worked out as 70.58% of the pumped energy booked on averages basis in FY 2014-15. Thus, the excess pumped energy booked by PSPCL on all 65 number feeders fed from 13 number grid sub-stations has been calculated as 43.20% of the average pumped energy booked during FY 2014-15 and accordingly, the Commission decides to reduce the pumped energy booked on average basis by 43.20% during FY 2014-15.

In the Tariff Order for FY 2015-16, the Commission approved the AP consumption for FY 2014-15 (review) on the basis of data supplied by PSPCL of energy pumped for AP supply from April, 2014 to December, 2014 and estimated (on proportionate basis) energy pumped for AP supply during January, 2015 to March, 2015.

In view of the above, the Commission has estimated the AP consumption as 9830 MU during FY 2014-15, on the basis of energy pumped data supplied by PSPCL, as worked out in Table 2.2.

Table 2.2: AP Consumption for FY 2014-15

(MU)

Sr. No.	Description	Energy
(i)	Energy pumped during April, 2014 to March, 2015 in case of 3-phase 3-wire AP feeders	10481.83
(ii)	Energy pumped during April, 2014 to March, 2015 in case of 3-phase 4-wire AP feeders	10.05 [a]
(iii)	Energy pumped during April, 2014 to March, 2015 in case of Kandi Area mixed feeders feeding AP load	495.19 [b]
(iv)	Reduction of pumped energy booked on average basis @43.20% of 517.26 MU	223.46
(v)	Total energy pumped during FY 2014-15 for AP supply {(i)+ (ii)+ (iii)-(iv)}	10763.61
(vi)	Less losses @11.39%[c] (16-(2.5+15% of 14.08)) {(v)x11.39%}	1225.98
(vii)	Net AP consumption for FY 2014-15 {(v) - (vi)}	9537.63
(viii)	AP consumption for load of 83.04[d] MW running on Urban Feeders [not included above at Sr. No.(vii)] {(vii)x 83.04/8587.55[e]}	92.23
(ix)	**Total AP consumption for FY 2014-15 {(vi)+ (vii)}**	**9629.86**

(a) *Calculated by multiplying the number of 3-phase 4-wire AP feeders for each month with AP consumption per feeder for that month in case of 3-phase 3-wire AP feeders.*
(b) *Calculated by assuming the AP load on Kandi Area feeders feeding mixed load as 30%.*
(c) *The loss @11.39% (11kV and below) for FY 2014-15 has been taken from the target of T&D loss @16% fixed in the Tariff Order for FY 2014-15*
(d) *As per data supplied by PSPCL in the ARR petition (Volume-I (Part-1), Format 1A).*
(e) *AP load running on 3-phase 3-wire, 3-phase 4-wire and Kandi Area mixed feeders is 8587.55 MW ending March, 2015 as per data/information supplied by PSPCL in the ARR petition (Volume-I (Part-1),Format 1A).*

Thus, the Commission approves the AP Consumption of 9629.86 MU (say 9630 MU) for FY 2014-15.

2.3 Transmission and Distribution Losses (T&D Losses)

PSPCL had projected the T&D losses of 16.00%in its ARR Petition for FY 2014-15. The Commission fixed the target of overall T&D losses at 16.00% for FY 2014-15, as projected by PSPCL (including transmission loss of 2.5% for PSTCL) in its Tariff Order for FY 2014-15.

In its ARR Petition for FY 2015-16, PSPCL projected the revised T&D losses of 16.50% for FY 2014-15. However, the Commission decided to retain the overall T&D losses at the level of 16.00% as fixed in the Tariff Order for FY 2014-15.

Now, PSPCL in its present ARR Petition, has intimated the T&D losses of15.20%, as actual, for FY 2014-15, considering the AP consumption of 10658 MU for FY 2014-15. PSPCL has submitted that the actual value of T&D losses for FY 2014-15, has been arrived at in accordance with the actual energy sales, own generation and energy purchase, which is lower than approved loss level of 16.00%, amounting to over achievement of 0.80% in comparison to the target given by the Commission for the year.

PSPCL has submitted that PSPCL is making concrete efforts to reduce and control the losses and is already at par with some of the efficient utilities in the country. PSPCL has already taken initiatives to reduce T&D losses, which are discussed in the compliance report on the directives given by the Commission. PSPCL has been able to restrict T&D losses to levels below the approved loss level. The loss reduction achieved is because of various loss reduction measures initiated by PSPCL. The lower than approved loss levels are an indication of the significant technical and operational efficiency efforts initiated by the PSPCL to reduce losses in the LT networks. PSPCL has further submitted that in the previous Tariff Orders, the Commission has disallowed part of the sales pertaining to AP consumption and added such disallowed sales to the T&D losses. The re-worked T&D losses being higher than the approved losses, the Commission is disallowing the consequential power purchase cost, by multiplying the excess losses with the average rate of power purchase. However, the average rate of power purchase considered by the Commission includes the fixed cost of power purchase, which cannot be saved, even if the losses and hence, power purchase quantum is lower. Thus, disallowance of power purchase cost on account of excess losses, needs to be computed by multiplying the excess losses with the average variable rate of power purchase, after excluding the fixed cost of power purchase. PSPCL has further prayed that the actual AP sale, which is in accordance with audited annual accounts of the PSPCL be approved, for the final truing up for FY 2014-15. In light of the above, PSPCL prayed to approve the actual T&D loss of 15.20% for FY 2014-15.

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

The Commission, in para 2.2.3 of the Tariff Order, has determined and approved AP consumption as 9630 MU for FY 2014-15. As brought out in the para, the Commission has determined the AP consumption on the basis of energy pumped to the AP consumers, as the AP consumption projected by PSPCL on the basis of sample meters has not been found to be realistic. The determination of AP consumption by either methodology, rather any methodology, should not have any bearing on T&D losses, if determination of AP consumption is correct. The endeavour of the Commission has always been to determine the AP consumption as accurately as possible and near to actual. As such, the contention of PSPCL in this regard cannot be accepted.

Accordingly, the Commission considers the overall T&D loss level of 16% for FY 2014-15 as approved in the Tariff Order for FY 2014-15, including 2.5% transmission loss for PSTCL approved for FY 2014-15.

2.4 PSPCL'S Own Generation

2.4.1 **Thermal Generation:** The station-wise generation projected by PSPCL during the determination of ARR by the Commission for FY 2014-15, generation approved by the Commission in the Tariff Order, revised estimates furnished by PSPCL during determination of ARR of FY 2015-16, generation revised by the Commission in the review, generation figures now supplied by PSPCL in the ARR petition and generation now approved by the Commission are given in Table 2.3.

Table 2.3: Thermal Generation – FY 2014-15

(MU)

Sr. No.	Thermal Station	Projected by PSPCL during determination of ARR for FY 2014-15		Approved by the Commission in T.O. FY 2014-15		Revised Estimates by PSPCL during determination of ARR for FY 2015-16	Revised by the Commission in Review		Generation now submitted by PSPCL in the ARR		Now approved by the Commission	
		Gross	Net	Gross	Net	Gross	Gross	Net	Gross	Net	Gross	Net
I	II	III	IV	V	VI	VII	IX	X	XI	XII	XIII	XIV
1.	GNDTP	3172	2823	3062	2725	1744	1744	1552	1433*	1273	1433*	1275
2.	GGSSTP	9500	8693	9808	8974	6825	6825	6245	5751	5261	5751	5262
3.	GHTP	6855	6272	7221	6607	5240	5240	4795	4508	4117	4508	4125
	Total	**19527**	**17788**	**20091**	**18306**	**13809**	**13809**	**12592**	**11692**	**10651**	**11692**	**10662**

* including 118 MU during trial run of Unit IV of GNDTP.

Plant-wise generation figures supplied by PSPCL in the ARR petition and the generation figures validated by the Commission have been taken into account.

Accordingly, the Commission approves gross thermal generation for FY 2014-15 at 11692 MU.

Auxiliary Consumption

The auxiliary consumption projected by PSPCL during determination of ARR by the Commission for FY 2014-15, auxiliary consumption approved by the Commission in the Tariff Order, revised estimates furnished during determination of ARR of FY 2015-16, auxiliary consumption revised by the Commission in the review, auxiliary consumption figures supplied by PSPCL with the ARR petition and auxiliary consumption now approved by the Commission are given in Table 2.4.

Table 2.4: Auxiliary Consumption – FY 2014-15

Sr. No.	Thermal Station	Projected by PSPCL during determination of ARR FY 2014-15	Approved by the Commission in T.O. FY 2014-15	Revised Estimates by PSPCL during determination of ARR FY 2015-16	Revised by the Commission in Review	Now Submitted in ARR	Now approved by the Commission
I	II	III	IV	V	VI	VII	VIII
1.	GNDTP	11.00%	11.00%	11.00%	11.00%	11.17%	11.00%
2.	GGSSTP	8.50%	8.50%	8.42%	8.50%	8.53%	8.50%
3.	GHTP	8.50%	8.50%	8.60%	8.50%	8.66%	8.50%

It is observed that actual auxiliary consumption now reported by PSPCL is marginally higher for GNDTP, GGSSTP and GHTP than the approved levels. For GHTP, PSPCL has submitted that due to low PLF on account of low system demand, the value of auxiliary consumption for FY 2014-15 was 8.66%, which is higher than the norm of 8.50%. However, the Commission observes that the auxiliary consumption of GGSSTP and GHTP has been approved on normative basis, as specified in CERC Tariff Regulations, 2014.

For GNDTP, PSPCL in the ARR petition has submitted that GNDTP is an old generating station and all four units have already outlived their useful life of 25 years. PSPCL has also submitted that as per power demand scenario in the State of Punjab, GNDTP units remained under reserve shutdown for longer period and even during operational period, the units were backed down for maximum time as per directions of Power Controller (PC), Patiala. Frequent stop/start after reserve shutdown and running of units under backing down affects the performance of units. During FY 2014-15, there were 18 no. stop/start-ups of GNDTP units after reserve shutdown, and total duration of reserve shutdown during FY 2014-15 was 14376 hours. During backing down, power generation is reduced but most of the auxiliaries remain running at nearly full load, which results in increase in percentage auxiliary consumption. Further, due to technology constraints in 110 MW units, it is difficult even for the Original Equipment Manufacturers (OEMs) to commit any guaranteed performance for the units.The auxiliary consumption remains more or less constant for the generating units. However, the auxiliary consumption for GNDTP is slightly higher, i.e., 11.17%, when compared to the approved figure of 11.00%.

PSPCL has further submitted that the relaxation is provided by other SERCs for the State Generating Companies in their respective states based on the ground realities. PSPCL in this regard has submitted a reference from the order dated 12.09.2010 of MSERC in the matter of petition filed by MSPGCL, wherein the auxiliary consumption at relaxed level has been approved on account of vintage of station, poor quality of coal and de-rating of the unit no. II. PSPCL has further submitted an extract from the order dated 13.10.2008 of UPERC in the matter of petition filed by UPRVUNL, wherein the relaxation in auxiliary consumption was allowed on account of failure to carryout timely maintenance, due to non-availability of adequate funds due to default in its payments.

PSPCL has submitted that Regulation 20 of PSERC Tariff Regulations, 2005 states that while determining cost of generation, the Commission shall be guided by Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009, as amended from time to time. Regulation 26 (iv) of CERC Tariff Regulations specify that the norm for auxiliary consumption for all thermal generating stations shall be 8.50%, except for those mentioned in the said regulation. However, GNDTP having sets of 110 MW/120MW can be compared with Tanda Thermal Power Station, for which CERC has determined auxiliary consumption to be 12% and thus, the actual auxiliary consumption for GNDTP station for FY 2014-15, being 11.17%, is within the range of norm specified, as provided in the PSERC Tariff Regulations, 2005, benchmarked with CERC Tariff Regulations, 2009.

PSPCL has further submitted that the Hon'ble APTEL in its Judgment dated 18thOctober, 2012, held as follows:

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

PSPCL has submitted that from the above reference, it can be seen that the norm for auxiliary consumption for GDNTP station of 110 MW/120 MW unit sets should be benchmarked with that applicable for Tanda Station at 12%, in accordance with the provisions of the State Regulations as linked with the CERC norms. The actual auxiliary consumption for GNDTP for FY 2014-15 is 11.17%, which is lower than norm of 12% as applicable to Tanda Station. PSPCL has prayed to approve the actual auxiliary consumption for GNDTP at 12.00%.

PSPCL has also submitted that PSPCL had strived hard to achieve the normative auxiliary consumption approved by the Hon'ble Commission. However, the actual auxiliary consumption is slightly higher than that approved by the Hon'ble

Commission for all the three Generating Stations.

The Commission observed that the Hon'ble APTEL vide its order dated 18.10.2012in Appeal Nos. 7, 46 &122 of 2011had remanded back to the Commission various issues, including auxiliary consumption in respect of GNDTP station, for passing an appropriate order. Further, Units I, II, III and IV of GNDTP were put on commercial operation on 31.05.2007, 19.01.2006, 07.12.2012 and 27.09.2014 respectively, after completion of Renovation and Modernisation (R&M) works. The Commission in its order dated 07.01.2013 in Petition No. 57 of 2012 (suo-motu), determined auxiliary consumption for all four units of GNDTP at 11%. The Commission in its review order dated 28.03.2013 in Petition No. 10 of 2013 did not allow further relief to PSPCL in the matter of auxiliary consumption of GNDTP. PSPCL filed an appeal (No. 174 of 2013) with the Hon'ble APTEL against Commission's order dated 28.03.2013. The order in the matter of Appeal No. 174 of 2013 has been pronounced by the Hon'ble APTEL on 22.04.2015 and found no infirmity in the order of the Commission regarding fixing of auxiliary consumption at 11% for GNDTP.

As such, the Commission finds no justification in allowing auxiliary consumption after R&M works of Units I, II, III and IV in excess of pre R&M value and approves auxiliary consumption for GNDTP units at 11.00%, as considered and approved in the Tariff Order for FY 2014-15.

In view of the above, the Commission approves the auxiliary consumption of 11.00%, 8.50% and 8.50% for GNDTP, GGSSTP and GHTP respectively. The net thermal generation on this basis works out to 10662 MU as shown in column XIV of Table 2.3.

2.4.2 **Hydel Generation:** The station-wise generation submitted by PSPCL to the Commission during determination of ARR for FY 2014-15, generation approved by the Commission in the Tariff Order, revised estimates furnished by PSPCL during determination of ARR of FY 2015-16, generation revised by the Commission in review and generation figures now furnished by PSPCL and those accepted by the Commission are given in Table 2.5.

Table 2.5: Hydel Generation – FY 2014-15

(MU)

Sr. No.	Hydel Station	Projected by PSPCL during determination of ARR for FY 2014-15	Approved by Commission in TO FY 2014-15	RE by PSPCL during ARR for FY 2015-16	Revised by Commission in TO FY 2015-16	Generation figures now submitted by PSPCL in the ARR	Now approved by the Commission
I	II	III	IV	V	VI	VII	VIII
1.	Shanan	451	518	482	482	508	508
2.	UBDC	334	342	353	353	384	384
3.	RSD	1716	1698	1729	1729	1865	1865
4.	MHP	1323	1362	1115	1115	1047	1047
5.	ASHP	741	729	666	666	615	615
6.	Micro hydel	8	7	8	8	7	7
7.	**Total own generation (Gross)**	**4573**	**4656**	**4353**	**4353**	**4426**	**4426**
8.	Less: Auxiliary consumption and Transformation losses	42	38	26	36	36	37*
9.	Less:HP share in RSD (free)	75	78	88	80	84	84**
10.	Less: HP Royalty in Shanan	54				53	
11.	**Total own generation (Net)**	**4402**	**4540**	**4239**	**4237**	**4253**	**4305**
12.	**PSPCL share from BBMB**						
(a)	PSPCL share (Net)	4141	4141	4012	4012	3858	3858
(b)	Common pool share (Net)	289	289	309	309	307	307
13.	**Share from BBMB (Net)**	**4430**	**4430**	**4321**	**4321**	**4165**	**4165**
14.	**Total hydro generation (Net) (Own + BBMB)**	**8832**	**8970**	**8560**	**8558**	**8418**	**8470**

* *Transformation losses @0.5% (22 MU), auxiliary consumption @0.5% for RSD generation of 1865MU and UBDC stage-1 generation of 192 MU (having static exciters and as intimated by PSPCL in the ARR)and@0.2%for others (15 MU).*

** *HP share in RSD (84 MU) as intimated by PSPCL in the ARR.*

The actual gross hydel generation from PSPCL's own hydel stations for FY 2014-15 is 4426 MU as per ARR and the Commission accepts the same. The Commission has worked out net hydel generation by deducting free HP share in RSD along with the auxiliary consumption and transformation losses, but inclusive of royalty of HP in Shanan. Thus, the net hydel generation for FY 2014-15, works out to 4305 MU. The actual net availability from BBMB as per ARR is 4165 MU, including common pool share, which the Commission accepts.

The Commission, therefore, approves net hydel generation for FY 2014-15at 4305 MU from PSPCL's own hydel generating stations and 4165 MU as net share from BBMB as shown in Table 2.5.

2.5 Power Purchase

The Commission in its Tariff Order of FY 2014-15 approved net power purchase of 19240 MU (net). During determination of ARR of FY 2015-16, PSPCL furnished revised estimates for power purchase of 25332 MU (net). But, in review, the Commission determined the net power purchase of 26956 MU. PSPCL has now submitted power purchase during FY 2014-15 as 28906 MU (net), in the ARR petition. This matter is further discussed in para 2.8.

2.6 Energy Balance

2.6.1 The details of energy requirement and availability for FY 2014-15 approved by the Commission in review in the Tariff Order of FY 2015-16 and figures now furnished by PSPCL in the ARR are given in Table 2.6.PSPCL has prayed in the ARR petition to approve the energy balance as projected in the ARR and allow incentive for lower T&D losses of 15.20% against approved trajectory of 16.00% for FY 2014-15. The energy balance, including T&D losses along with sales and availability now approved by the Commission is depicted in column VI of Table 2.6.

Table 2.6: Energy Balance – FY 2014-15

(MU)

Sr. No.	Particulars	Approved by the Commission in T.O. FY2015-16 in review	Now submitted by PSPCL in ARR	Now approved by the Commission	Sales & actual T&D losses as per approved energy available
I	II	III	IV	V	VI
A) Energy Requirement					
1.	Metered Sales	29824	29744	29744	29744
2.	Sales to Agriculture Pumpsets	10264	10658	9630	9630
3.	Total Sales within the State	**40088**	**40402**	**39374**	**39374**
4.	Loss percentage	16.00%	15.20%	16.00%	17.38%
5.	T&D losses	7636	7242*	7500	8284
6.	Sales to Common pool consumers	309	307	307	307
7.	Outside State Sales	73	157**	73	73
8.	**Total requirement**	**48106**	**48108***	**47254**	**48038**
B) Energy Available					
9.	Own generation (Ex-bus)				
10.	Thermal	12592	10651	10662	10662
11.	Hydro(Including share from BBMB and common pool consumers)	8558	8554**	8470	8470
12.	Purchase (net)	26956	28906	28906	28906
13.	**Total Available**	**48106**	**48111**	**48038**	**48038**

*Against 7245 MU and 48111, wrongly calculated in the ARR.
** Including HP Share in RSD.

2.6.2 The total energy available with PSPCL works out to 48038 MU (net), considering all purchases and own generation (net). With this energy available, the Commission works out overall T&D losses as 17.38%. The difference of 784 MU (net) between energy requirement and energy availability is owing to the underachievement of T&D loss target as discussed in para 2.3 and depicted in column V & VI of Table 2.6.

Higher T&D loss over and above the level approved by the Commission has resulted in increased net power purchase to the extent of 784 (8284-7500) MU. The matter is further discussed in para 2.9.

The Commission approves the total energy requirement for FY 2014-15 at 47254 MU after retaining overall T&D losses at 16%.

2.7 Fuel Cost

2.7.1 In its Tariff Order for FY 2014-15, the Commission approved the fuel cost as ₹4795.12 crore for a gross thermal generation of 20091 MU (gross). In review, this cost was revised to ₹3513.20 crore for the then approved gross generation of 13809 MU (gross). The details are given in Table 2.7.

Table 2.7: Fuel Cost – FY 2014-15

Sr. No.	Station	As per T.O. FY 2014-15		As per Review in T.O. FY 2015-16	
		Gross Generation (MU)	Fuel Cost (₹crore)	Gross Generation (MU)	Fuel Cost (₹crore)
I	II	III	IV	V	VI
1.	GNDTP	3062	753.49	1744	439.38
2.	GGSSTP	9808	2433.09	6825	1821.78
3.	GHTP	7221	1608.54	5240	1252.04
4.	**Total**	**20091**	**4795.12**	**13809**	**3513.20**

2.7.2 PSPCL, in its ARR petition, has indicated the actual fuel cost for FY 2014-15 for a gross generation of 11692 MU as ₹3203.76 crore, whereas in the Audited Annual Accounts of PSPCL for FY 2014-15, the total generation expenses are ₹3246.76 crore.

In the Audited Annual Accounts of PSPCL for FY 2014-15, the total generation expenses comprise of ₹3136.27crore for coal and oil consumption, ₹39.58 crore for other fuel related costs, ₹27.91 crore for fuel related losses and ₹43.01 crore for other operating expenses such as cost of water, lubricants, consumable stores and station supplies. Out of these, ₹43.01 crore booked towards other operating expenses do not form part of the fuel cost and are being considered under Repair and Maintenance Expenses covered in para 2.12. Thus, the net fuel cost for FY 2014-15 as per Audited Annual Accounts is taken as ₹3203.75 (3246.76-43.01) crore.

2.7.3 PSPCL for 2014-15 in its ARR petition, has intimated gross thermal generation of 11692 MU (including 118 MU generated during trial run of Unit-IV of GNDTP) based on calorific value and price of coal / oil as given in Table 2.7A. However, PSPCL in the Audited Annual Accounts, has indicated the net income of ₹9.83 crore (revenue from sale of power generating – cost incurred) during the trial run of GNDTP Unit-IV.

The Commission observes that PSPCL is looking after the generation business and distribution business, as such, the power generated during trial run of GNDTP Unit-IV had been injected into the grid of PSPCL without consideration of frequency at that time. As such, the Commission is not inclined to treat the power generated during trial run as power purchased at UI rate and consequently reduce that amount from the capital cost of the plant. However, fuel cost of the generation during trial runs will be considered and allowed as revenue expense.

2.7.4 The actual fuel cost intimated by PSPCL for FY 2014-15 in its ARR petition, for a gross thermal generation of 11692 MU is based on calorific value and price of coal / oil as given in Table 2.7A.

Table 2.7A: Calorific Value and Price of Coal and Oil as submitted by PSPCL for FY 2014-15

Sr. No.	Station	Calorific value of coal (kCal/kg)	Calorific Value of Oil (kCal/lt)	Price of Oil (₹/KL)	Price of coal excluding transit loss (₹/MT)	Transit loss
I	II	III	IV	V	VI	VII
1.	GNDTP	4129.99	9400	51253.06	3883.29	(-)0.20%
2.	GGSSTP	3792.00	9700	46945.95	4267.04	(-)0.69%
3.	GHTP	3982.00	9500	53381.00	3842.00	(-)0.26%

2.7.5 Fuel cost being a major item of expense, the Commission thought it prudent to get the same validated. The calorific value of oil & coal, the price of oil & coal and transit loss of coal as per validation obtained by the Commission are indicated in Table 2.7(B). Further, the Commission had decided in the Tariff Order for FY 2014-15 to adopt the GCV of received coal as per CERC Tariff Regulations, 2014, for working out the fuel cost. The calorific value (GCV) as shown under column III of Table 2.7(B) is the calorific value of received coal. The finally accepted values are indicated in Table 2.7B.

Table 2.7 (B): Calorific Value and Price of Coal and Oil as per validation obtained by the Commission for FY 2014-15

Sr. No.	Station	Gross Calorific value of coal (kCal/kg)	Calorific Value of Oil (kCal/lt)	Price of Oil (₹/KL)	Price of coal excluding transit loss (₹/MT)	Transit loss
I	II	III	IV	V	VI	VII
1.	GNDTP	4186.96	9640.79	51216.77	3870.40	(-)0.20%
2.	GGSSTP	3997.91	9792.77	46939.25	4267.00	(-)0.66%
3.	GHTP	4087.05	9935.06	53171.31	3842.00	(-)0.26%

2.7.6 The Commission has now approved revised gross thermal generation of 11692 MU (1433 MU for GNDTP, 5751 MU for GGSSTP and 4508 MU for GHTP) as discussed in para 2.4.1, including 118 MU generated during trial run of Unit-IV of GNDTP. The submission of PSPCL regarding various performance parameter of Thermal Generating Stations have been discussed in the following paras. The fuel cost for different thermal generating stations corresponding to generation now approved has been worked out, based on the parameters adopted by the Commission in its Tariff Order of FY 2014-15.

A. Price and Gross Calorific Value of the Coal

As decided in para 6.7.3 of the Tariff Order for FY 2014-15 and para 3.8.4 of the Tariff Order for FY 2015-16,the Commission has adopted the GCV of received coal as per CERC Tariff Regulations, 2014, for working out the fuel cost. The calorific value (GCV) as shown under column III of Table 2.7(B) is the calorific value of received coal. Price and calorific value of coal have been adopted as per validation obtained by the Commission.

B. Station Heat Rate (SHR)

PSPCL has intimated in the ARR petition, the SHR for GNDTP as 2781.36kCal/kWh, for GGSSTP as 2681.64kCal/kWh and for GHTP as 2422.10kCal/kWh. PSPCL has submitted that PSPCL has achieved lower SHR for GHTP than approved by the Commission. However, SHR for GGSSTP and GNDTP is slightly more than the value approved by the Commission. PSPCL in its ARR has submitted excerpts from orders of Hon'ble APTEL in case of Appeal Nos. 42 & 43 of 2008, in the matter of Haryana Power Generation Company Limited v/s Haryana Electricity Regulatory Commission, Appeal Nos. 86 & 87 of 2007, in the matter of by Maharashtra State Power Generation Company Limited v/s Mahrashtra Electricity Regulatory Commission and Appeal No. 129 of 2006, in the matter of Gujarat State Electricity Company Limited v/s Gujarat Electricity Regulatory Commission. Further, PSPCL has prayed that the technical performance of its stations at relaxed levels be allowed, in view of the submissions made in the ARR.

The Commission observed that Regulation 20 of PSERC Tariff Regulations specifies that while determining the cost of generation of each thermal/gas/hydro-electric generating stations located within the State, the Commission shall be guided as far as feasible, by the principles and methodologies of CERC, as amended from time to time. Further, Regulation 37 of PSERC Tariff Regulations specifies that the components of generation tariff shall be as laid down in the CERC Tariff Regulations.

(i) For GNDTP, the Commission approved SHR of 2750 kCal/kWh for FY 2014-15 on the basis of CERC norms for Tanda TPS (after its R&M), as per CERC Tariff Regulations, 2014.

(ii) For GGSSTP and GHTP (Unit-I & II), the Commission approved SHR of 2450 kCal/kWh for FY 2014-15 on the basis of CERC norms as specified in Regulation 36(C)(a) of CERC Tariff Regulations, 2014.

(iii) For GHTP (Unit-III & IV), commissioned after 01.04.2009, the Commission approved SHR of 2428kCal/kWh for FY 2014-15 on the basis of CERC norms as specified in Regulation 36(C)(c) of CERC Tariff Regulations, 2014,

C. Price and calorific value of oil

Price and calorific value of oil have been adopted as per validation obtained by the Commission.

D. Specific oil consumption

PSPCL has submitted specific oil consumption at GNDTP, GGSSTP and GHTP as 2.18, 0.93 and 0.71 ml/kWh respectively for FY 2014-15. PSPCL has further submitted that the actual specific oil consumption for FY 2014-15 is more than that approved by the Commission due to regular backing down of generation. However, the Commission has adopted CERC norms for specific oil consumption as in the case of other performance parameters of thermal plants, as such, the Commission approves 0.5 ml/kWh specific oil consumption for GNDTP, GGSSTP and GHTP.

E. Transit Loss

PSPCL has submitted the actual transit loss in its ARR petition, as (-)0.20%, (-)0.69% and (-)0.26% for GNDTP, GGSSTP and GHTP respectively. PSPCL has further submitted that the coal transit losses are inconsistent for all three generating plants. PSPCL has further submitted that the coal transit losses are not within the control of PSPCL 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's risk and railways disown the responsibility. It is subject to pilferages at all halts, which is beyond the control of PSPCL.

d) During unloading, small quantities of coal get stuck at the edges of the transport wagons due to moisture and remain undelivered to the plant, contributing to transit losses.

As discussed in the Tariff Order for FY 2014-15, no transit loss is allowable for PANEM coal while arriving at fuel cost, as prices of PANEM coal according to the contract are on F.O.R. destination basis and in case of coal other than PANEM coal, transit loss at actual, subject to a maximum of 1.00% was allowed by the Commission. PSPCL filed Appeal No. 106 of 2013 with the Hon'ble APTEL on the various issues, including transit loss allowed by the Commission. The Hon'ble APTEL in its order dated 16.12.2015 has decided the issue against PSPCL. The abstract of the related part of the ibid order of the Hon'ble APTEL is reproduced as under:

"22. Our consideration and conclusion on issue No.(vi):

22.1 We have pondered over the rival contentions of the parties and the relevant part of the Impugned Order, including the reasons recorded in the Impugned Order, for restricting transit loss and we find no merit in the contentions of the appellant on this issue. It is true that the law laid down by this Appellate Tribunal is that the tariff order for each year has to decide the principles applicable for the said year and cannot decide the same in advance in the previous year. But the previous tariff order has not been challenged by the appellant before a higher forum. Hence, it is binding upon all the concerned parties so far as the issue of coal transit issue is concerned. ***The State Commission in its tariff order has given the following reasons for restricting the transit loss:***

i) The actual transit loss of coal in respect of all the three thermal generations of the appellant has considerably come down.

ii) CERC has fixed a norm of 0.8% for transit loss of coal in case of non pit head thermal generating stations in its Tariff Regulations for the period 2009-14.

iii) PSPCL has engaged an outside agency for the coal linkage

materialization and shortage minimization in respect of the coal for its thermal plants, the expenditure on which is being charged to the fuel cost of the respective generating stations.

22.2 The State Commission has allowed the transit loss of 2% for the Indian coal in respect of all the three thermal generating stations of the appellant during the year 2006-07 and continued to approve the same transit loss of 2% in its subsequent tariff orders. It was at the stage of tariff order for 2012-13 when the State Commission thought it necessary to reconsider the whole issue of transit loss of coal and then fixed the norm of transit loss of coal of all the generating stations of the appellant at actuals subject to a maximum of 1.5% for 2012-13 and 1% for 2013-14 and onwards. Thus we agree to the findings of the State Commission on this issue as we do not find any sufficient reasons to deviate there from. This issue No. (vii) is decided against the appellant."

The Commission in its Tariff Order for FY 2012-13, after considering the whole issue of transit loss, decided to cap the maximum transit loss of coal at 1.0% for FY 2013-14 & onwards.

In view of the above, the Commission approves the transit loss (for domestic coal) for all the thermal generating stations of PSPCL as per actual i.e. (-)0.20%, (-)0.66% and (-)0.26% for GNDTP, GGSSTP and GHTP respectively, for FY 2014-15. However, no such loss is permissible in case of PANEM coal, which is priced on FOR destination basis.

2.7.7 On the above basis, fuel cost for FY 2014-15 for different thermal generating stations corresponding to actual generation is given in Table 2.8.

Table 2.8: Approved Fuel Cost for FY 2014-15

Sr. No.	Item	Derivation	Unit	GNDTP	GGSSTP	GHTP Units I&II	GHTP Units III&IV	Total
I	II	III	IV	V	VI	VII	VIII	IX
1	Gross Generation	A	MU	1433	5751	2004	2504	11692
2	Station Heat Rate	B	kcal/kWh	2750	2450	2450	2428	
3	Specific oil consumption	C	ml/kWh	0.50	0.50	0.50	0.50	
4	Calorific value of oil	D	kcal/litre	9640.79	9792.77	9935.06	9935.06	
5	Calorific value of coal	E	kcal/kg	4186.96	3997.91	4087.05	4087.05	
6	Over all heat	F = (A x B)	Gcal	3940750	14089950	4909800	6079712	
7	Heat from oil	G=AxCxD /1000	Gcal	6908	28159	9955	12439	
8	Heat from coal	H = (F-G)	Gcal	3933842	14061791	4899845	6067273	
9	Oil consumption	I=(Gx1000)/D	KL	717	2875	1002	1252	
10	Transit loss of Coal	J	(%)	-0.20	-0.66	-0.26	-0.26	
11	Total coal consumption excluding transit loss	K=(H*1000)/E	MT	939546	3517286	1198871	1484512	
12	Qty. of PANEM Coal	L	MT	454518	1385011	662153	827361	
13	Qty. of coal other than PANEM Coal (excluding transit loss)	M=K-L	MT	485028	2132275	536718	657151	
14	Qty. of Coal other than PANEM Coal (including transit loss)	N=M/(1-J/100)	MT	484060	2118294	535326	655447	
15	Total quantity of coal	O=L+N	MT	938578	3503305	1197479	1482808	
16	Price of Oil	P	₹/KL	51216.77	46939.25	53171.31	53171.31	
17	Price of Coal	Q	₹/MT	3870.40	4267.00	3842.00	3842.00	
18	Total Cost of Oil	R=P x I / 107	₹ crore	3.67	13.50	5.33	6.66	29.16
19	Total Cost of Coal	S=O x Q/107	₹ crore	363.27	1494.86	460.07	569.69	2887.89
20	**Total Fuel Cost**	**T=R+S**	**₹ crore**	**366.94**	**1508.36**	**465.40**	**576.35**	**2917.05**
21.	**Per unit Cost (Gross)**	**U = T x 10 /A**	**₹ /kWh**	**2.56**	**2.62**	**2.32**	**2.30**	**2.49**
22.	**Per unit Cost (net)**	**V = T x 10 /(A-Auxiliary Cons.)**	**₹ /kWh**	**2.88**	**2.87**	**2.54**	**2.52**	**2.74**

* *Quantity of PANEM Coal where not given for different units of a plant has been considered on pro-rata basis of generation.*

The Commission, thus, approves the fuel cost at ₹2917.05 crore for gross generation of 11692 MU for FY 2014-15.

2.8 Power Purchase Cost

2.8.1 The Commission, in its Tariff Order for FY 2014-15, approved the power purchase cost of ₹8381.06crore, comprising of ₹8283.06 crore for purchase of 19809 MU (gross) and ₹98.00 crore to meet the shortfall in RPO compliance through purchase of RE power from outside the State of Punjab and new projects coming up in the State of Punjab or through purchase of RECs. In review, the Commission revised the power purchase cost to ₹10603.65 crore, comprising of ₹10519.65 crore for purchase of 27585 MU (gross), after adding the external transmission losses of

2.28% (26956 MU+ external losses of 629 MU) and ₹84.00 crore for purchase of power from RE sources/RECs.

2.8.2 The gross power purchase for FY 2014-15 now reported by PSPCL is 29604.03 MU (gross), including short term power purchase of 3405.07 MU and unscheduled interchange (UI) of 243.28 MU. The net power purchase after accounting for actual external losses (of 3.00%) is 28905.78 MU.

2.8.3 The actual cost of power purchase for FY 2014-15 as per ARR petition is ₹12384.25 crore, including ₹895.63 crore for intra-state transmission & SLDC charges, ULDC charges of ₹29.64 crore and ₹497.50 crore previous payments made during FY 2014-15.The Power Purchase Cost also includes PGCIL charges of ₹802.29 crore and payment of ₹0.23 crore made to Mercados. PSPCL has not shown any amount for purchase of RECs during FY 2014-15. PSPCL has submitted that the increase in power purchase cost is mainly due to additional power purchase of 1320.78 MU during FY 2014-15 and has requested the Commission to approve cost of power purchase of ₹11488.62 crore and transmission charges of ₹895.63 crore as per audited annual accounts for the year.

2.8.4 In the ARR for FY 2014-15, PSPCL had submitted that it has surplus energy available during FY 2014-15 from tied up sources from Central Generating Stations and other sources. The Commission while working out power purchase requirement for FY 2014-15 had observed that PSPCL has additional surplus power of 3118.12 MU and the Commission had provisionally approved sale of surplus power at an average variable rate of surrendered power i.e. 264 paise per unit, for power purchase balance purpose only. PSPCL had not submitted any requirement of short term power purchase for FY 2014-15 in the ARR for FY 2014-15.The Commission had also directed PSPCL to purchase power in a judicial and economic manner and also resort to Demand Side Management practices to maintain its commercial viability. Further, during FY 2014-15, PSPCL filed petition (No. 29 of 2014) for approval under section 86(1)(b) of the Electricity Act, 2003, for procurement plan on short term basis for FY 2014-15. The Commission in its order dated 29.04.2014 in the matter approved purchase of 3028.99 MU of short term power, subject to the condition that PSPCL should follow the procedure laid down in the Punjab State Electricity Regulatory Commission (Power Purchase and Procurement Process of Licensee) Regulations, 2012. In the ARR for FY 2015-16, PSPCL had submitted that it has 6236 MU of surplus energy available from tied up sources from central generating stations and the upcoming IPPs in the State of Punjab for the year 2014-15. However, the Commission had observed that there was availability of surplus power of 4573 MU.PSPCL, in the ARR petition, has shown power purchase of 3648.35 MU comprising of 3405.07 MU through traders (short term power) at a total cost of ₹1305.37 crore (which comes out 383.36 paise per unit) and 243.28 MU through UI at a total cost of ₹271.24 crore (which comes out 1114.93 paise per unit).

2.8.5 PSPCL vide its letter no. 1178 dated 23.12.2016, in reply to deficiencies pointed out by the Commission, has submitted that PSPCL has paid ₹92.47 crore as additional UI charges during FY 2014-15. PSPCL has further intimated that no interest has been paid on account of delayed payment of UI charges during FY 2014-15. However, the Commission decides not to allow additional UI charges leviable/ paid under Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) Regulations, 2014, for over-drawl of power, as the provision of the same has been made for the purpose of maintaining grid discipline.

2.8.6 PSPCL in the ARR petition, has shown ₹0.23 crore paid to Mercados (Consultant). However, the Commission observes that these expenses do not form part of the Power Purchase expenses and falls under A&G Expenses, dealt in para 2.13.

2.8.7 PSPCL has shown ₹6.17 crore paid as late payment surcharge. As the working capital as per Regulations was allowed to PSPCL, the Commission found no justification to allow the late payment surcharge for delayed payment of power purchase bills. Accordingly, the commission decide not to allow late payment surcharge of ₹6.17 crore.

2.8.8 The energy requirement as now approved by the Commission in the true-up for FY 2014-15 is 47254 MU. The input energy available to PSPCL for consumption in its area of distribution works out to 45702 MU after deducting energy sale to common pool consumers, energy sale outside the State and transmission losses. Accordingly, the RPO compliance for FY 2014-15 is as under:

Sr. No.	Description	FY 2014-15	
1.	Input Energy (MU)	45702	
		%	MU
2.	RPO specified i. Non-Solar ii. Solar iii. Total	 3.81 % 0.19 % 4.00 %	 1741.25 86.83 1828.08
3.	RE generation/purchase (RPO compliance) i. Non-Solar ii. Solar iii. Total	 2.35% 0.25% 2.60%	 1073.48 113.96 1187.44
4.	Previous year's RPO shortfall allowed to be carried forward to next year i. Non-Solar ii. Solar iii. Total		 50.67 36.59 87.26
5.	RPO compliance after accounting for carry forward of shortfall of previous year (3-4) i. Non-Solar ii. Solar iii. Total	 2.24 % 0.17 % 2.41 %	 1022.81 77.37 1100.18
6.	RE shortfall carried forward to next year now approved by the Commission (2-5) i. Non-Solar ii. Solar iii. Total	 1.57 % 0.02 % 1.59 %	 718.44 9.46 727.90

The Order of the Commission dated 28.07.2015 in petition no. 38 of 2015 filed by PSPCL allowing carried forward of the shortfall of 774.25 MU [772.57 MU (Non-Solar) and 1.68 MU (Solar)] of FY 2014-15 to FY 2015-16 stands reviewed as above. Consequently, the shortfall in RPO compliance of FY 2014-15 is trued up to 727.90 MU [718.44 MU (Non-Solar) and 9.46 MU (Solar)] as worked out above. As brought out in the foregoing paras, PSPCL has not requisitioned any funds for purchase of RECs in the true-up for FY 2014-15. Earlier an amount of ₹98.00 crore was approved by the Commission in the Tariff Order for FY 2014-15 and ₹84.00 crore in review of FY 2014-15 in the Tariff Order for FY 2015-16.

Further, the Commission in the review for FY 2014-15 carried out in the Tariff Order for FY 2015-16 disallowed ₹14.00 crore in lieu of non-availability of 90 MU renewable energy as four Micro-Hydel Plants of PSPCL were non-functional since long and another 18 (2x9) MW MHP Stage-II project delayed considerably. Accordingly, the said amount of ₹14.00 crore is deductible in the true-up for FY 2014-15.

The Commission directs that a separate fund shall be created by PSPCL and the said amount of ₹14.00 crore deposited in the same, to be utilized for procurement of power from renewable energy sources within the State, for RPO compliance.

2.8.9 PSPCL in the ARR petition, has shown ₹497.50 crore as previous year payments made during FY 2014-15. On query by the Commission, PSPCL vide its letter no. 1178 dated 23.12.2016 has submitted the details of ₹497.50 crore of previous payments made during FY 2014-15. As per the practice followed in the past, the prior period expenses are not chargeable under the head Power Purchase and falls under prior period expenses, dealt in para 2.17.

Accordingly, the Commission approves ₹10892.25 (11488.62 – 92.47 - 0.23 – 497.50 – 6.17) crore for net power purchase of 28905.78 MU (gross power purchase of 29604.03 MU) for FY 2014-15.

2.9 Disincentive on account of higher T&D losses

As discussed in para 2.6.2, PSPCL has under-achieved T&D loss level vis-a-vis the target approved by the Commission. As per PSERC Tariff Regulations, the entire loss on account of under-achievement of T&D losses vis-a-vis the target set by the Commission is to be borne by the licensee. As brought out in the afore-mentioned para, T&D loss level higher than that approved by the Commission has resulted in increase in power purchase to the extent of 784 MU (net), the pro-rata cost of which based on power purchase cost approved in para 2.8, works out to ₹295.43 crore (10892.25x784/28905.78).

The Commission, therefore, determines an amount of ₹295.43 crore as disincentive on account of higher T&D losses and disallows the same.

The effect of this is reflected at Sr. No. 13(c) of Table 2.15.

2.10 Incentive/disincentive on account of higher/lower availability of thermal generating stations

<u>For FY 2014-15</u>

2.10.1 PSPCL in its ARR petition has also claimed the generation incentive on the basis of Plant Availability Factor (PAF) of its thermal generating stations as per PSERC and CERC regulations.

2.10.2 PSPCL in the ARR Petition for MYT Control Period from FY 2017-18 to FY 2019-20, has submitted that the generating plants are operating as part of integrated grid and abide by the rules and regulations framed by CERC and PSERC, and to ensure the safety of the grid, PSPCL has to follow the instructions from Punjab State Load Dispatch Centre (PSLDC) to manage the frequency-load balance. In FY 2014-15, PSPCL suffered loss of generation because of backing down of its generation units on instructions received from PSLDC even though it was available for generation.

PSPCL has requested to consider the loss of generation due to backing down instructions of PSLDC for assessing the performance of generating plants. PSPCL has submitted the stations wise detail of loss of generation due to backing down instructions from SLDC, as under:

Sr. No.	Thermal Generating Station	Gross Generation approved in TO for FY 2014-15 (MU)	Actual Gross Generation as per the accounts for FY 2014-15 (MU)	Loss of Generation due to backing down instructions from SLDC (MU)	Total Gross Generation including loss of generation due to backing down (MU)
1.	GNDTP	3062	1433*	1785	3218
2.	GGSSTP	9808	5751	4433	10184
3.	GHTP	7221	4508	1078	5586
	Total	**20091**	**11692**	**7296**	**18988**

* including 118 MU during trial run of Unit IV of GNDTP.

The details of unit wise generation and Plant Availability Factor (PAF) in respect of GNDTP, GGSSTP and GHTP for FY 2014-15 have been given by PSPCL in the ARR MYT Control Period, as under:

Plant	Unit	Gross Generation (MU)	PAF (%)
GNDTP	Unit 1	402	87.37
	Unit 2	313	80.43
	Unit 3	570	93.34
	Unit 4	148	100
	Total	**1433**	**81.93**
GGSSTP	Unit 1	939	95.53
	Unit 2	919	86.35
	Unit 3	1014	88.47
	Unit 4	1197	97.05
	Unit 5	944	89.01
	Unit 6	738	96.60
	Total	**5751**	**92.50**
GHTP	Unit 1	1015	82.36
	Unit 2	989	94.88
	Unit 3	1372	91.78
	Unit 4	1132	99.01
	Total	**4508**	**92.30**

PSPCL has submitted that it has achieved higher plant availability than the normative target of 85% for GNDTP, GGSSTP and GHTP for FY 2014-15. Further, in case of GNDTP, the overall plant availability has been computed after taking into consideration the effective capacity of the plant, as Renovation & Modernisation of unit IV was planned for FY 2014-15, as per decision of the Hon'ble APTEL in its judgement dated 03.03.2009 in the matter of Appeal No. 96 of 2008, in case of UPRVUNL vs. UPERC & others.

2.10.3 In the ARR petition, PSPCL has submitted that as per Regulation 10 of the PSERC Tariff Regulations, 2005, any gain or loss, as the case may be, with respect to excess or under recovery of norms and targets shall be retained/ borne by the licensee itself. Further, Regulation 20 and Regulation 37 of the PSERC Tariff Regulations, 2005, state that while determining generation tariff and components of generation tariff, the Commission shall be guided by the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009, as amended from time to time. PSPCL has also submitted, in the ARR, the relevant extracts of Regulations 10, 20 and 37 of the PSERC Tariff Regulations, 2005.

PSPCL has further submitted that as per these regulations, for the determination of generation tariff, the Commission is guided by the norms and principles as laid down in the CERC Tariff Regulations, 2009. Regulation 21 of the CERC Tariff Regulations, 2009 states that the recovery of fixed charges, inclusive of incentive payable shall be based on the Normative Annual Plant Availability Factor (NAPAF) for each station, and as per Regulation 26(i)(a), NAPAF for all thermal generating stations shall be 85%. PSPCL has also submitted the relevant extract of Regulation 21 of CERC Tariff Regulations, 2009.

To lay emphasis, PSPCL has quoted relevant para of the Hon'ble APTEL Judgment dated 18.10.2012, in Appeal Nos. 7 of 2011, 46 of 2011 and 122 of 2011. PSPCL has further quoted relevant paras of the Hon'ble APTEL Judgment dated 11.09.2014 in Appeal No. 174 of 2012. PSPCL has submitted that in compliance to the Hon'ble APTEL judgment, the information of segregation of costs amongst various functions as per Audited Accounts of FY 2014-15, has been submitted along with the ARR.

2.10.4 The Commission notes that CERC has revised its Tariff Regulations and Regulation 30 (4) of CERC Tariff Regulations, 2014 specifies as under:

(4) Incentive to a generating station or unit thereof shall be payable at a flat rate of 50 paise/kWh for ex-bus scheduled energy corresponding to scheduled generation in excess of ex-bus energy corresponding to Normative Annual Plant Load Factor (NAPLF) as specified in regulation 36 (B).

2.10.5 It is evident from above that the incentive to a generating station or unit thereof shall be payable at a flat rate of 50 paise/kWh for ex-bus scheduled energy corresponding to scheduled generation in excess of ex-bus energy corresponding to Normative Annual Plant Load Factor (NAPLF), which is 85%. In the ARR petition, PSPCL has submitted PLF for GNDTP, GGSSTP and GHTP as 35.94%, 52.11% and 55.93% respectively. **As such, no incentive is payable for the PSPCL's Thermal Generating Stations as per the regulations.**

<u>For FY 2010-11 and FY 2011-12</u>

2.10.6 The Commission passed Tariff Order dated 16.07.2012 in Petition No.69 of 2011 whereby the Commission approved the ARR of Punjab State Power Corporation Limited (PSPCL) and determined the tariff for PSPCL for FY 2012-13 and reviewed the finances of PSPCL for FY 2011-12. PSPCL had filed Appeal No.174 of 2012 before Hon'ble APTEL against said Order. One of the issues taken in the appeal was 'Generation Norms and Target for Recovery of Fixed Charges and Incentive'. The Hon'ble APTEL decided the Appeal vide Judgment dated 11.09.2014. The Hon'ble APTEL decided the issue in the favour of the appellant and observed as under:

"The State Commission is not justified in applying the provisions of Tariff Regulations for generation target availability for recovery of fixed charges and incentive. The said approach of the State Commission while deciding issue no. (vi) is illegal and ill-founded. We have decided issue no. (vi) in favour of the appellant……"

The Hon'ble APTEL in its order directed the Commission to examine the issue afresh. The Commission initiated the suo-motu petition no. 55 of 2014 to comply the directions of the Hon'ble APTEL. The Commission decided petition vide its judgment dated 14.05.2015. The Commission in its order observed that PSPCL has failed to supply the function wise segregated costs, as such, the issue of incentive/disincentive for higher/lower availability of thermal generating stations for FY 2010-11 and FY 2011-12 was not considered by the Commission.

Now, PSPCL vide its letter nos. 775 dated 19.07.2016 and512 dated 26.05.2017 has supplied the function wise segregated costs for FY 2010-11 and FY 2011-12. Accordingly, the Commission decides to allow the incentive/disincentive for higher/lower availability of thermal generating stations for FY 2010-11 and FY 2011-12 as under:

<u>For FY 2010-11</u>

Sr. No.	Generating Station	Annual Fixed Cost for FY 2010-11 (₹ crore)	Actual Plant Availability (as intimated by PSPCL in the ARR for FY 2014-15) (%)	Normative Plant Availability (%)	Incentive (₹ crore)
I	**II**	**III**	**IV**	**V**	**VI=(III*IV/V)-III**
1.	GNDTP	263.79	58.58	85.00	-81.99
2.	GGSSTP	406.85	92.69	85.00	36.81
3.	GHTP	589.15	88.10	85.00	21.49
4.	**Total incentive payable for FY 2010-11**				**-23.69**
5.	Disincentive already calculated and approved by the Commission in para 2.10 of Tariff Order for FY 2014-15				182.02
6.	**Difference now payable**				**158.33**

For FY 2011-12

Sr. No.	Generating Station	Annual Fixed Cost for FY 2011-12 (₹ crore)	Actual Plant Availability (as intimated by PSPCL in the ARR for FY 2014-15) (%)	Normative Plant Availability (%)	Incentive (₹ crore)
I	**II**	**III**	**IV**	**V**	**VI=(III*IV/V)-III**
1.	GNDTP	291.76	59.93	85.00	-86.05
2.	GGSSTP	505.51	91.36	85.00	37.82
3.	GHTP	545.81	96.55	85.00	74.17
4.	**Total incentive payable for FY 2011-12**				**25.94**
5.	Disincentive already calculated and approved by the Commission in para 3.10 of Tariff Order for FY 2014-15				78.46
6.	**Difference now payable**				**104.40**

2.11 Employee Cost

2.11.1 In the ARR Petition for FY 2014-15, PSPCL had projected employee cost of ₹5350.89 crore (net of capitalization of ₹120.00 crore), against which the Commission approved a sum of ₹4286.13 crore in the Tariff Order for FY 2014-15.

2.11.2 In the ARR Petition for FY 2015-16, PSPCL had revised the claim of employee cost to ₹4423.44 crore (net of capitalization of ₹140.00 crore) for FY 2014-15. The Commission approved the revised employee cost of ₹4346.47 crore in the Review of FY 2014-15 in Tariff Order for FY 2015-16.

2.11.3 In this Petition, PSPCL has revised the claim of employee cost to ₹4076.47 crore, net of capitalization of ₹149.76 crore for FY 2014-15, based on Audited Annual Accounts of the PSPCL. The claim is also inclusive of ₹1607.83 crore on account of terminal benefits and ₹210.41 crore as BBMB share. In reply to deficiency letter of the Commission, PSPCL vide letter dated 23.12.2016 has clarified that ₹1607.83 (1470.44+137.39) crore are related to terminal benefits. As such, other employee cost works out to ₹2258.23 (4076.47-1607.83 -210.41) crore.

2.11.4 The provisions of Regulation 28(3) of PSERC (Terms and Conditions for Determination of Tariff) Regulations, 2005 provide for determination of employee cost as under:

- O&M expenses as approved by the Commission for the year 2011-12 (true-up) shall be considered as base O&M expenses for determination of O&M expenses for subsequent years.
- Terminal benefits including BBMB share on actual basis.
- Increase in ‘other employee cost’ limited to average increase in Wholesale Price

Index on base expenses of FY 2011-12.

- Exceptional increase in employee cost on account of pay revision etc. to be considered separately by the Commission.

As per above Regulations, terminal benefits and BBMB share of expenditure are to be allowed on actual basis.

In view of the above, terminal benefits amounting to ₹1607.83 crore and BBMB share of expenditure amounting to ₹210.41 crore are approved on actual basis as per Audited Annual Accounts of the Company for FY 2014-15.

2.11.5 In view of Hon'ble APTEL judgment dated 30.03.2015 in Review Petition No.6 of 2015, wherein the Hon'ble APTEL held that "*actual costs need to be considered*", the Commission vide its Order dated 14.10.2015 decided that "*the Judgments of Hon'ble APTEL, in so far as Employee Cost for FY 2012-13, 2013-14, 2014-15 etc. of PSPCL and PSTCL is concerned, shall be implemented during true-up exercise of ARRs for these years after applying prudence check*". As such, the Commission approves 'other employee cost' of ₹2258.22 crore based on Audited Annual Accounts.

The Commission, therefore, approves a total employee cost of ₹4076.47 (1607.83+2258.23+210.41) crore to PSPCL for FY 2014-15 based on Audited Annual Accounts.

2.12 Repair & Maintenance (R&M) Expenses

2.12.1 In the ARR Petition for FY 2014-15, the PSPCL had projected R&M expenses at ₹442.65 crore, against which the Commission approved ₹412.17 crore.

2.12.2 In the ARR Petition for FY 2015-16, PSPCL had revised R&M expenses to ₹584.75 crore, against which the Commission approved revised R&M expenses of ₹417.16crore as for FY 2014-15.

2.12.3 In this Petition, PSPCL has determined R&M expenses of ₹566.54 crore on normative bases and claimed ₹408.44 crore on actual basis. These have been determined after adding ₹23.01 crore as cost of water, lubricants, consumable stores & station supplies to the actual R&M expenses of ₹385.43 crore (net of capitalization of ₹1.51 crore).

However, the cost of water, lubricants, consumable stores & station supplies is ₹43.01 crore (Para2.7.2 of this Tariff Order) instead of ₹23.01 crore. Accordingly, actual R&M expenses works out to ₹428.44 (₹385.43 + ₹43.01) crore.

2.12.4 Regulation 28of the PSERC Tariff Regulations, 2005 amended on 17.09.2012 provides for adjusting base O&M expenses approved by the Commission for FY 2011-12 in proportion to increase in Whole Sale Price Index (all Commodities) to determine O&M expenses for subsequent year. Wholesale Price Index (all commodities) of 100 for FY 2011-12 has increased to 113.90 for FY 2014-15, thereby accounting for 13.90% increase in WPI. The Commission in Tariff Order 2014-15 approved ₹320.67 crore for FY 2011-12 on Gross Fixed Assets of ₹39215.89 crore as on 01.04.2012. The Gross Fixed Assets as on 01.04.2014 are to the tune of ₹42561.08 crore. Therefore, base R&M expenses for FY 2014-15 work out to ₹348.02 (320.67/39215.89*42561.08) crore. By applying WPI increase @13.90% on the base R&M expenses of ₹348.02 crore, the R&M expenses work out to ₹396.40 (₹348.02*113.90/100) crore for FY 2014-15.

2.12.5 In the Audited Annual Accounts for FY 2014-15, PSPCL has disclosed capitalization of assets worth ₹1881.03 crore during FY 2014-15. Since details regarding commissioning/ capitalization of the assets added during FY 2014-15 are not available in the accounts as well as the ARRs of the utility, R&M expenses for these assets are being considered assuming that these assets remained in service for six months on an average during FY 2014-15. Average percentage rate of R&M expenses of ₹396.40 crore for assets of ₹42561.08 crore as on 01.04.2014 works out to 0.93% (396.40/42561.08*100) for PSPCL. By applying the average rate of 0.93% on addition of assets of ₹1881.03 crore for half year, the R&M expenses for the fixed assets added during the year work out to ₹8.75 crore. Thus, allowable R&M expenses for FY 2014-15 for PSPCL work out to ₹405.15 (396.40+8.75) crore against actual R&M expenses of ₹428.44 crore.

The Commission, therefore, approves R&M expenses of ₹405.15 crore for FY 2014-15 to PSPCL for Generation and Distribution Business.

2.13 Administrative and General (A&G) Expenses

2.13.1 In the ARR Petition for FY 2014-15, PSPCL had projected A&G expenses at ₹172.87 crore, against which the Commission approved ₹135.73 crore in the Tariff Order for FY 2014-15.

2.13.2 In the ARR Petition for FY 2015-16, PSPCL had revised the A&G expenses for FY 2014-15 to ₹167.12 crore, against which the Commission approved revised A&G expenses of ₹137.65 crore for FY 2014-15 in the Tariff Order for FY 2015-16.

2.13.3 In this Petition, PSPCL has determined A&G expenses on normative basis amounting to ₹162.80 crore and has claimed ₹159.94 crore (net of capitalization cost of ₹23.90 crore) as actual A&G expenses (based on Audited Annual Accounts for FY

2014-15). A&G expenses of ₹159.94 crore include annual license fee of ₹11.32 crore and audit fees of ₹0.34 crore. In addition to above, ₹0.23 crore paid to M/s Mercadoz, shown under power purchase cost, are also to be considered in A&G expenses. Thus, the total amount works out to ₹160.17 crore.

2.13.4 In the Petition, PSPCL has submitted that donation amounting to ₹5.00 crore is made to Cancer and Drug Addiction Treatment & Infrastructure Fund and ₹5.00 crore to Director/ Cultural Affairs, Punjab as an initiative towards corporate and social responsibility. As the Commission is allowing A&G expenses as per PSERC (Terms and Conditions for determination of Tariff) Regulations, 2005, so the aforesaid contributions of ₹10.00 crore claimed by PSPCL should be met out of profit, if any earned by PSPCL during FY 2014-15 and not passed on to the consumers. Accordingly, actual A&G expenses work out to ₹150.17 (160.17-10.00) crore.

2.13.5 The Commission in Tariff Order 2014-15 approved A&G Expenses of₹97.12 crore for FY 2011-12 on Gross Fixed Assets of ₹39215.89 crore as on 01.04.2012. The Gross Fixed Assets as on 01.04.2014 are to the tune of ₹42561.08 crore. Therefore, base A&G expenses for FY 2014-15 work out to ₹105.40 (97.12/39215.89*42561.08) crore. As mentioned in Para 2.12.4, there was WPI increase of 13.90% for FY 2014-15. By applying WPI increase @13.90% on the base A&G expenses of ₹105.40 crore, the A&G expenses works out to ₹120.05 (105.40*113.90/100) crore for FY 2014-15.

2.13.6 Average percentage rate of A&G expenses of ₹120.05 crore for assets of ₹42561.08 crore as on 01.04.2014 works out to 0.28% (120.05/42561.08*100) for PSPCL. By applying the average rate of 0.28% on addition of assets of ₹1881.03 crore for half year, the base A&G expenses for the fixed assets added during the year work out to ₹2.65 crore. Thus, A&G expenses for FY 2014-15 for PSPCL work out to ₹122.70 (120.05+2.65) crore. After adding ₹11.32 crore on account of License Fee & ARR fee and ₹0.34 crore on account of Audit fee, the allowable A&G expenses work out to ₹134.36 (122.70+11.32+0.34) crore against A&G expenses of ₹150.17 crore.

The Commission approves A&G expenses of ₹134.36 crore for FY 2014-15 for PSPCL's Generation and Distribution Business as per Audited Annual Accounts.

Thus, O&M expenses of ₹4615.98 (4076.47+405.15+134.36) crore are approved to PSPCL for FY 2014-15.

2.14 Depreciation Charges

2.14.1 In the ARR Petition for FY 2014-15, PSPCL projected depreciation charges of ₹863.36 crore against which the Commission approved depreciation charges of ₹764.42 crore.

2.14.2 In the ARR Petition of FY 2015-16, PSPCL had revised its claim for depreciation charges to ₹954.93 crore against which the Commission approved revised depreciation charges of ₹708.76 crore for FY 2014-15.

2.14.3 The Gross Fixed Assets as on 01.04.2014 are to the tune of ₹23634.66 crore (net of land and land rights). There is an addition of ₹1879.53 crore (net of land and land rights) to Gross Fixed Assets due to capitalization of assets during FY 2014-15. Thus, closing balance of Fixed Assets as on 31.03.2015 is ₹25514.19 (net of land and land rights) crore.

The Commission approves the depreciation charges of ₹931.41 crore for FY 2014-15 based on audited financial statements.

2.15 Interest and Finance Charges

2.15.1 In the ARR Petition for FY 2014-15, PSPCL claimed Interest and Finance Charges of ₹2763.30 crore, against which the Commission approved an amount of ₹2236.78 crore for FY 2014-15.

2.15.2 In the ARR Petition for FY 2015-16, PSPCL revised the Interest and Finance Charges for FY 2014-15 to ₹2471.57 crore against which the Commission approved the revised Interest and Finance Charges of ₹1717.97 crore for PSPCL for FY 2014-15.

2.15.3 In this Petition, PSPCL has claimed the Interest and Finance Charges of ₹2423.83 crore for FY 2014-15, based on Audited Annual Accounts, as detailed in Table 2.9.

Table 2.9: Interest & Finance Charges claimed by PSPCL for FY 2014-15

(₹crore)

Sr. No.	Description	Interest and Finance as depicted in ARR Petition
I	**II**	**III**
1.	Interest on Institutional Loans	978.18
2.	Interest on RBI Bonds / GoP Loans	10.51
3.	Interest on GPF	172.39
	Sub-Total	**1161.08**
4.	Guarantee fees	41.88
5.	Interest on Consumers Security Deposit	170.19
6.	Other Bank Interest/Charges	3.97
7.	Total	1377.12
8.	Interest on Working Capital Loan (WCL)	1423.88
9.	Total	2801.00
10.	Less: Capitalization	377.17
11.	**Net Interest and Finance Charges**	**2423.83**

The Interest and Finance Charges allowable to PSPCL are discussed in the ensuing paragraphs.

2.15.4 **Investment Plan / Interest and Finance Charges**

The Commission in its Tariff Order FY 2014-15 approved the Investment Plan of ₹2000.00 crore against projected capital expenditure of ₹4107.62 crore. In the ARR Petition for FY 2015-16, the Commission approved the revised capital investment of ₹2000.00 crore for FY 2014-15 against ₹2505.56 crore proposed by the utility for FY 2014-15.

As per Audited Annual Accounts for FY 2014-15, the opening Capital Work in Progress as on 01.04.2014 is ₹2056.53 crore. Net asset addition during FY 2014-15 is of ₹1881.03 crore. Closing balance of Capital Work in Progress as on 31.03.2015 is of ₹1701.64 crore.

The opening balance of long term loan as per Petition is ₹10198.15 crore, which includes loan of ₹92.73 crore on account of RBI Bonds and ₹2087.72 crore on account of GPF liability. PSPCL has claimed loan addition of ₹1792.20 crore during the year 2014-15 which includes ₹10.51 crore on account of RBI Bonds. Loans relating to RBI Bonds and GPF Liability are considered separately in ensuing paragraphs. Accordingly, opening balance of loan, loan addition, repayment, closing balance of loan and interest thereon excluding loan related to RBI Bonds, GPF loan for FY 2014-15 is worked out as per PSPCL petition as under:

Table 2.10: Long Term loan requirement of PSPCL (Except RBI Bonds and GPF Liability) for FY 2014-15

(₹crore)

Particulars	Long term Loan claimed by PSPCL	Amount of loan related to RBI Bonds	Amount Related to GPF liability	Long term loan excluding RBI Bonds & GPF liability
Opening balance as on 1.04.2014	10198.15	92.73	2087.72	8017.70
Loan addition during 2014-15	1792.20	10.51	-	1781.69
Loan re-payment during 2014-15	1305.76	87.00	84.82	1133.94
Closing balance as on 31.03.2015	10684.59	16.24	2002.90	8665.45
Interest on loans for FY 2014-15	1161.08	10.51	172.39	978.18

Loan addition of ₹1781.69 crore includes loan of ₹4.29 crore relating to R-APDRP (Part-A) Schemes, which is to be converted into Grants once the required conditions are achieved and verified by an independent agency appointed by the Ministry of Power. The Commission observes that no interest is being paid by PSPCL while interest liability is being provisioned in the books of PSPCL. The Commission, therefore, decides to disallow this loan amount of ₹4.29 crore and approves loan requirement amounting to ₹1777.40 (1781.69-4.29) crore for the purpose of determination of tariff. The Commission during the true up of FY 2013-14 (in Table 3.12) had approved closing balance of ₹7623.86 crore as loans as on 31.03.2014 (other than WCL, GP Fund and GoP loan). Considering the opening balance of ₹7623.86 crore for FY 2014-15, the interest on loans (other than WCL, GP Fund, APDRP-A scheme and GoP) works out to ₹931.74 crore in Table 2.11

Table 2.11: Interest on Loans for FY 2014-15

(₹crore)

Sr. No.	Particulars	Loans as on April 01,2014	Receipt of Loans during FY 2014-15	Repayment of Loans during FY 2014-15	Loans as on March 31,2015	Amount of Interest
I	II	III	IV	V	VI	VII
1.	As per data furnished in ARR Petition (other than WCL and GoP Loans)	8017.70	1781.69	1133.94	8665.45	978.18
2.	Approved by the Commission (other than WCL, GP Fund, GoP Loans and R- APDRP-A Scheme)	7623.86	1777.40	1133.94	8267.32	931.74

2.15.5 **Interest on GoP Loans / RBI Bonds**

In MYT Petition from FY 2017-18 to FY 2019-20, PSPCL has claimed ₹10.51 crore as interest on account of GoP loans for FY 2014-15. **The Commission, approves interest charges towards RBI Bonds of ₹10.51 crore for FY 2014-15.**

2.15.6 **Interest on General Provident Fund (GPF)**

PSPCL has claimed interest of ₹172.39 crore (at 8.70%) on GPF accumulations based on Audited Annual Accounts for FY 2014-15.

The C&AG in the audit report of FY 2014-15 had pointed out that Other Long Term Liabilities includes GPF liability of ₹9.79 crore due towards employees of electricity wing of Municipal Corporation Amritsar absorbed in erstwhile Board / Company in April, 1995, against the actual liability of ₹1.72 crore for remaining nine employees. This has resulted in overstatement of other long-term liabilities and understatement of profit by ₹8.07 crore. In reply to deficiency letter of the Commission, PSPCL vide letter No.1179/CC/DTR/Dy.CAO/245/Vol.I- Deficiency dated 27.12.2016submitted that "*…. Hon'ble High Court has directed Chief Secretary, Government of Punjab to finalize the issue. As per directions of the Hon'ble High Court, the Chief Secretary to Government of Punjab has issued the order by authorizing Secretary to Government of Punjab, Department of Power to assess the value of land and intimate the same to Secretary to Government of Punjab, Department of Local Government and MC, Amritsar after making adjustment for recoveries of each other. As and when the decision of Secy. / Power is received, necessary adjustment will be carried out accordingly".*

Interest on GP Fund, being a statutory payment, is to be allowed as claimed by PSPCL. However, in light of the above findings of CAG and PSPCL's response on the same, the revised claim comes to ₹171.69 [172.39-(8.07*8.70%)] crore. **The Commission, approves interest charges towards GPF Liability of ₹171.69 crore for FY 2014-15.**

2.15.7 **Finance Charges**

PSPCL has claimed finance charge of ₹45.84 crore which includes guarantee fees based on Audited Annual Accounts for FY 2014-15. **Accordingly, the Commission approves the finance charges of ₹45.84 crore based on Audited Annual Accounts for FY 2014-15.**

2.15.8 **Interest on Consumer Security Deposits**

In MYT Petition from FY 2017-18 to FY 2019-20, PSPCL has claimed ₹170.19 crore towards interest on consumer security deposits on the basis of Audited Annual Accounts for FY 2014-15.

The Commission allows the interest of ₹170.19 crore on Consumer Security Deposits based on Audited Annual Accounts for FY 2014-15.

2.15.9 **Capitalization of Interest Charges**

In MYT Petition from FY 2017-18 to FY 2019-20, PSPCL has claimed ₹377.17 crore towards capitalization of interest charges based on Audited Annual Accounts for FY 2014-15. **The Commission, as per past practice, approves capitalization of interest of ₹377.17 crore for FY 2014-15 based on Audited Annual Accounts.**

2.15.10 **Interest on Working Capital**

In the Tariff Order for FY 2014-15, the Commission approved working capital of ₹3109.09 crore with interest cost of ₹349.46 crore. In the Tariff Order for FY 2015-16, the Commission approved interest of ₹391.67 crore on working capital of ₹3344.76 crore.

In this Petition, PSPCL has claimed ₹1423.88 crore as interest on working capital borrowings for FY 2014-15, based on audited financials. The Commission has determined the working capital requirement in accordance with Regulation 30 of PSERC Tariff Regulations. The details of working capital requirement and allowable interest thereon are depicted in Table 2.12.

Table 2.12: Interest on Working Capital Requirement for FY 2014-15

(₹crore)

Sr. No	Particulars	Amount
I	**II**	**III**
1	Fuel Cost for two months	486.18
2	Operation and Maintenance expenses for one month	384.66
3	Receivables for two months	3770.41
4	Maintenance Spares @15% of O&M expenses	692.40
5	Less: Consumer security deposit	2539.96
6	Working capital required	2793.69
7	Interest rate (calculated on weighted average)	11.30%
8	**Interest on Working Capital Loan**	**315.69**

The Commission, accordingly, approves interest of ₹315.69 crore on Working Capital Requirements for FY 2014-15.

In view of above, the interest and finance charges are approved as shown in Table 2.13.

Table 2.13: Interest and Finance Charges for FY 2014-15

(₹crore)

Sr. No.	Particulars	Loans as on April 01, 2014	Receipt of Loans during FY 2014-15	Re-payment of Loans during FY 2014-15	Loans as on March 31, 2015	Interest Approved by Commission
I	II	III	IV	V	VI	VII
1.	Approved by the Commission (Other than WCL and GoP Loans	7623.86	1777.40	1133.94	8267.32	931.74
2.	GoP Loans / RBI Bonds	92.73	10.51	87.00	16.24	10.51
3.	Interest on GPF	2087.72	-	84.82	2002.90	171.69
4.	Finance Charges	-	-	-	-	45.84
5.	Interest on Consumer Security Deposits	2319.93	220.03	-	2539.96	170.19
6.	**Gross Interest and Finance Charges**	**-**	**-**	**-**	**-**	**1329.97**
7.	Less: Capitalization	-	-	-	-	-377.17
8.	Net Interest and Finance Charges (6-7)	-	-	-	-	952.80
9.	Interest on Working Capital	-	-	-	-	315.69
10.	**Total Interest**	**12124.24**	**2007.94**	**1305.76**	**12826.42**	**1268.49**

The Commission, accordingly, approves the interest and finance charges of ₹1268.49 crore for PSPCL for FY 2014-15.

2.16 Return on Equity

2.16.1 In the ARR and Tariff Petition for FY 2014-15, PSPCL claimed the Return on Equity (RoE) of ₹942.62 crore on base equity of ₹6081.43 crore against which the Commission had approved RoE of ₹942.62 crore to PSPCL.

2.16.2 In the ARR and Tariff Petition for FY 2015-16, PSPCL had claimed ₹942.62 crore as RoE for FY 2014-15, against which the Commission approved RoE of ₹942.62 crore.

2.16.3 In this Petition, PSPCL has claimed RoE of ₹942.62 crore @ 15.5% on Govt. equity holding of ₹6081.43 crore.

2.16.4 In accordance with the PSERC Tariff Regulations, the Commission allows RoE of ₹942.62 crore @15.5% on the equity of ₹6081.43 crore.

The Commission, thus, approves RoE of ₹942.62 crore to PSPCL for FY 2014-15.

2.17 Subsidy payable by GoP

As per Audited Annual Accounts for FY 2014-15, total subsidy of ₹5874.94 crore has been booked in its Accounts by the PSPCL. However, GoP paid subsidy of ₹4642.00 crore during FY 2014-15 to PSPCL. The subsidy payable by GoP is trued up as under:

AP Consumption: The Commission has considered AP consumption at 9630 MU, on which revenue @456 paise per unit works out to ₹4391.28 crore. The amount of revenue from AP consumption after adding expenses of ₹37.44 crore on account of fuel cost adjustment for FY 2014-15 is worked out as ₹4428.72 crore.

Scheduled Caste (SC) Domestic Supply (DS) Consumers: The Commission notes that GoP decided to give free supply of power upto 200 units to Scheduled Caste DS consumers with a connected load up to 1000 watts. PSPCL has claimed subsidy of ₹878.41 crore inclusive of meter rentals of ₹13.89 crore.

Non-SC Below Poverty Line (BPL) DS Consumers: GoP also decided to give free supply of power up to 200 units per month to Non-SC BPL DS consumers with connected load up to 1000 watts. PSPCL has claimed subsidy of ₹80.98 crore, inclusive of meter rentals of ₹1.64 crore.

Interest on delayed payment of subsidy: The GoP has paid subsidy to PSPCL in FY 2014-15 in staggered instalments. The Commission observed that there was delay in payment of subsidy to PSPCL in FY 2014-15. With a view to compensating PSPCL on this account, the Commission levies interest on the delayed payment of subsidy @11.30% (effective rate of interest on loans) which works out to ₹84.86 crore.

Accordingly, the subsidy payable for FY 2014-15, inclusive of interest on delayed payment of subsidy, has been determined by the Commission at ₹5472.97 (4428.72+878.41+80.98+84.86) crore against which GoP had paid subsidy of ₹4642.00 crore. As such, there is shortfall of ₹830.97 (5472.97-4642.00) crore during FY 2014-15. This has been carried forward to para 9.4

2.18 Prior Period Expenses

2.18.1 In the MYT Petition for the Control Period from FY 2017-18 to FY 2019-20, PSPCL has disclosed net prior period income of ₹102.67 crore, which includes prior period income of ₹125.38 crore and prior period expenses of ₹22.71 crore.

In the details of prior period income, ₹13.72 crore is on account of “excess provision for depreciation”. Similarly, in the details of prior period expense, PSPCL claimed ₹17.16 crore is on account of “depreciation unprovided in previous years”. These prior period income/expense items related to depreciation are not considered as the depreciation charges have been separately calculated/re-determined by the Commission. Accordingly, net prior period income and expense works out to ₹111.66 (125.38-13.72) crore and ₹5.55 (22.71-17.16) crore respectively.

Under the head of Power Purchase Cost, PSPCL has claimed ₹497.50 crore relating to previous payments made during FY 2014-15. On a query from the Commission, PSPCL has intimated the details of expenses vide letter no. 1178 dated 23.12.2016. As per details provided by PSPCL, the amount relates to adjustment of prior period power purchase bills, the Commission allows ₹497.50 crore as prior period expenses under this head.

As such, the Commission determines the net prior period expenses after adjustment of prior period income as ₹391.39 (497.50-111.66+5.55) crore Accordingly, the Commission approves Net Prior Period expenses of ₹391.39 crore for FY 2014-15.

2.19 Other Debits and extraordinary items

The Audited Annual Accounts of the PSPCL for FY 2014-15 show 'other debits' at ₹47.92 crore. **Therefore, the Commission allows other debits and extraordinary items of ₹47.92 crore for FY 2014-15 on this account.**

2.20 Transmission Charges payable to PSTCL

The Commission in its Tariff Order of PSTCL for FY 2014-15 determined ₹895.66 crore as the Transmission charges payable to PSTCL by PSPCL. As per Audited Annual Accounts for FY 2014-15, PSPCL has paid ₹1084.19 crore as Transmission Charges.

The Commission in its Tariff Order for MYT Control Period from FY 2017-18 to FY 2019-20of PSTCL, determined transmission charges of ₹1084.18crore for FY 2014-15.Further, the Commission while disposing I.A. in Review Petition No. 4 of 2016 in Petition No. 78 of 2015 vide order dated 21.11.2016 had determined ₹394.39 crore relating to true up for FY 2010-11 and FY 2011-12, which is to be allowed at the time of true up for FY 2014-15. The relevant extract is reproduced below:

"….Apropos to the claim of PSPCL that difference of Rs.394.39 crore on account of excess payment by PSPCL are recoverable from PSTCL, the commission observes that out of this difference, Rs.276.82 crore relates to true up for FY 2010-11 (Rs.136.48 crore) & for FY 2011-12 (Rs.140.34 crore) which has been allowed at the time of projection of FY 2014-15 and same will be allowed at the time of True-up of PSPCL for FY 2014-15."

Accordingly, the Commission allows transmission charges of ₹1360.98 (1084.16+276.82) crore for FY 2014-15.

2.21 Non-Tariff Income

2.21.1 In the ARR and Tariff Petition for FY 2014-15, PSPCL projected Non-Tariff income of ₹818.56 crore against which the Commission had approved ₹589.79 crore. In the ARR Petition for FY 2015-16, PSPCL revised the non-tariff income to ₹964.91 crore for FY 2014-15 against which the Commission had approved ₹888.21 crore for FY 2014-15 in the Tariff Order for FY 2015-16.

2.21.2 In this Petition, PSPCL has submitted Non-Tariff Income of ₹1067.69 crore based on Audited Annual Accounts for FY 2014-15. This excludes an amount of ₹225.35 crore on account of late payment surcharge and ₹132.21 crore on account of rebate for timely payment for power purchase.

Table 2.13 (A): Non- Tariff Income for FY 2014-15

(₹crore)

Sr. No.	Particulars	Projected by PSPCL
1.	Meter/service rent	88.66
2.	Late Payment Surcharge	225.35
3.	Theft & pilferage of energy	59.38
4.	Misc. Receipts	747.05
5.	Misc. Charges (expect PLEC)	24.66
6.	Wheeling charges	140.99
7.	Interest on staff loans & advance	92.52
8.	Income from trading	15.74
9.	Income staff welfare activities	0.06
10.	Excess on verification	-
11.	Investments & bank balances	25.88
12.	Gain on sale of asset	-
13.	Total income	1420.29
14.	BBMB income	4.96
15.	**Total non-tariff income**	**1425.25**
16.	**Less: late payment surcharge**	**225.35**
17.	**Less: Rebate for timely payment of Power Purchase**	**132.21**
18.	**Net Non- Tariff Income**	**1067.69**

In the Petition, PSPCL has prayed that the late payment surcharge be not treated as part of the Non-Tariff Income as PSPCL's working capital requirements are being determined as per norms and there is no compensation to the PSPCL on account of interest accrued on delayed payments against bills issued and including the Late Payment Surcharge in Non-Tariff/ Other Income adversely impacts the cash flow position of the PSPCL. The Commission observes that receipts on account of Late Payment Surcharge are to be treated as Non-Tariff Income as per Regulation 34 of PSERC (Terms and Conditions for Determination of Tariff) Regulations, 2005.

Moreover, interest on working capital is allowed to the utility on normative basis notwithstanding that the licensee has not taken working capital loan from any outside agency or has exceeded the working capital loan amount worked out on normative basis. So the plea of the utility not to treat the late payment surcharge as part of the Non-Tariff Income finds no merit.

As such, the Non-Tariff Income works out to ₹1425.25 (1067.69 + 225.35 + 132.21) crore.

The Commission accordingly, approves Non-Tariff Income of ₹1425.25 crore for FY 2014-15.

2.22 Charges payable to GoP on account of Power from Ranjit Sagar Dam (RSD)

In the ARR petition of FY 2014-15, PSPCL had projected royalty charges at ₹14.13 crore, which were approved by the Commission. In the ARR for FY 2015-16, PSPCL revised the charges for FY 2014-15 to ₹20.00 crore, which were again approved by the Commission.

In this Petition,PSPCL has claimed ₹20.00 crore as charges payable to GoP on power from RSD.

The Commission approves ₹20.00 crore on this account as claimed by PSPCL.

2.23 Revenue from sale of power

2.23.1 The Commission approved the Revenue from existing tariff at ₹22043.76 crore for FY 2014-15 in the Tariff Order for FY 2014-15. In the review of FY 2014-15, the revenue from sale of power was approved at ₹23615.28 crore vide Tariff Order for FY 2015-16.

In this Petition, PSPCL has submitted revenue from sale of power at ₹22303.82 crore being actual as per accounts.

The Commission, approves the revenue from sale of power as ₹21816.97 crore for FY 2014-15 as detailed in Table 2.14.

Table 2.14: Revenue from Sale of Power for FY 2014-15

(₹crore)

Sr. No.	Description	Actual as per Audited Annual Accounts		As approved by the Commission	
		Energy Sale (MU)	Revenue (₹crore)	Energy Sale (MU)	Revenue including MMC and FCA (₹crore)
I	II	III	IV	V	VII
1.	Domestic including others	11483.25	5860.49	11483.25	5860.49
2.	Non-Residential Supply	3265.89	2000.83	3265.89	2000.83
3.	Public Lighting	183.29	120.41	183.29	120.41
4.	Industrial Consumers	-	-	-	-
a)	Small Power	914.53	518.81	914.53	518.81
b)	Medium Supply	2008.43	1206.98	2008.43	1206.98
c)	Large Supply	11097.17	7194.51	11097.17	7194.51
5.	Bulk Supply & HT & LT	639.37	385.90	639.37	385.90
6.	Railway Traction	152.48	87.80	152.48	87.80
7.	Common Pool	306.48	104.39	306.48	104.39
8.	Outside State	157.08	15.35	73.00	15.35
9.	Agriculture Supply (AP)	10658.41	4915.58	9630.00	4428.72
10.	Add: Recovery for theft of power/Malpractices, PLEC and Misc. charges*	-	624.69	-	624.69
11.	Impact of HV rebate, ToD rebate/surcharge, rebate due to increase metered sale	-	-731.91	-	-731.91
12.	**Grand Total**	**40866.16**	**22303.82**	**39753.89**	**21816.97**

* Includes MMC

2.24 True up of ARR for FY 2014-15

In view of the above analysis, the trued-up revenue requirement for FY 2014-15 is as per details given in Table 2.15.

Table 2.15: Revenue Requirement for FY 2014-15

(₹crore)

Sr. No.	Item of Expense	Approved in the Tariff Order for FY 2014-15	Proposed by PSPCL in RE	Approved by the Commission in Review	PSPCL claim based on Audited Annual Accounts	Finally approved by the Commission
I	**II**	**III**	**IV**	**V**	**VI**	**VII**
1	Cost of Fuel	4795.12	4404.51	3513.20	3203.75	2917.05
2	Cost of Power Purchase	8381.06	10379.52	10603.65	11488.62	10892.25
3	Employee Cost	4286.13	4423.44	4346.47	4076.46	4076.47
4	R & M Expenses	412.17	584.75	417.16	408.44	405.15
5	A & G Expenses	135.73	167.72	137.65	159.94	134.36
6	Depreciation	764.42	954.93	708.76	931.41	931.41
7	Interest & Finance Charges	2236.78	2471.57	1717.97	2423.83	1268.49
8	Return on Equity	942.62	942.62	942.62	942.62	942.62
9	Provision for DSM Fund	40.76	5.00	5.00	---	---
10	Transmission and SLDC Charges payable to PSTCL	895.66	895.66	895.66	895.66	1360.98
11	RSD Charges payable to GoP	14.13	20.00	20.00	20.00	20.00
12	Net Prior Period Income/Expenses			279.31	(-) 102.67	391.39
13	Other Debits and Extra Ordinary Items				47.92	47.92
14(a)	Disincentive on account of higher T&D losses					(-)295.43
14(b)	Incentive/disincentive on account of higher/lower availability of Thermal Generating Station					262.73
14(c)	Capitalisation of Cost of Generation during Trial Run				9.83	
15	**Total Revenue Requirement**	**22904.58**	**25249.42**	**23587.45**	**24505.81**	**23355.39**
16	Less: Non-Tariff Income	589.79	964.91	888.21	1425.25	1425.25
17	**Net Revenue Requirement**	**22314.79**	**24284.50**	**22699.24**	**23080.56**	**21930.14**
18	Revenue from Existing Tariff	22043.76	22558.97	23615.28	22303.82	21816.97
19	Less: Impact of Rebate to consumers catered at higher voltages/ ToD Tariff/ ToD rebate of adjusting PLEC/ Rebate due to increased metered sales/ Rebate of 7.5% in view of APTEL judgement	208.27	675.88	709.73	—*	—*
20	**Net revenue from Existing Tariff**	**21835.49**	**23234.85**	**22,905.55**	**22303.82**	**21816.97**
21	Gap {(Surplus) (+)/Deficit (-)} for FY 2014-15	(-) 479.30	(-) 1049.66	(+) 231.31	(-) 776.71	(-) 113.17
22	Gap {Surplus(+) /Deficit(-)} up to FY 2013-14 (as per Table 3.22 of Tariff Order FY 2015-16 / Table 3.16 of Tariff Order FY 2016-17)	(-) 177.71	(-) 4947.08	(+)177.71	--	(+) 861.79
23	Carrying Cost on Previous Years Gaps [Charges(+) / Recovery(-)]	(+) 63.38	(-) 807.11	--	(-) 243.96	--
24	**Net Gap {Surplus(+) / Deficit(-)} up to FY 2014-15**	**(-) 593.63**	**(-) 6803.85**	**(-) 53.60**	**(-) 1020.67**	**(+) 748.62**

***includes in Table 2.14**

Net revenue gap (surplus) is of ₹748.62 crore upto FY 2014-15 as determined above, which has been carried over to Table 3.14 of this Tariff Order.

Chapter 3
True up for FY 2015-16

3.1 Background

The Commission approved the ARR and Tariff for FY 2015-16 in its Tariff Order dated 05.05.2015, which was based on the costs and revenues estimated by the Punjab State Power Corporation Limited (PSPCL). PSPCL had furnished revised estimates for FY 2015-16during the determination of ARR and Tariff for FY 2016-17, in which there were major differences in certain items of costs as well as projected revenues both in the revised estimates furnished by PSPCL and the approvals granted by the Commission. The Commission, in its Tariff Order of FY 2016-17, reviewed its earlier approvals and re-determined the same based on the revised estimates made available by PSPCL. PSPCL, in this ARR Petition, has submitted that the audit of accounts for FY 2015-16 is under process and will be submitted as soon as the audited accounts for FY 2015-16 are available. Now, PSPCL has submitted petition vide letter no. 453/CC/DTR/Dy.CAO/245Vol.-I dated 24.04.2017 for true up of FY 2015-16, along with audited annual accounts, and has prayed that the truing up of costs and revenue for FY 2015-16 may be undertaken by the Commission. The Commission has decided to take the petition on record of the Commission as Petition No. 33 of 2017. As the Tariff Order for MYT Control Period from FY 2017-18 to FY 2019-20 is under process, the Commission includes its decisions in respect of Petition No. 33 of 2017 in the Tariff Order for MYT Control Period from FY 2017-18 to FY 2019-20 in case of Petition No. 90 of 2016.

The Audited Annual Accounts for FY 2015-16 submitted by PSPCL do not contain the audited figures of energy sales, generation and power purchase. PSPCL was directed to furnish the audited figures of energy sales, generation and power purchase. PSPCL in its reply, vide memo no. 1178 dated 23.12.2016, had submitted that as per the duties of Statutory Auditors laid down under section 227 of the Companies Act, 1956, auditing of energy sales, generation and power purchase figures is over and above the scope of Statutory Audit. The figures submitted are duly signed by the Chief Engineer/ ARR&TR, who is duly authorised by the company for preparing the petition and disclosing the information to the Commission. Further, the petition has been duly approved by the WTDs of the Company, indicating that the figures of energy sales, generation and power purchase are also approved by the

WTDs. After considering the reply of PSPCL, the Commission decides to take figures of energy sales, generation and power purchase submitted by PSPCL in the petition, into consideration for true up of FY 2015-16 in Petition No. 33 of 2017. However, the Commission directs PSPCL to submit these figures duly audited in future.

The figures supplied by PSPCL vary in parts with the figures taken into account in the Review for FY 2015-16 by the Commission. This Chapter contains a final true up of FY 2015-16, based on figures submitted by PSPCL in Petition No. 33 of 2017.

3.2 Energy Demand (Sales)

3.2.1 The sales projected by PSPCL during the determination of ARR for FY 2015-16, sales approved by the Commission in the Tariff Order of FY 2015-16, revised estimates furnished by PSPCL during determination of ARR of FY 2016-17, sales revised by the Commission in review, sales figures now given by PSPCL and approved by the Commission are summarized in Table 3.1.

Table 3.1: Energy Sales – FY 2015-16

(MU)

Sr. No.	Category	Projected by PSPCL during determination of ARR FY 2015-16	Approved by the Commission in T.O. FY 2015-16	Revised Estimates by PSPCL during processing of ARR FY 2016-17	Revised by the Commission in Review	Energy Sales figures now submitted by PSPCL for true up	Now approved by the Commission
I	II	III	IV	V	VI	VII	VIII
1.	Domestic	12515.67	12816	12066.40	12066.40	12108.24	12108.24
2.	Non-Residential	3468.21	3553	3481.06	3481.06	3518.24	3518.24
3.	Small Power	947.27	949	954.80	954.80	951.61	951.61
4.	Medium Supply	1991.86	1991	2115.88	2115.88	2111.44	2111.44
5.	Large Supply	11783.76	12245	10049.12	10049.12	10087.13	10087.13
6.	Public Lighting	203.41	201	184.84	184.84	202.82	202.82
7.	Bulk Supply	663.63	664	649.02	649.02	661.19	661.19
8.	Railway Traction	152.56	151	165.33	165.33	165.64	165.64
9.	**Total metered Sales (within the State)**	**31726.37**	**32570**	**29666.45**	**29666.45**	**29806.31**	**29806.31**
10.	Common Pool	312.00	312	311.00	311.00	294.51	294.51
11.	Outside State sales	54.00	54	143.00	53.00	137.07	52.66*
12.	**Total metered Sales (9+10+11)**	**32092.37**	**32936**	**30120.45**	**30030.45**	**30237.89**	**30153.48**
13.	AP consumption	11374.00	10264	11525.33	10537.00	11523.34	10793.71**
14.	**Total Sales (12+13)**	**43466.37**	**43200**	**41645.78**	**40567.45**	**41761.23**	**40947.19**

* as discussed in para 3.2.2
** as discussed in para 3.2.3

PSPCL has furnished the total sales as 41761.23 MU for FY 2015-16, in the petition (No. 33 of 2017), as shown under column VII of Table 3.1.

3.2.2 **Metered Sales**

In view of discussion in para 3.1 and on the basis of sales figures supplied by PSPCL in Petition No. 33 of 2017, the Commission approves metered sales within the State as 29806.31 MU.

PSPCL has also submitted 137.07 MU of energy sales under the head "Outside State sale," consisting of 52.66 MU as royalty of Himachal Pradesh (HP) from Shanan and 84.41 MU as free share from RSD to HP. The Commission considers the Outside State sale of 52.66 MU, after excluding free share of HP in RSD from Outside State sales. Further, the Commission considers sales to common pool consumers as 294.51 MU.

Thus, total metered sales now approved by the Commission is 30153.48 MU as shown in column VIII, Sr. No. 12 of Table 3.1.

3.2.3 **AP Consumption**

PSPCL in its ARR for FY 2015-16, projected the AP consumption as 11374 MU and the Commission, in its Tariff Order for FY 2015-16, approved AP consumption of 10264 MU. The Commission in the Tariff Order for FY 2015-16, observed that there was no uniform pattern of increase/ decrease in AP consumption during the period from FY 2010-11 to FY 2014-15. In the years 2012-13 and 2014-15, AP consumption was more as compared to respective previous years, where as in the years 2011-12 and 2013-14, AP consumption was less as compared to respective previous years. The Commission also observed that there was unusual increase in AP consumption in FY 2014-15 as compared to FY 2013-14, because FY 2014-15 was relatively a dry year. Keeping in view, that there was no fixed pattern of increase/decrease in AP consumption from FY 2010-11 to FY 2014-15, the Commission kept the same level of AP consumption of 10264 MU for FY 2015-16 as fixed for FY 2014-15(RE). The Commission further observed that it will revisit the AP consumption for FY 2015-16, while undertaking the Review/True up for FY 2015-16. In the ARR petition for FY 2016-17, PSPCL had revised the estimate of AP consumption to 11140 MU for FY 2015-16. The Commission, in the review of FY 2015-16 carried out in the Tariff Order for FY 2016-17, approved the AP consumption of 10537 MU for FY 2015-16, on the basis of energy pumped during April, 2015 to December, 2015 and on proportionate basis (in proportion to average of the percentages of AP consumption during the last three months to the first nine months of FY 2011-12, FY 2012-13 and FY 2013-14) for the period from January, 2016 to March, 2016.

PSPCL has now submitted the energy sales to AP category for FY 2015-16 as

11523.34 MU, in Petition No. 33 of 2017.

PSPCL in the petition has submitted as under:

i) The Commission had approved the AP consumption of 10537 MU for FY 2015-16 in review, in the Tariff Order for FY 2016-17, against 11140 MU projected by PSPCL in its revised estimates in the ARR of FY 2016-17. In the revised estimate of FY 2014-15, the Commission determined the AP consumption based on the month-wise energy pumped in AP feeders.PSPCL has further submitted that the Commission has changed the methodology for AP consumption in the Tariff Order for FY 2014-15. PSPCL had submitted the AP consumption based on sample meters. In this Petition, PSPCL has submitted the AP consumption based on sample meter data. The actual AP consumption as recorded for FY 2015-16 is higher by 986 MU than that approved by the Commission in review.

ii) The Commission has changed the methodology for AP consumption since FY 2010-11 and has disallowed the actual sales of AP consumers on the grounds of change in methodology for deriving AP consumption since the Tariff Order for FY 2014-15. However, PSPCL has complied with most of the directives of the Commission regarding the implementation of metering of AP consumers.

iii) The disapproval of AP sales ultimately results in huge disallowance in the power purchase cost. It is only the sixth year of PSPCL's functioning as a corporate entity. However, the legacy of disallowances in AP sales as prevalent in the erstwhile PSEB era are still being continued for PSPCL. PSPCL believes that the whole agenda for carrying out the reform process through unbundling and introducing the Transfer Scheme was to bring-in more transparency and accountability in the successor entities. It is, therefore, essential that such newly created entities be provided with the necessary handholding support so that they have enough funds to meet the stipulated targets.

iv) Since incorporation of PSPCL, it is aggressively pursuing the directives issued by the Commission within the overall budgetary constraints. The financial constraints are largely on account of the huge disallowances in actual expenses. Further, continued disallowance may lead PSPCL to the same financial crisis. The Electricity Act, 2003 mandates that the SERC should safeguard consumers' interest and at the same time, ensure recovery of the cost of electricity in a reasonable manner. PSPCL has prayed to balance the public interest with the financial viability of the Utility, which will be in the long-term interest of the consumers.

v) Further, continued disallowance may lead PSPCL to the same financial crisis as prevalent in erstwhile PSEB. Also, the Tariff Policy stipulates that in case the performance of the utilities is below the desired levels, then a suitable trajectory should be approved by the Commission to bring the performance to the desired levels. In this case, PSPCL has prayed that being a newly incorporated entity, suitable time frame be provided for meeting the desired performance levels and then impose any disallowances/penalties, if required.

vi) AP consumption has been considered based on sample meters as AP consumption based on energy pumped in AP feeders is not a reliable method of assessing the consumption. Further, the computation of AP consumption based on energy pumped in AP feeders involves assumptions with respect to losses on agriculture feeders and contribution of AP consumption on mixed load feeders and any incorrect assumption shall affect the consumption adversely for PSPCL. Further, working out the final output on the basis of reverse computation is not an appropriate method of computation. Also, this method of calculation is not being adopted by any other SERC. Further, there is hardly any State, having significant AP consumption, which has 100% metering of AP consumers.

vii) The approach adopted by the Commission for calculating AP consumption on pumped energy is not correct due to the following reasons:

  (a) AP consumption of Kandi Area mixed feeders taken as 30% of the total consumption, whereas PSPCL has calculated the same as 45% of the total consumption. PSPCL supplied detailed calculations to this effect to the Commission vide its letter no. 2944 dated 23.12.2013.

  (b) The 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 facts. All new AP connections and shifting of connections are on HVDS only and therefore losses on AP feeders are nowhere more than 6-10%.

PSPCL has prayed that in light of the above, the AP sales as submitted in the Petition be approved.

Commission's Views

The Commission, in para 2.2.3, considered the submissions made by PSPCL in the ARR for MYT Control Period from FY 2017-18 to FY 2019-20 and decided to estimate AP consumption for FY 2014-15 (True up) on the basis of pumped energy.

The submissions made now for truing up of AP consumption for FY 2015-16 are similar to those made for true up of FY 2014-15, and the matter has already been discussed in detail in para 2.2.3 of this Tariff Order. As such, the Commission decides to estimate AP consumption on the basis of pumped energy data for FY 2015-16, supplied by PSPCL vide its letter no. 1178 dated 23.12.2016 in the matter of ARR and Tariff Petition for MYT Control Period from FY 2017-18 to FY 2019-20 (Petition No. 90 of 2016), in reply to deficiencies pointed out by the Commission.

In para 5.2.2.3 of the Tariff Order for FY 2016-17, the Commission, while carrying out review for FY 2015-16 observed as under:

"As brought out in para 3.2.3 of the Tariff Order, a random checking of 60 No. AP feeders fed from 12 No. Grid Sub-stations of PSPCL/PSTCL was carried out and excess pumped energy booked on average basis by showing grid meters as non-functional, to the tune of 34.66% during FY 2013-14 and 34.64% during FY 2014-15 was detected. Thereafter, pumped energy data of 5 number AP feeders fed from 220 KV Sub-station, Ajitwal for FY 2014-15 and FY 2015-16 was checked on 30.11.2015, and the detailed report was sent to PSPCL and PSTCL vide letters dated 05.01.2016, for comments. After considering the comments of PSPCL/PSTCL, the excess pumped energy booked on average basis at 220 kV Sub-station, Ajitwal by showing its feeder meters as defective/non-functional was re-worked out and found to be 70.58% during FY 2014-15 and 22.96% during FY 2015-16. Thus, the excess pumped energy booked on average basis for FY 2014-15 has been re-calculated as 43.20%. Since investigation of some more feeders is required to be carried out for FY 2015-16 in the near future, so the average of excess pumped energy booked on average basis during FY 2013-14 and FY 2014-15 i.e. 42.39% has been considered for reduction of the pumped energy booked on average basis during FY 2015-16, subject to further investigation and true up."

The Commission further got the Pumped Energy (P.E.) data of 66 kV Sub Station, Ajnala and 66 kV Sub Station, Ramdas checked and found that at 66 kV Sub Station, Ajnala**,** 34.80% of the pumped energy booked on average basis against 8 number AP feeders was excess for FY 2015-16 and at 66 kV Sub Station Ramdas, 25.60% of the averages against 7 feeders were booked as excess P.E. for FY 2015-16. Thus, based on the checking of P.E. of 20 feeders of 220 kV Sub Station, Ajitwal, 66 kV Sub Station, Ajnala and 66 kV Sub Station Ramdas, it was found that 25.56% of the P.E. booked on average was excess for FY 2015-16.

In view of the ongoing malady of booking huge pumped energy on average basis by showing feeder meters as defective/inoperative, the Commission considered the matter in totality and decided to initiate Suo-motu proceedings against delinquent officers/officials under section 142 of the Electricity Act, 2003, for violating the repeated directions of the Commission. During proceedings, PSTCL was also arrayed as respondent and was directed to validate the P.E. data submitted to the Commission by PSPCL for all AP feeders fed from 132/220 kV Sub Stations under the administrative control of PSTCL. PSTCL carried out validation of the P.E data and reported that 32.42 MU were booked as excess P.E. by PSPCL from April, 2015 to June, 2016, against total pumped energy of 3315.77 MU (0.978%) on these feeders.

The Commission directed PSPCL to cross verify the validation report carried out by PSTCL and submit its comments. PSPCL vide CE/ARR & TR memo No. 6907 dated 23.01.2017 submitted that 34.62 MU were booked as excess on all AP feeders fed from 132/220 kV Sub Stations of PSTCL against total pumped energy of 3315.77 MU reported by PSPCL to the Commission on these feeders. The Commission in its order dated 19.04.2017 in Petition No. 42 of 2016 (suo-moto) held in para 16.3 as under:

"During hearing, the Commission in order to test check the authenticity of the PE data being supplied by PSPCL to the Commission, directed PSTCL to cross verify the data submitted by PSPCL w.r.t. 11 kV AP feeders fed from 132/220 kV substations. From the scrutiny of the validation report of P.E. of AP feeders emanating from various 132/220 kV Grids submitted by PSTCL, the Commission observes that during the period 4/2015 to 6/2016, PSTCL had detected excess booking of 490.12 LUs on large number of feeders and at the same time, less booking of 165.86 LUs on other feeders. The net excess PE booked has been reported as 324.25 LUs during this period. The validation report was sent to PSPCL for cross verification and comments. PSPCL admitted to excess PE booked to the tune of 438.53 LUs on some feeders and less PE booking of 92.42 LUs on other feeders thus resulting in excess booking of 346.11 LUs. The Commission observes that although there is huge difference in the zone wise computations of excess/less P.E. booked by PSPCL and PSTCL, but the figures of excess PE as worked out by both utilities are in the close range. It is not the quantum of error in booking of pumped energy which is alarming but the fact that PSPCL has failed miserably to ensure capture of correct energy data of about 5500 AP feeders in the State, which is a cause of serious concern. These meters are AMR compatible high accuracy meters and are installed in the control rooms of PSPCL/PSTCL's grid substations which are

manned round the clock by qualified staff. The readings of these meters are recorded daily by the substation staff and are available for verification at any time. For the last more than 3 years, the Commission is making concerted efforts to ensure accurate flow of PE data from these locations but as indicated in the validation of PE data carried out by PSPCL, there are still large number of discrepancies in the pumped energy data being supplied to the Commission. On the other hand, PSPCL never loses any opportunity to claim that the data of about 1 lac sample meters spread across the State is more accurate method of determination of AP consumption. A utility that cannot ensure correct energy data from these 5500 grid meters but claims data accuracy of 1 lac ordinary sample meters shows that the claim of the distribution licensee is doubtful.

The Commission further observes that in their internal enquiry, few officers/officials of a grid substation under a particular zone have been held responsible by PSPCL for adding averages or reporting wrong data of P.E. However, officers/officials in charge of other substations with similar or even more serious irregularities have been given a clean chit, which puts question mark on the credibility of the internal enquiries conducted by PSPCL. Though PSPCL has accepted the wrong reporting of M.F of Bhagura feeder at 220kV S/S Mahilpur & Nihalgarh feeder at 220kV S/S Patranand also addition of huge UPS consumption in AP feeder at 66kV grid Manochahal etc but still the names and designations of the officers/officials responsible for these lapses have not been submitted to the Commission.

The Commission directs CMD/PSPCL to Order an independent enquiry by the Technical Audit or Enforcement wing within 15 days of the issue of this Order to pin point the responsibility of guilty officials/officers posted at the substations mentioned in the tables at pages 45 and 46 of this Order. The CMD should submit an action taken report to the Commission within 3 months. ***Appropriate decision regarding excess pumped energy booked by PSPCL shall be taken while calculating the AP consumption in the Tariff order for the relevant year.****"[Emphasis added]*

The Commission carried out validation of only 20 feeders for FY 2015-16 and found that 25.56% of the P.E. booked on average basis was excess. Validation of pumped energy data of more than 1000 number AP feeders was carried out by PSTCL and cross verified by PSPCL during proceedings of petition no. 42 of 2016. As stated above, it was admitted by PSPCL during proceedings in Suo-moto petition no. 42 of 2016 that 34.61 MU were booked as excess pumped energy on 11 kV feeders fed from 132/220 kV Grid Sub-stations against total pumped energy of 3315.77 MU (1.044%) on these feeders reported by PSPCL to the Commission. Since it has much larger validation base and also includes cases of P.E. booked on average basis, so the Commission decides to reduce the pumped energy for FY 2015-16 by 1.044%.

In view of the above, the Commission has estimated the AP consumption as 10793.71 MU during FY 2015-16, on the basis of energy pumped data supplied by PSPCL, as worked out in Table 3.2.

Table 3.2: AP Consumption for FY 2015-16

(MU)

Sr. No.	Description	Energy
(i)	Energy pumped during April, 2015 to March, 2016 in case of 3-phase 3-wire AP feeders	11621.59
(ii)	Energy pumped during April, 2015 to March, 2016 in case of 3-phase 4-wire AP feeders	6.92 [a]
(iii)	Energy pumped during April, 2015 to March, 2016 in case of Kandi Area mixed feeders feeding AP load	539.95 [b]
(iv)	Total energy pumped during FY 2015-16 for AP supply {(i)+ (ii)+ (iii)}	12168.46
(v)	Disallowance @ 1.044% of the total pumped energy {(iv)*1.044%}	127.04
(vi)	Net AP consumption for FY 2015-16 {(iv) - (v)}	12041.42
(vii)	Less losses @10.97%[c] (15.50-(2.5+15% of 13.55)) {(vi)x10.97%}	1320.94
(viii)	Net AP consumption for FY 2015-16 {(vi) - (vii)}	10720.48
(ix)	AP consumption for load of 59.70[d] MW running on Urban Feeders [not included above at Sr. No.(viii)] {(viii)x 59.70/8739.61[e]}	73.23
(x)	**Total AP consumption for FY 2015-16 {(viii)+ (ix)}**	**10793.71**

(a) *Calculated by multiplying the number of 3-phase 4-wire AP feeders for each month with AP consumption per feeder for that month in case of 3-phase 3-wire AP feeders.*
(b) *Calculated by assuming the AP load on Kandi Area feeders feeding mixed load as 30%.*
(c) *The loss @10.97% (11kV and below) for FY 2015-16 has been taken from the target of T&D loss @15.50% fixed in the Tariff Order for FY 2015-16.*
(d) *As per data supplied by PSPCL in the Petition No. 33 of 2017 (Format 1B).*
(e) *AP load running on 3-phase 3-wire, 3-phase 4-wire and Kandi Area mixed feeders is 8739.61 MW ending March, 2016 as per data/information supplied by PSPCL in the Petition No. 33 of 2017 (Format 1B).*

Thus, the Commission approves the AP Consumption of 10793.71 MU (say 10794 MU) for FY 2015-16.

3.3 Transmission and Distribution Losses (T&D Losses)

PSPCL had projected the T&D losses of 16.00% in its ARR Petition for FY 2015-16, but the Commission fixed the target of overall T&D losses at 15.50% (including transmission loss of 2.50% for PSTCL) for FY 2015-16, after considering the submissions made by PSPCL in the ARR for FY 2015-16 and AP consumption approved by the Commission for FY 2015-16.

In its ARR Petition for FY 2016-17, PSPCL projected the revised T&D losses of 15.50% for FY 2015-16. The Commission also decided to retain the overall T&D losses at the level of 15.50% as fixed in the Tariff Order for FY 2015-16.

Now, PSPCL in Petition No. 33 of 2017 has intimated the T&D losses of 14.71%

(including Intra-State Transmission Losses), as actual, for FY 2015-16, considering the AP consumption of 11523.34 MU for FY 2015-16. PSPCL has submitted that the actual value of T&D losses for FY 2015-16, has been arrived at in accordance with the actual energy sales, own generation and energy purchase, which is lower than approved loss level of 15.50%, amounting to over achievement of 0.79% in comparison to the target given by the Commission for the year.

PSPCL has submitted that PSPCL is making concrete efforts to reduce and control the losses and is already at par with some of the efficient utilities in the country. PSPCL has already taken initiatives to reduce T&D losses, which are discussed in the compliance report on the directives given by the Commission. PSPCL has further submitted that in the previous Tariff Orders, the Commission has disallowed part of the sales pertaining to AP consumption and added such disallowed sales to the T&D losses. The re-worked T&D losses being higher than the approved losses, the Commission is disallowing the consequential power purchase cost, by multiplying the excess losses with the average rate of power purchase. However, the average rate of power purchase considered by the Commission includes the fixed cost of power purchase, which cannot be saved, even if the losses and hence, power purchase quantum is lower. Thus, disallowance of power purchase cost on account of excess losses, needs to be computed by multiplying the excess losses with the average variable rate of power purchase, after excluding the fixed cost of power purchase. PSPCL has further prayed that the actual AP sale, which is in accordance with audited annual accounts of PSPCL be approved, for the final truing up for FY 2015-16. In light of the above, PSPCL prayed to approve the actual T&D loss of 14.71% for FY 2015-16.

The Commission, in para 3.2.3of the Tariff Order, has determined and approved AP consumption as 10793.71(say 10794) MU for FY 2015-16. As brought out in the para, the Commission has determined the AP consumption on the basis of energy pumped to the AP consumers, as the AP consumption projected by PSPCL on the basis of sample meters has not been found to be realistic. The determination of AP consumption by either methodology, rather any methodology, should not have any bearing on T&D losses, if determination of AP consumption is correct. The endeavour of the Commission has always been to determine the AP consumption as accurately as possible and near to actual. As such, the contention of PSPCL in this regard cannot be accepted.

Accordingly, the Commission approves the overall T&D loss level of 15.50% for FY 2015-16 as approved in the Tariff Order for FY 2015-16, including 2.5%

transmission loss for PSTCL approved for FY 2015-16.**

3.4 PSPCL'S Own Generation

3.4.1 **Thermal Generation:** The station-wise generation projected by PSPCL during the determination of ARR by the Commission for FY 2015-16, generation approved by the Commission in the Tariff Order, revised estimates furnished by PSPCL during determination of ARR of FY 2016-17, generation revised by the Commission in the review, generation figures now supplied by PSPCL in Petition No. 33 of 2017 and generation now approved by the Commission are given in Table 3.3.

Table 3.3: Thermal Generation – FY 2015-16

(MU)

Sr. No.	Thermal Station	Projected by PSPCL during determination of ARR for FY 2015-16		Approved by the Commission in T.O. FY 2015-16		Revised Estimates submitted by PSPCL during processing of ARR for FY 2016-17	Revised by the Commission in Review		Generation now submitted by PSPCL in Petition No. 33 of 2017		Now approved by the Commission	
		Gross	Net	Gross	Net	Gross	Gross	Net	Gross	Net	Gross	Net
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII
1.	GNDTP	2646	2355	2708	2410	918.30	918.30	817.29	918.30	814.87	918.30	817.29
2.	GGSSTP	8600	7869	9249	8463	3959.00	3959.00	3622.48	3959.00	3600.70	3959.00	3622.49
3.	GHTP	7195	6583	7336	6712	3134.83	3134.83	2868.37	3134.83	2853.38	3134.83	2868.37
	Total	**18441**	**16807**	**19293**	**17585**	**8012.13**	**8012.13**	**7308.14**	**8012.13**	**7268.95**	**8012.13**	**7308.15**

Plant-wise generation figures supplied by PSPCL in Petition No. 33 of 2017and the generation figures validated by the Commission have been taken into account.

Accordingly, the Commission approves gross thermal generation of 8012.13 MU for FY 2014-15.

Auxiliary Consumption

The auxiliary consumption projected by PSPCL during determination of ARR by the Commission for FY 2015-16, auxiliary consumption approved by the Commission in the Tariff Order, revised estimates furnished during determination of ARR of FY 2016-17, auxiliary consumption revised by the Commission in the review, auxiliary consumption figures supplied by PSPCL in Petition No. 33 of 2017and auxiliary consumption now approved by the Commission are given in Table 3.4.

Table 3.4: Auxiliary Consumption – FY 2015-16

Sr. No.	Thermal Station	Projected by PSPCL during determination of ARR FY 2015-16	Approved by the Commission in T.O. FY 2015-16	Revised Estimates by PSPCL during determination of ARR FY 2016-17	Revised by the Commission in Review	Now Submitted by PSPCL	Now approved by the Commission
I	II	III	IV	V	VI	VII	VIII
1.	GNDTP	11.00%	11.00%	Apr., 15 – Sep., 15 (11.28%) Oct., 15 – Mar., 16 (11.00%)	11.00%	11.26%	11.00%
2.	GGSSTP	8.50%	8.50%	Apr., 15 – Sep., 15 (8.79%) Oct., 15 – Mar., 16 (8.50%)	8.50%	9.05%	8.50%
3.	GHTP	8.50%	8.50%	Apr., 15 – Sep., 15 (8.89%) Oct., 15 – Mar., 16 (8.50%)	8.50%	8.98%	8.50%

It is observed that actual auxiliary consumption now reported by PSPCL is marginally higher for GNDTP, GGSSTP and GHTP, than the approved levels. PSPCL submitted that PSPCL strived hard to achieve the normative auxiliary consumption approved by the Commission. However, the actual auxiliary consumption is slightly higher than that approved by the Commission for all three generating stations. PSPCL has submitted that the norm for auxiliary consumption for GNDTP station of 110 MW/120 MW unit sets should be benchmarked with that applicable for Tanda station at 12% in accordance with the provisions of the CERC Regulations. The actual auxiliary consumption for GNDTP for FY 2015-16 is 11.26%, which is lower than norm of 12.00% as applicable to Tanda Central generating station. PSPCL has prayed to the Commission to approve auxiliary consumption for GNDTP at 12%. Further, in case of GHTP, PSPCL has submitted that the value of Auxiliary Consumption for FY 2015-16 was 8.98%, which is higher than the norm of 8.50%. The reason for high value of auxiliary consumption for this period is low PLF on account of low system demand.

PSPCL in the petition has made similar submissions as made for true up of FY 2014-15 (in Petition No. 90 of 2016 i.e. ARR for MYT Control Period from FY 2017-18 to FY 2019-20),in case of auxiliary consumption for thermal generating stations of PSPCL, which have already been discussed in detail under para 2.4.1 of this Tariff Order.

Accordingly, the Commission approves the auxiliary consumption of 11.00%, 8.50% and 8.50% for GNDTP, GGSSTP and GHTP respectively. The net thermal generation on this basis works out to 7308.15 MU as shown in column XIII of Table 3.3.

3.4.2 **Hydel Generation:** The station-wise generation submitted by PSPCL to the Commission during determination of ARR for FY 2015-16, generation approved by the Commission in the Tariff Order, revised estimates furnished by PSPCL during determination of ARR of FY 2016-17, generation revised by the Commission in review and generation figures now furnished by PSPCL and those accepted by the Commission are given in Table 3.5.

Table 3.5: Hydel Generation – FY 2015-16

(MU)

Sr. No.	Hydel Station	Projected by PSPCL during determination of ARR for FY 2015-16	Approved by Commission in TO FY 2015-16	RE submitted by PSPCL during processing of ARR for FY2016-17	Revised by Commission in TO FY 2016-17	Generation figures now submitted by PSPCL in Petition No. 33 of 2017	Now approved by the Commission
I	II	III	IV	V	VI	VII	VIII
1.	Shanan	525	437	532.62	532.62	532.62	532.62
2.	UBDC	369	325	308.26	308.26	320.00	320.00
3.	RSD	1523	1644	1958.27	1958.27	1958.27	1958.27
4.	MHP	1067	1409	1169.45	1169.45	1169.45	1169.45
5.	ASHP	720	727	668.53	668.53	668.53	668.53
6.	Micro hydel	9	8	6.00	6.00	5.94	5.94
7.	**Total own generation (Gross)**	**4213**	**4550**	**4643.13**	**4643.13**	**4654.81**	**4654.81**
8.	Less: Auxiliary consumption and Transformation losses	12	38	26	38.74	38.16	38.93
9.	Less: HP share in RSD (free)	66	76		90.00	137.07	84.41
10.	**Total own generation (Net)**	**4135**	**4436**	**4617.13**	**4514.39**	**4479.58**	**4531.47**
11.	**PSPCL share from BBMB**						
(a)	PSPCL share (Net)	4107	4107	4275.00	4275.00	4296.58	4296.58
(b)	Common pool share (Net)	312	312	311.00	311.00	294.51	294.51
12.	**Share from BBMB (Net)**	**4419**	**4419**	**4586.00**	**4586.00**	**4591.09**	**4591.09**
13.	**Total hydro generation (Net) (Own + BBMB)**	**8554**	**8855**	**9203.13**	**9100.39**	**9070.67**	**9122.56**

* *Transformation losses @0.5% (23.27 MU), auxiliary consumption @0.5% for RSD generation of 1958.27MU and UBDC stage-1 generation of 160 MU (having static exciters and as intimated by PSPCL in the ARR)and@0.2%for others (15.66 MU).*

*** Free HP share in RSD (84.41 MU) as intimated by PSPCL in the Petition.*

The actual gross hydel generation from PSPCL's own hydel stations for FY 2015-16is 4654.81 MU as per Petition No. 33 of 2017 and the Commission accepts the same. The Commission has worked out net hydel generation by deducting free HP share in RSD along with auxiliary consumption and transformation losses, but inclusive of royalty of HP in Shanan. Thus, the net hydel generation for FY 2015-16, works out to 4531.47 MU. The actual net availability from BBMB as per Petition No. 33 of 2017 is 4591.09 MU, including common pool share, which the Commission accepts.

The Commission, therefore, approves net hydel generation for FY 2015-16 at 4531.47 MU from PSPCL's own hydel generating stations and 4591.09 MU as net share from BBMB as shown in Table 3.5.

3.5 Power Purchase

The Commission in its Tariff Order of FY 2015-16approved net power purchase of 24617 MU (net). During determination of ARR of FY 2016-17, PSPCL furnished revised estimates for power purchase of 29610 MU (net). But, the Commission determined the net power purchase of 31534 MU. PSPCL has now submitted power purchase during FY 2015-16 as 32414.04 MU (net), in Petition No. 33 of 2017. This matter is further discussed in para 3.8.

3.6 Energy Balance

3.6.1 The details of energy requirement and availability for FY 2015-16 approved by the Commission in review in the Tariff Order of FY 2016-17 and figures now furnished by PSPCL in the Petition No. 33 of 2017 are given in Table 3.6.PSPCL has prayed approve the energy balance as projected in the petition and allow incentive for lower T&D losses of 14.71%, against approved trajectory of 15.50% for FY 2015-16. The energy balance, including T&D losses along with sales and availability now approved by the Commission, is depicted in column VI of Table 3.6.

Table 3.6: Energy Balance – FY 2015-16

(MU)

Sr. No.	Particulars	Approved by the Commission in T.O. FY2016-17 in review	Now submitted by PSPCL in the Petition	Now approved by the Commission	Sales & actual T&D losses as per approved energy available
I	II	III	IV	V	VI
A) Energy Requirement					
1.	Metered Sales	29666.00	29806	29806	29806
2.	Sales to Agriculture Pumpsets	10537.00	11523	10794	10794
3.	Total Sales within the State	**40203**	**41329**	**40600**	**40600**
4.	Loss percentage	15.50%	14.71%	15.50%	16.28%
5.	T&D losses	7375	7130	7447	7897
6.	Sales to Common pool consumers	311	295	295	295
7.	Outside State Sales	53	137	53	53
8.	**Total requirement**	**47942**	**48891**	**48395**	**48845**
B) Energy Available					
9.	Own generation (Ex-bus)				
10.	Thermal	7308	7269	7308	7308
11.	Hydro(Including share from BBMB and common pool consumers)	9100	9208	9123	9123
12.	Purchase (net)	31534	32414	32414	32414
13.	**Total Available**	**47942**	**48891**	**48845**	**48845**

3.6.2 The total energy available with PSPCL works out to 48845 MU (net), considering all purchases and own generation (net). With this energy available, the Commission works out overall T&D losses as 16.28%. The difference of 450 MU (net) between energy requirement and energy availability is owing to the underachievement of T&D loss target as discussed in para 3.3 and depicted in column V & VI of Table 3.6. Higher T&D loss over and above the level approved by the Commission has resulted in increased net power purchase to the extent of450 (7857-7447) MU. The matter is further discussed in para 3.9.

The Commission approves the total energy requirement for FY 2015-16 at 48395 MU after retaining overall T&D losses at 15.50%.

3.7 Fuel Cost

3.7.1 In its Tariff Order for FY 2015-16, the Commission approved the fuel cost as ₹5160.21 crore for a gross thermal generation of 19293 MU (gross). In review, this cost was revised to ₹2407.85 crore for the then approved gross generation of 8012.13 MU (gross). The details are given in Table 3.7.

Table 3.7: Fuel Cost – FY 2015-16

Sr. No.	Station	As per T.O. FY 2015-16		As per Review in T.O. FY 2016-17	
		Gross Generation (MU)	Fuel Cost (₹crore)	Gross Generation (MU)	Fuel Cost (₹crore)
I	II	III	IV	V	VI
1.	GNDTP	2708	717.49	918.30	278.95
2.	GGSSTP	9249	2597.87	3959.00	1185.56
3.	GHTP	7336	1844.85	3134.83	943.34
4.	**Total**	**19293**	**5160.21**	**8012.13**	**2407.85**

3.7.2 PSPCL, in Petition No. 33 of 2017, has indicated actual fuel cost for FY 2015-16 for a gross generation of 8012.13 MU as ₹2782.85 crore, whereas in the Audited Annual Accounts of PSPCL for FY 2015-16, the total generation expenses are ₹2808.37 crore.

In the Audited Annual Accounts of PSPCL for FY 2015-16, the total generation expenses comprise of ₹2691.18crore for coal and oil consumption, ₹41.94 crore for other fuel related costs, ₹49.72 crore for fuel related losses and ₹25.52 crore for other operating expenses, such as cost of water, lubricants, consumable stores and station supplies. Out of these, ₹25.52 crore booked towards other operating expenses do not form part of the fuel cost and are being considered under Repair and Maintenance Expenses in para 3.12. Thus, the net fuel cost for FY 2015-16as per Audited Annual Accounts is taken as ₹2782.85 (2808.37-25.52) crore.

3.7.3 The actual fuel cost intimated by PSPCL for FY 2015-16 in Petition No. 33 of 2017, for a gross thermal generation of 8012.13 MU is based on calorific value and price of coal / oil as given in Table 3.7A.

Table 3.7A: Calorific Value and Price of Coal and Oil as submitted by PSPCL for FY 2015-16

Sr. No.	Station	Calorific value of coal (kCal/kg)	Calorific Value of Oil (kCal/lt)	Price of Oil (₹/KL)	Price of coal excluding transit loss (₹/MT)	Transit loss	Quantity of PANEM Coal used (MT)
I	II	III	IV	V	VI	VII	VIII
1.	GNDTP	4061.81	9400	44198.21	4691.41	1.28%	12603
2.	GGSSTP	4125.00	9700	37893.48	5187.74	0.18%	—
3.	GHTP	4114.00	9500	42052.00	5348.00	1.21%	174006

3.7.4 Fuel cost being a major item of expense, the Commission thought it prudent to get the same validated. The calorific value of oil & coal, the price of oil & coal and transit loss of coal as per validation obtained by the Commission by the Commission are indicated in Table 3.7(B). Further, the Commission had decided in the Tariff Order for FY 2015-16 to adopt the GCV of received coal as per CERC Tariff Regulations, 2014, for working out the fuel cost. The calorific value (GCV) as shown under column III of Table 3.7(B) is the calorific value of received coal. The finally accepted values are indicated in Table 3.7B.

Table 3.7 (B): Calorific Value and Price of Coal and Oil as per validation obtained by the Commission for FY 2015-16

Sr. No.	Station	Gross Calorific value of coal (kCal/kg)	Calorific Value of Oil (kCal/lt)	Price of Oil (₹/KL)	Price of coal excluding transit loss (₹/MT)	Transit loss	Quantity of PANEM Coal used (MT)
I	II	III	IV	V	VI	VII	VIII
1.	GNDTP	4285.91	9992.87	44140.01	4691.41	1.28%	12600
2.	GGSSTP	4352.28	9812.46	37893.18	5187.74	0.36%	218678
3.	GHTP	4233.15	9881.69	42052.00	5340.14	0.13%	171580

3.7.5 The Commission has now approved revised gross thermal generation of 8012.13 MU (918.30 MU for GNDTP, 3959.00 MU for GGSSTP and 3134.85 MU for GHTP) as discussed in para 3.4.1. The submission of PSPCL regarding various performance parameters of Thermal Generating Stations have been discussed in the following paras. The fuel cost for different thermal generating stations corresponding to generation now approved has been worked out, based on the parameters adopted by the Commission in its Tariff Order of FY 2015-16.

A. Price and Gross Calorific Value of the Coal

As discussed in para 4.7.6 of the Tariff Order for FY 2015-16 and para 5.8.4 of the

Tariff Order for FY 2016-17,the Commission has adopted the GCV of received coal as per CERC Tariff Regulations, 2014, for working out the fuel cost. The calorific value (GCV) as shown under column III of Table 3.7(B) is the calorific value of received coal. Price and calorific value of coal have been adopted as per validation obtained by the Commission.

B. Station Heat Rate (SHR)

PSPCL has intimated in Petition No. 33 of 2017, the SHR for GNDTP as 2864.79kCal/kWh, for GGSSTP as 2847.16kCal/kWh and for GHTP as 2512.15kCal/kWh. PSPCL has submitted that PSPCL has achieved lower SHR for GHTP than approved by the Commission. However, SHR for GGSSTP and GNDTP is slightly more than the value approved by the Commission. PSPCL in its ARR has submitted excerpts from orders of Hon'ble APTEL in case of Appeal Nos. 42 & 43 of 2008, in the matter of Haryana Power Generation Company Limited v/s Haryana Electricity Regulatory Commission, Appeal Nos. 86 & 87 of 2007, in the matter of by Maharashtra State Power Generation Company Limited v/s Mahrashtra Electricity Regulatory Commission and Appeal No. 129 of 2006, in the matter of Gujarat State Electricity Company Limited v/s Gujarat Electricity Regulatory Commission. Further, PSPCL has prayed that the technical performance of its stations at relaxed levels be allowed, in view of the submissions made in the petition.

The Commission observed that Regulation20 of PSERC Tariff Regulations specifies that while determining the cost of generation of each thermal/gas/hydro-electric generating stations located within the State, the Commission shall be guided as far as feasible, by the principles and methodologies of CERC, as amended from time to time. Further, Regulation 37 of PSERC Tariff Regulations specifies that the components of generation tariff shall be as laid down in the CERC Tariff Regulations.

(i) For GNDTP, the Commission approved SHR of 2750 kCal/kWh for FY 2014-15 on the basis of CERC norms for Tanda TPS (after its R&M), as per CERC Tariff Regulations, 2014.

(ii) For GGSSTP and GHTP (Unit-I & II), the Commission approved SHR of 2450 kCal/kWh for FY 2014-15 on the basis of CERC norms as specified in Regulation 36(C)(a) of CERC Tariff Regulations, 2014.

(iii) For GHTP (Unit-III & IV), the Commission approved SHR of 2428kCal/kWh for FY 2014-15 on the basis of CERC norms as specified in Regulation 36(C)(c) of CERC Tariff Regulations, 2014.

C. Price and calorific value of oil

Price and calorific value of oil have been considered as per validation obtained by the Commission.

D. Specific oil consumption

PSPCL has submitted specific oil consumption at GNDTP, GGSSTP and GHTP as 2.31ml/kWh, 1.11ml/kWh and 1.08 ml/kWh respectively for FY 2015-16. PSPCL has further submitted that the actual specific oil consumption for FY 2015-16 is more than that approved by the Commission due to regular backing down of generation. However, the Commission has adopted CERC norms for specific oil consumption as in the case of other performance parameters of thermal plants, as such**, the Commission approves 0.5 ml/kWh specific oil consumption for GNDTP, GGSSTP and GHTP.**

E. Transit Loss

PSPCL has submitted the actual transit loss in Petition No. 33 of 2017, as 1.28% for GNDTP, 0.18% for GGSSTP and 1.21% for GHTP (wrongly mentioned as (-)0.14% in para 2.9 (page 27 of the petition). However, calculation for fuel cost has been done by PSPCL by taking transit loss as 1.21% (Format-2C)). PSPCL has further submitted that the coal transit losses are inconsistent for all three generating plants. PSPCL has further submitted that the coal transit losses are not within the control of PSPCL 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 transportation.
c) The transportation of coal happens through open wagon. As soon as the goods are loaded on the wagon, it becomes owner’s risk and railways disown the responsibility. It is subject to pilferages at all halts, which is beyond the control of PSPCL.
d) During unloading, small quantities of coal get stuck at the edges of the transport wagons due to moisture and remain undelivered to the plant, contributing to transit losses.

As discussed in the Tariff Order for FY 2015-16, no transit loss is allowable for PANEM coal while arriving at fuel cost, as prices of PANEM coal according to the contract are on F.O.R. destination basis and in case of coal other than PANEM coal, transit loss at actual, subject to a maximum of 1.00% was allowed by the Commission. The matter has already been discussed in detail in para 3.7.5 of this Tariff Order. Accordingly, **the Commission approves the transit loss as validated (for domestic coal) as 1.00%, 0.36% and 0.13% for GNDTP, GGSSTP and GHTP respectively, for FY 2015-16. However, no such loss is permissible in case of PANEM coal, which is priced on FOR destination basis.**

3.7.6 On the above basis, fuel cost for FY 2015-16 for different thermal generating stations corresponding to actual generation now approved by the Commission is given in Table 3.8.

Table 3.8: Approved Fuel Cost for FY 2015-16

Sr. No.	Item	Derivation	Unit	GNDTP	GGSSTP	GHTP Units I&II	GHTP Units III&IV	Total
I	II	III	IV	V	VI	VII	VIII	IX
1	Gross Generation	A	MU	918.30	3959	1246.80	1888.03	8012.13
2	Station Heat Rate	B	kcal/kWh	2750	2450	2450	2428	
3	Specific oil consumption	C	ml/kWh	0.50	0.50	0.50	0.50	
4	Calorific value of oil	D	kcal/litre	9992.87	9812.46	9881.69	9881.69	
5	Calorific value of coal	E	kcal/kg	4285.91	4352.28	4233.15	4233.15	
6	Over all heat	F = (A x B)	Gcal	2525325	9699550	3054660	4584137	
7	Heat from oil	G=AxCxD /1000	Gcal	4588	19424	6160	9328	
8	Heat from coal	H = (F-G)	Gcal	2520737	9680126	3048500	4574809	
9	Oil consumption	I=(Gx1000)/D	KL	459	1980	623	944	
10	Transit loss of Coal	J	(%)	1.00	0.36	0.13	0.13	
11	Total coal consumption excluding transit loss	K=(H*1000)/E	MT	588145	2224151	720149	1080710	
12	Qty. of PANEM Coal	L	MT	12600	218678	68242*	103338*	
13	Qty. of coal other than PANEM Coal (excluding transit loss)	M=K-L	MT	575545	2005473	651907	977372	
14	Qty. of Coal other than PANEM Coal (including transit loss)	N=M/(1-J/100)	MT	581359	2012719	652756	978644	
15	Total quantity of coal	O=L+N	MT	593959	2231397	720998	1081982	
16	Price of Oil	P	₹/KL	44140.01	37893.18	42052.00	42052.00	
17	Price of Coal	Q	₹/MT	4691.41	5187.74	5340.14	5340.14	
18	Total Cost of Oil	R=P x I / 107	₹crore	2.03	7.50	2.62	3.97	16.12
19	Total Cost of Coal	S=O x Q/107	₹crore	278.65	1157.59	385.02	577.79	2399.05
20	**Total Fuel Cost**	**T=R+S**	**₹crore**	**280.68**	**1165.09**	**387.64**	**581.76**	**2415.17**
21	**Per unit Cost**	**U = T x 10 /A**	**₹/kWh**	**3.06**	**2.94**	**3.11**	**3.08**	**3.01**

* *Quantity of PANEM Coal where not given for different units of a plant has been considered on pro-rata basis of generation.*

The Commission, thus, approves the fuel cost at ₹2415.17 crore for gross generation of 8012.13 MU for FY 2015-16.

3.8 Power Purchase Cost

3.8.1 The Commission, in its Tariff Order for FY 2015-16, approved power purchase cost of ₹11147.06 crore for purchase of 25181 MU (gross), including the cost of RE power and RECs for RPO compliance. In review, the Commission revised the power purchase cost to ₹12506.54 crore, comprising of ₹12263.74 crore for purchase of 32224 MU (gross) and ₹242.80 crore for purchase of power from RE sources/RECs.

3.8.2 The gross power purchase for FY 2015-16 now reported by PSPCL is 32991.60 MU (gross), including short term power purchase of 1814.43 MU and unscheduled interchange (UI) of 184.95 MU. The net power purchase after accounting for actual external losses (of 2.49%) is 32414.04 MU.

3.8.3 The actual cost of power purchase for FY 2015-16 as per Petition No. 33 of 2017 for true up of FY 2015-16 is ₹13042.47 crore, including ₹293.61 crore previous payments made during FY 2015-16. The Power Purchase Cost also includes PGCIL charges of ₹864.34 crore and payment of ₹0.54 crore made to Mercados. PSPCL has not shown any amount for purchase of RECs during FY 2015-16. PSPCL has submitted that the increase in power purchase cost by ₹371.86 crore is mainly due to additional power purchase of 524.80 MU during FY 2015-16 and has requested the Commission to approve cost of power purchase of ₹13042.47 crore and transmission charges of ₹967.65 crore paid to PSTCL as per audited annual accounts for the year.

3.8.4 In the ARR for FY 2015-16, PSPCL had submitted that it has surplus energy available during FY 2015-16 from tied up sources from Central Generating Stations and other sources. The Commission while working out power purchase requirement for FY 2015-16, had observed that PSPCL has additional surplus power of 1736.66 MU and the Commission had provisionally approved sale of surplus power at an average variable rate of surrendered power i.e. 323.68 paise per unit, for energy balance purpose only. PSPCL had not submitted any requirement of short term power purchase for FY 2015-16 in the ARR for FY 2015-16. However, the Commission had directed PSPCL to purchase power in a judicial and economic manner and resort to Demand Side Management practices to maintain its commercial viability. Further, during FY 2015-16, PSPCL filed a petition (No. 26 of 2015) for approval under section 86(1)(b) of the Electricity Act, 2003, for procurement plan on short term basis for FY 2015-16. The Commission in its order dated 29.06.2015 in the matter approved purchase of 2642.31 MU of short term power, subject to the condition that PSPCL shall follow the procedure laid down in the Punjab State Electricity Regulatory Commission (Power Purchase and Procurement Process of Licensee) Regulations, 2012. In the ARR for FY 2016-17, PSPCL had submitted that it has 5171 MU of surplus energy available from tied up sources from central generating stations and the upcoming IPPs in the State of Punjab. PSPCL in Petition No. 33 of 2017 for true up of FY 2015-16, has shown power purchase of 1814.43 MU through traders (short term power) at a total cost of ₹678.92 crore (which comes out 374.18 paise per unit) and 184.95 MU through UI at a total cost of ₹235.26 crore (which comes out 1272.02 paise per unit).

3.8.5 PSPCL vide its letter no. 1178 dated 23.12.2016, in reply to deficiencies pointed out by the Commission in the matter of Petition No. 90 of 2016 i.e. ARR for MYT Control Period from FY 2017-18 to FY 2019-20, has submitted that PSPCL has paid ₹70.31 crore as additional UI charges during FY 2015-16.PSPCL has further intimated that no interest has been paid on account of delayed payment of UI charges during FY 2015-16. However, the Commission decides not to allow additional UI charges leviable/ paid under Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) Regulations, 2014, for over-drawl of power.

3.8.6 PSPCL in Petition No. 33 of 2017 for true up of FY 2015-16, has shown ₹14.70 crore paid as late payment surcharge. As the working capital as per Regulations was allowed to PSPCL, the Commission found no justification to allow the late payment surcharge for delayed payment of power purchase bills. Accordingly, the Commission decides not to allow late payment surcharge of ₹14.70 crore.

3.8.7 PSPCL in Petition No. 33 of 2017 for true up of FY 2015-16, has shown ₹0.54 crore paid to Mercados (Consultant). However, the Commission observed that these expenses do not form part of the Power Purchase expenses and falls under A&G Expenses, dealt in para 3.13.

3.8.8 The energy requirement as now approved by the Commission in the true-up for FY 2015-16 is 48395 MU. The input energy available to PSPCL for consumption in its area of distribution works out to 46846 MU after deducting energy sale to common pool consumers, energy sale outside the State and transmission losses. Accordingly, the RPO compliance for FY 2015-16 is as under:

RPO Compliance for FY 2015-16

Sr. No.	Description	FY 2015-16	
1.	Input Energy (MU)	46846	
		%	MU
2.	RPO specified i. Non-Solar ii. Solar iii. Total	 3.9% 1.0% 4.9%	 1826.99 468.46 2295.45
3.	RE generation/purchase (RPO compliance) i. Non-Solar ii. Solar iii. Total	 2.33% 0.83% 3.16%	 1089.35 388.76 1478.11
4.	Previous year's RPO shortfall allowed to be carried forward to next year i. Non-Solar ii. Solar iii. Total		 718.44 9.46 727.90
5.	RPO compliance after accounting for carry forward of shortfall of previous year (3-4) i. Non-Solar ii. Solar iii. Total	 0.79% 0.81% 1.60%	 370.91 379.30 750.21
6.	RE shortfall carried forward to next year now approved by the Commission (2-5) i. Non-Solar ii. Solar iii. Total	 3.11% 0.19% 3.30%	 1456.08 89.16 1545.24

The Order of the Commission dated 21.03.2017 in petition no. 61 of 2016 filed by PSPCL allowing carried forward of the shortfall of 1577.65 MU [1498.56 MU (Non-Solar) and 77.09 MU (Solar)] of FY 2015-16 to FY 2016-17 stands reviewed as above. Consequently, the shortfall in RPO compliance of FY 2015-16 is trued up to 1545.24 MU [1456.08 MU (Non-Solar) and 89.16 MU (Solar)] as worked out above. As brought out in the foregoing paras, PSPCL has not requisitioned any funds for purchase of RECs in the true-up for FY 2015-16. Earlier an amount of ₹242.80 crore was approved by the Commission in review of FY 2015-16 in the Tariff Order for FY 2016-17.

Further, the Commission in the review for FY 2015-16 carried out in the Tariff Order for FY 2016-17 disallowed ₹14.00 crore in lieu of non-availability of 90 MU renewable energy as four Micro-Hydel Plants of PSPCL were non-functional since long and another 18 (2x9) MW MHP Stage-II project delayed considerably. Accordingly, the said amount of ₹14.00 crore is deductible in the true-up for FY 2015-16.

The Commission directs that PSPCL shall deposit the said amount of ₹14.00 crore in addition to the amount of ₹14.00 crore directed in the true-up for FY 2014-15, to be deposited in a separate fund. The amount in the separate fund shall be utilized for procurement of power from renewable energy sources within the State, for RPO compliance.

3.8.9 PSPCL in Petition No. 33 of 2017 for true up of FY 2015-16, has shown ₹293.61 crore as previous year payments made during FY 2015-16.On query by the Commission, PSPCL vide its letter no. 1178 dated 23.12.2016 has submitted the details of previous payments made during FY 2015-16. As per the practice followed in the past, the prior period expenses are not chargeable under the head Power Purchase and falls under prior period expenses, dealt in para 3.18.

Accordingly, the Commission approves ₹12663.31 (13042.47–70.31-14.70 -0.54–293.61) crore for net power purchase of 32414.04MU (gross power purchase of 32991.60 MU) for FY 2015-16.

3.9 Disincentive on account of higher T&D losses

As discussed in para 3.6.2, PSPCL has under-achieved T&D loss level vis-a-vis the target approved by the Commission. As per PSERC Tariff Regulations, the entire loss on account of under-achievement of T&D losses vis-a-vis the target set by the Commission is to be borne by the licensee. As brought out in the afore-mentioned para, T&D loss level higher than that approved by the Commission has resulted in increase in power purchase to the extent of 450 MU (net), the pro-rata cost of which based on power purchase cost approved in para 3.8, works out to ₹175.80 (12663.31x450/32414.04) crore.

The Commission, therefore, determines an amount of ₹175.80 crore as disincentive on account of higher T&D losses.

The effect of this is reflected at Sr. No. 13 of Table 3.16.

3.10 Incentive/disincentive on account of higher/lower availability of thermal generating stations

3.10.1 PSPCL in its Petition No. 33 of 2017 has also claimed generation incentive on the basis of Plant Availability Factor (PAF) of its thermal generating stations as per PSERC and CERC regulations.

3.10.2 PSPCL has submitted that the generating plants are operating as part of integrated grid and abide by the rules and regulations framed by CERC and PSERC, and to ensure the safety of the grid, PSPCL has to follow the instructions from Punjab State Load Dispatch Centre (PSLDC) to manage the frequency-load balance. During FY 2015-16, PSPCL suffered loss of generation because of backing down of its generation on instructions received from PSLDC, even though it was available for generation. PSPCL has requested to consider the loss of generation due to backing down instructions of PSLDC for assessing the performance of generating plants. PSPCL has submitted the station-wise detail of loss of generation due to backing down instructions from SLDC, as under:

Sr. No.	Thermal Generating Station	Gross Generation approved in TO for FY 2015-16 (MU)	Actual Gross Generation as per the accounts for FY 2015-16 (MU)	Loss of Generation due to backing down instructions from SLDC (MU)	Total Gross Generation including loss of generation due to backing down (MU)
1.	GNDTP	2708	918.30	2842.18	3760.48
2.	GGSSTP	9249	3959.00	6508.32	10467.32
3.	GHTP	7336	3134.83	3993.79	7128.62
	Total	**19293**	**8012.12**	**13344.29**	**21356.42**

The details of unit wise generation and Plant Availability Factor (PAF) in respect of GNDTP, GGSSTP and GHTP for FY 2014-15 have been given by PSPCL in Petition No. 33 of 2017 for true up of FY 2015-16, as under:

Plant	Unit	Gross Generation (MU)	PAF (%)
GNDTP	Unit 1	180.58	86.74
	Unit 2	224.04	99.21
	Unit 3	314.40	89.83
	Unit 4	199.28	99.10
	Total	**918.30**	**93.75**
GGSSTP	Unit 1	696.45	92.91
	Unit 2	885.06	98.66
	Unit 3	605.80	99.03
	Unit 4	609.45	90.10
	Unit 5	634.04	98.62
	Unit 6	528.20	88.77
	Total	**3959.00**	**94.68**
GHTP	Unit 1	683.12	85.93
	Unit 2	563.68	93.13
	Unit 3	971.31	93.56
	Unit 4	916.73	93.41
	Total	**3134.83**	**91.68**

PSPCL has submitted that it has achieved higher plant availability than the normative target of 85% for GNDTP, GGSSTP and GHTP for FY 2015-16. Further, in case of GNDTP, the overall plant availability has been computed after taking into consideration the effective capacity of the plant, as per decision of the Hon'ble APTEL in its judgement dated 03.03.2009 in the matter of Appeal No. 96 of 2008, in case of UPRVUNL vs. UPERC & others.

3.10.3 PSPCL has further submitted that as per Regulation 10 of the PSERC Tariff

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

PSPCL has further submitted that as per these regulations, for the determination of generation tariff, the Commission is guided by the norms and principles as laid down in the CERC Tariff Regulations, 2009. Regulation 21 of the CERC Tariff Regulations, 2009 states that the recovery of fixed charges, inclusive of incentive payable shall be based on the Normative Annual Plant Availability Factor (NAPAF) for each station, and as per Regulation 26(i)(a), NAPAF for all thermal generating stations shall be 85%. PSPCL has also submitted the relevant extract of Regulation 21 of CERC Tariff Regulations, 2009.

To lay emphasis, PSPCL has quoted relevant para of the Hon'ble APTEL Judgment dated 18.10.2012, in Appeal Nos. 7 of 2011, 46 of 2011 and 122 of 2011. PSPCL has further quoted relevant paras of the Hon'ble APTEL Judgment dated 11.09.2014 in Appeal No. 174 of 2012. PSPCL has submitted that in compliance to the Hon'ble APTEL judgment, the information of segregation of costs amongst various functions as per Audited Accounts of FY 2015-16, has been submitted along with the Petition.

3.10.4 As discussed in detail in para 2.10.3, CERC has revised its Tariff Regulations and Regulation 30 of CERC Tariff Regulations, 2014and Regulation 30 (4) of CERC Tariff Regulations, 2014 specifies as under:

(4) Incentive to a generating station or unit thereof shall be payable at a flat rate of 50 paise/kWh for ex-bus scheduled energy corresponding to scheduled generation in excess of ex-bus energy corresponding to Normative Annual Plant Load Factor (NAPLF) as specified in regulation 36 (B).

3.10.5 It is evident from above that the incentive to a generating station or unit thereof is payable at a flat rate of 50 paise/kWh for ex-bus scheduled energy corresponding to scheduled generation in excess of ex-bus energy corresponding to Normative Annual Plant Load Factor (NAPLF), which is 85%. In Petition No. 33 of 2017 for true up of FY 2015-16, PSPCL has submitted PLF for GNDTP, GGSSTP and GHTP as 22.73%, 35.77% and 38.79% respectively. **As such, no incentive is payable for PSPCL's Thermal Generating Stations as per the regulations.**

3.11 Employee Cost

3.11.1 In the ARR Petition for FY 2015-16, PSPCL had projected employee cost of ₹5480.61 crore (net of capitalization of ₹170.00 crore), against which the Commission approved a sum of ₹4540.81 crore in the Tariff Order for FY 2015-16.

3.11.2 In the ARR Petition for FY 2016-17, PSPCL had revised the claim of employee cost to ₹4788.69 crore (net of capitalization of ₹204.37 crore) for FY 2015-16. The Commission approved the revised employee cost of ₹4572.59 crore in the Review of FY 2015-16 in Tariff Order for FY 2016-17.

3.11.3 In the True Up Petition of FY 2015-16, PSPCL has revised the claim of employee cost to ₹4397.99 crore, net of capitalization of ₹121.48 crore for FY 2015-16, based on Audited Annual Accounts of the PSPCL. The claim is also inclusive of ₹1841.44 crore on account of terminal benefits and ₹234.22 crore as BBMB share. In reply to the deficiency letter of the Commission, PSPCL vide memo no.632/ARR/Dy.CAO/ 247/True-Up 2015-16/Deficiency dated 06.07.2017 has clarified that ₹34.11 crore are related to LTC, encashment of earned leave & staff welfare expenses and are not part of terminal benefits. As such, the terminal benefits work out to ₹1807.33 (1841.44-34.11) crore. Accordingly, other employee cost works out to ₹2356.44 (4397.99-1807.33-234.22) crore.

3.11.4 The provisions of Regulation 28(3) of PSERC (Terms and Conditions for Determination of Tariff) Regulations, 2005 provide for determination of employee cost as under:

- O&M expenses as approved by the Commission for the year 2011-12 (true-up) shall be considered as base O&M expenses for determination of O&M expenses for the subsequent years.
- Terminal benefits including BBMB share on actual basis.
- Increase in 'other employee cost' limited to average increase in Wholesale Price Index and Consumer Price Index on base expenses of FY 2011-12.
- Exceptional increase in employee cost on account of pay revision etc. to be considered separately by the Commission.

As per above Regulations, terminal benefits and BBMB share of expenditure are to be allowed on actual basis.

In view of the above, terminal benefits amounting to ₹1807.33 crore and BBMB share of expenditure amounting to ₹234.22 crore are approved on actual basis as per Audited Annual Accounts of the Company for FY 2015-16.

3.11.5 The Commission vide notification No. 108 dated 15.10.2015, amended the Regulation relating to ‘Other Employee Cost’ which is applicable from the date of its publication i.e. from 16.10.2015. As per this amendment, inflation factor to be used for indexing the ‘Other Employee Cost’ will be combination of the Consumer Price Index (CPI) and Wholesale Price Index (WPI) of nth year and shall be calculated as 0.50*CPIn+0.50*WPIn.

The ‘Other Employee Cost’ in the true up for FY 2011-12 has been approved at ₹2099.07 crore in Para 5.10.4 of Tariff Order for FY 2014-15. Wholesale Price Index (all commodities) of 100 for FY 2011-12 has increased to 109.70 for FY 2015-16 thereby accounting for 9.70% increase in WPI. Consumer Price Index (CPI) increase is calculated @36.02% (index of base year 2011-12 increased from 194.83 to 265.00 in FY 2015-16. The combination of 0.50 of WPI+0.50 of CPI increase will be an increase of 22.86% [(9.70+36.02)/2] which is applicable from 16.10.2015.

For the period from 01.04.2015 to15.10.2015, it is pertinent to discuss the Hon’ble APTEL’s judgment dated 30.03.2015 in Review Petition No.6 of 2015, wherein the Hon’ble APTEL held that “*actual costs need to be considered*”, the Commission vide its Order dated 14.10.2015 decided that “*the Judgments of Hon’ble APTEL, in so far as Employee Cost for FY 2012-13, 2013-14, 2014-15 etc. of PSPCL and PSTCL is concerned, shall be implemented during true-up exercise of ARRs for these years after applying prudence check*”. As such, the Commission approves ‘Other Employee Cost’ of ₹1274.80 crore based on Audited Annual Accounts for the first 198 days of FY 2015-16 i.e. from 01.04.2015 to 15.10.2015.

By applying WPI and CPI combined increase @22.86% for 168 days (i.e. from 16.10.2015 to 31.03.2016) on ₹2099.07 crore approved for the base year FY 2011-12, the ‘Other Employee Cost’ works out to ₹1183.76 crore for the said period.

Accordingly, the total ‘Other Employee Cost’ from 01.04.2015 to 31.03.2016 works out to of ₹2458.56 (1183.76 + 1274.80) crore. However, as per Regulation 28, increase in all expenses of employee cost other than BBMB and terminal benefits is required to be limited to increase in WPI (all commodities). Accordingly, the Commission restricts the amount of ‘Other Employee Cost’ to ₹2356.44 crore in accordance with Audited Annual Accounts.

Thus, the Commission approves a total employee cost of ₹4397.99 (1807.33+2356.44+234.22) crore to PSPCL for FY 2015-16 based on Audited Annual Accounts.

3.12 Repair & Maintenance (R&M) Expenses

3.12.1 In the ARR Petition for FY 2015-16, the PSPCL had projected R&M expenses at ₹628.92 crore, against which the Commission approved ₹441.28 crore.

3.12.2 In the ARR Petition for FY 2016-17, PSPCL had revised R&M expenses to ₹616.99 crore, against which the Commission approved the revised ₹419.56 crore as R&M expenses for FY 2015-16.

3.12.3 In the True Up Petition for FY 2015-16, PSPCL has claimed R&M expenses of ₹565.27 crore on normative bases. As per Audited Annual Accounts of FY 2015-16, R&M expenses for the year are ₹386.83 crore, which includes cost of water, lubricants, consumable stores & station supplies of ₹25.52 crore.

3.12.4 Regulation 28of the PSERC Tariff Regulations, 2005 amended on 17.09.2012 provides for adjusting base O&M expenses approved by the Commission for FY 2011-12 in proportion to increase in Whole Sale Price Index (all Commodities) to determine O&M expenses for subsequent year. The Commission in Tariff Order 2014-15 approved ₹320.67 crore for FY 2011-12 on Gross Fixed Assets of ₹39215.89 crore as on 01.04.2012. Therefore, base R&M expenses for FY 2015-16 work out to ₹363.41 (320.67/39215.89*44442.11) crore. By applying WPI increase @9.70% on the base R&M expenses of ₹363.41 crore, the R&M expenses work out to ₹398.66 (₹363.41*109.70/100) crore for FY 2015-16.

3.12.5 In the Audited Annual Accounts for FY 2015-16, PSPCL has disclosed capitalization of assets worth ₹2013.64 crore during FY 2015-16. These are being taken for calculating allowable R&M expenses for FY 2015-16. Since details regarding commissioning/ capitalization of the assets added during FY 2015-16 are not available in the accounts as well as the ARRs of the utility, R&M expenses for these assets are being considered assuming that these assets remained in service for six months on an average during FY 2015-16. Average percentage rate of R&M expenses of ₹398.66 crore for assets of ₹44442.11 crore as on 01.04.2015 works out to 0.90% (398.66/44442.11*100) for PSPCL. By applying the average rate of 0.90% on addition of assets of ₹2013.64 crore for half year, the R&M expenses for the fixed assets added during the year work out to ₹9.06 crore. Thus, normative R&M expenses for FY 2015-16 for PSPCL work out to ₹407.72 (398.66+9.06) crore for FY 2015-16.

As per Regulation 28, the base O&M expenses shall be adjusted according to variation in WPI over the year to determine the O&M expenses of subsequent years. The relevant extract from the regulation is quoted below:

'… Base O&M expenses (except employee cost) as above ***shall be adjusted*** *according to variation in the average rate (on monthly basis) of Wholesale Price Index (all commodities) over the year to determine the O&M expenses for subsequent years…'*

Thus, the Commission limited the Repair and Maintenance expenses to ₹386.83 crore as per Audited Annual Accounts of FY 2015-16. **Accordingly, the Commission approves R&M expenses of ₹386.83 crore for FY 2015-16 to PSPCL.**

3.13 Administrative and General (A&G) Expenses

3.13.1 In the ARR Petition for FY 2015-16, PSPCL had projected A&G expenses at ₹191.69 crore, against which the Commission approved ₹144.94 crore in the Tariff Order for FY 2015-16.

3.13.2 In the ARR Petition for FY 2016-17, PSPCL had revised the A&G expenses for FY 2015-16 to ₹188.63 crore, against which the Commission approved the revised ₹138.36 crore as A&G expenses for FY 2015-16 in the Tariff Order for FY 2016-17.

3.13.3 In the True Up Petition for FY 2015-16, PSPCL has claimed A&G expenses of ₹164.29 crore on normative basis. Actual A&G expenses as per Audited Annual Accounts are of ₹186.11 crore (net of capitalization cost of ₹21.28 crore). These include annual license fee of ₹12.51 crore and audit fees of ₹0.21 crore. In addition to above, ₹0.54 crore paid to M/s Mercadoz, shown under power purchase cost, are also to be considered in A&G expenses.

3.13.4 In the Petition, PSPCL has submitted that donation amounting to₹5 crore is made to Director/Cultural Affairs, Punjab as an initiative towards corporate and social responsibility. As the Commission is allowing A&G expenses as per PSERC (Terms and Conditions for determination of Tariff) Regulations, 2005, so the aforesaid contributions of ₹5.00 crore claimed by PSPCL should be meted out of profit, if any earned by PSPCL during FY 2015-16 and not passed on to the consumers. Accordingly, actual A&G expenses work out to ₹181.65 (186.65-5.00) crore.

3.13.5 The Commission in Tariff Order 2014-15 approved ₹97.12 crore for FY 2011-12 on Gross Fixed Assets of ₹39215.89 crore as on 01.04.2012. The Gross Fixed Assets as on 01.04.2015 are to the tune of ₹44442.11 crore. Therefore, base A&G expenses for FY 2015-16 work out to ₹110.06 (97.12/39215.89*44442.11) crore. By applying WPI increase @9.70% on the base A&G expenses of ₹110.06 crore, the A&G expenses works out to ₹120.74 (110.06*109.70/100) crore for FY 2015-16.

3.13.6 In the Audited Annual Accounts for FY 2015-16, PSPCL has disclosed capitalization of assets worth ₹2013.64 crore during FY 2015-16. These are being taken for calculating allowable A&G expenses for FY 2015-16. Since details regarding commissioning/ capitalization of the assets added during FY 2015-16 are not available in the accounts as well as the ARRs of the utility, A&G expenses for these assets are being considered assuming that these assets remained in service for six months on an average during FY 2015-16. Average percentage rate of A&G expenses of ₹120.74 crore for assets of ₹44442.11 crore as on 01.04.2015 works out to 0.27% (120.74/44442.11*100) for PSPCL. By applying the average rate of 0.27% on addition of assets of ₹2013.64 crore for half year, the base A&G expenses for the fixed assets added during the year work out to ₹2.72 crore. Thus, A&G expenses for FY 2015-16 for PSPCL work out to ₹123.46 (120.74+2.72) crore. After adding ₹12.51 crore on account of License Fee & ARR fee and ₹0.21 crore on account of Audit fee, the allowable A&G expenses work out to ₹136.18 (123.46+12.51+0.21) crore against A&G expenses of ₹164.29 crore as claimed by PSPCL.

The Commission approves A&G expenses of ₹136.18 crore for FY 2015-16 for PSPCL.

3.13.7 In the foregoing paras, O&M expenses (Employee cost, R&M expenses and A&G expenses) of ₹4921.00 (4397.99+386.83+136.18) crore have been approved, wherein share of BBMB expenditure as claimed by PSPCL i.e. ₹261.75 (₹234.22 crore Employees expenses + ₹22.60 crore R&M expenses + ₹4.93 crore A&G expenses) crore in the ARR has been allowed. In petition no. 251/GT/2013 filed by BBMB before Central Electricity Regulatory Commission (CERC) for approval of Tariff of its generating stations and transmission systems, CERC vide its Order dated 12.11.2015 has allowed O&M expenses in respect of transmission assets for the period 2009-14.CERC vide order dated 21.03.2016 also determined the Tariff for generating stations of BBMB.

Based on CERC's order, the State Commission determined allowable O&M expenses to BBMB for FY 2013-14 as ₹106.82 crore as per Table 3.9 of Tariff Order for FY 2016-17. CERC has not determined O&M expenses of BBMB for FY 2014-19 so far. The Commission had decided that allowable O&M expenses at the level determined by CERC for FY 2013-14 were to be allowed for subsequent years.

BBMB filed an appeal no. 251 of 2016 before the Hon'ble APTEL challenged the Tariff Order of FY 2016-17. APTEL vide its order dated 28.11.2016 gave directions to the State Commission to hear the Appellant as well as respondent there in and pass a reasoned order. The Commission in compliance to the directions of the Hon'ble APTEL, initiated proceedings vide petition no. 80 of 2016. After hearing the Appellant as well as respondent, the Commission issued an order dated 11.02.2017. BBMB again challenged the order dated 11.02.2017 vide its appeal no. 94 of 2017 and I.A. 652 of 2017 before the Hon'ble APTEL. The Hon'ble APTEL in its decision dated 06.09.2017 set aside both the orders of Commission and decided as under:

> *"We are of the considered opinion that the issues raised in both the Appeals have merits as discussed above. These Appeals are hereby allowed. The Impugned Orders dated 27.07.2016 and 11.02.2017 as passed by the State Commission are hereby set aside. The State Commission is hereby directed to pass consequential order within a period of 3 months".*

As per directions of the Hon'ble APTEL, consequential order of the Commission will be issued in due course. In the meantime, 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.

Thus, O&M expenses of ₹4766.07 (4397.99+386.83+136.18-154.93) crore are approved to PSPCL for FY 2015-16.

3.14 Depreciation Charges

3.14.1 In the ARR Petition for FY 2015-16, PSPCL projected depreciation charges of ₹1055.36 crore against which the Commission approved depreciation charges of ₹764.63 crore.

3.14.2 In the ARR Petition of FY 2016-17, PSPCL had revised its claim for depreciation charges to ₹1016.72 crore against which the Commission approved the revised depreciation charges of ₹991.87 crore for FY 2015-16.

3.14.3 The Gross Fixed Assets as on 01.04.2015 are to the tune of ₹25514.19 crore (net of land and land rights). There is an addition of ₹2004.39 crore (net of land and land rights) to Gross Fixed Assets due to capitalization of assets during FY 2015-16. Thus, closing balance of Fixed Assets as on 31.03.2016 is ₹27518.58 (net of land and land rights) crore.

3.14.4 In the True Up Petition for FY 2015-16, PSPCL has claimed ₹1046.80 crore as depreciation charges as per Audited Annual Accounts.

The Commission approves the depreciation charges of ₹1046.80 crore for FY 2015-16 based on Audited Annual Accounts.

3.15 Interest and Finance Charges

3.15.1 In the ARR Petition for FY 2015-16, PSPCL claimed Interest and Finance Charges of ₹2593.14 crore, against which the Commission approved an amount of ₹1833.15 crore for FY 2015-16.

3.15.2 In the ARR Petition for FY 2016-17, PSPCL revised the Interest and Finance Charges for FY 2015-16 to ₹2809.19 crore against which the Commission approved the revised Interest and Finance Charges of ₹1666.98 crore for PSPCL for FY 2015-16.

3.15.3 In the True Up Petition for FY 2015-16, PSPCL has claimed the Interest and Finance Charges of ₹2880.61 crore for FY 2015-16, based on Audited Annual Accounts, as detailed in Table 3.9.

Table 3.9: Interest & Finance Charges claimed by PSPCL for FY 2015-16

(₹crore)

Sr. No.	Description	Interest and Finance as depicted in ARR Petition
I	II	III
1.	Interest on Institutional Loans	1078.63
2.	Interest on RBI Bonds / GoP Loans	1.38
3.	Interest on GPF	162.73
4.	Guarantee fees	90.93
5.	Interest on Consumers Security Deposit	192.06
6.	Other Bank Interest/Charges	89.13
7.	**Total**	**1614.86**
8.	Interest on Working Capital Loan (WCL)	1648.44
9.	**Total**	**3263.30**
10.	Less: Capitalization	382.69
11.	**Net Interest and Finance Charges**	**2880.61**

The Interest and Finance Charges allowable to PSPCL are discussed in the ensuing paragraphs.

3.15.4 **Investment Plan / Interest and Finance Charges**

The Commission in its Tariff Order for FY 2015-16 approved an Investment Plan of ₹2000.00 crore against projected capital expenditure of ₹3328.00 crore. In the ARR Petition for FY 2016-17, the Commission approved the revised capital investment of

₹1600.00 crore for FY 2015-16 against revised estimates of ₹2820.75 crore as claimed by PSPCL.

As per Audited Annual Accounts for FY 2015-16, the opening Capital Work in Progress as on 01.04.2015 is ₹1701.64 crore. Net asset addition during FY 2015-16 is of ₹2013.64 crore. Closing balance of Capital Work in Progress as on 31.03.2016 is of ₹1656.25 crore.

The opening long-term loan as per PSPCL's Petition is ₹10684.59 crore, which includes loan of ₹16.24 crore on account of RBI Bonds and ₹2002.90 crore on account of GPF liability. Similarly, loan addition of ₹11596.25 crore includes ₹1.38 crore on account of RBI Bonds and ₹9859.72 crore on account of loans converted as bonds by PSPCL under UDAY Scheme. The loans converted under UDAY scheme are not utilized for funding of capital expenditure and are thus excluded from long term loans. Moreover, there is no fresh loan addition to on account of loans under UDAY Scheme. Also, loans relating to RBI Bonds and GPF Liability are discussed separately in ensuing paragraphs. Accordingly, long term loan balances (opening, loan addition, repayment, closing balances and interest thereon) excluding loans related to RBI Bonds, GPF loans and loans under UDAY Scheme are worked out in Table 3.10 (A).

Table 3.10: (A) Long term loan claimed by PSPCL (Except UDAY Scheme, RBI Bonds and GPF Liability) for FY 2015-16.

(₹crore)

Particulars	Long term Loan claimed by PSPCL	Amount of loan Relating to UDAY Scheme	Amount of loan relating to RBI Bonds	Amount Relating to GPF liability	Balance long term loans
Opening balance as on 01.04.2015	10684.59	-	16.24	2002.90	8665.45
Loan addition during 2015-16	11596.25	9859.72	1.38	-	1735.15
Loan re-payment during 2015-16	1472.28	-	-	-230.02	1242.26
Closing balance as on 31.03.2016	20808.56	9859.72	17.62	1772.88	9158.34
Interest on loans for FY 2015-16	1242.74	3.65	1.38	162.73	1074.98

Loan addition of ₹1735.15 crore includes loan of ₹11.42 crore relating to R-APDRP (Part-A) Schemes, which is to be converted into Grants once the required conditions are achieved and verified by an independent agency appointed by the Ministry of Power. The Commission observes that no interest is being paid by PSPCL while interest liability is being provisioned in the books of PSPCL. In its reply to deficiencies vide memo no.632/ARR/Dy.CAO/247/True Up 2015-16/Deficiency dated 06.07.2017, PSPCL has submitted that out of the total R-APDRP loans of ₹29.86 crore, loans amounting to ₹11.42 crore relate to R-APDRP (Part-A) Schemes. The Commission, therefore, decides to disallow this loan amount of ₹11.42 crore and approves loan amount of ₹1723.73 (1735.15-11.42) crore for the purpose of determination of tariff. The Commission during the true up of FY 2014-15 (in Table 2.11) had approved closing balance of ₹8267.32 crore as loans as on 31.03.2015 (other than WCL, GP Fund and GoP loans). Considering the opening balance of ₹8267.32 crore for FY 2015-16, the interest on loans (other than WCL, GP Fund, AP DRP-A scheme and GoP) works out to ₹1026.27 crore in Table 3.10 (B).

Table 3.10 (B): Interest on Loans (Other than WCL and GoP Loans) for FY 2015-16

(₹crore)

Sr. No.	Particulars	Loans as on April 01,2015	Receipt of Loans during FY 2015-16	Repayment of Loans during FY 2015-16	Loans as on March 31,2016	Amount of Interest
I	II	III	IV	V	VI	VII
1.	As per data furnished in ARR Petition (other than WCL and GoP Loans)	8665.45	1735.15	1242.26	9158.34	1074.98
2.	Approved by the Commission (other than WCL, GP Fund ,GoP Loans and R- APDRP-A Scheme, UDAY Scheme)	8267.32	1723.73	1242.26	8748.79	1026.27

3.15.5 **Interest on GoP Loans / RBI Bonds**

In the True Up Petition for FY 2015-16, PSPCL has claimed ₹1.38 crore as interest on account of RBI Bonds for FY 2015-16. **The Commission, approves interest charges towards RBI Bonds of ₹1.38 crore for FY 2015-16.**

3.15.6 **Interest on General Provident Fund (GPF)**

PSPCL has claimed interest of ₹162.73 crore (at 8.70%) on GPF accumulations based on Audited Annual Accounts for FY 2015-16.**Therefore, the interest of ₹162.73 crore on GP Fund, being a statutory payment, is allowed as claimed by PSPCL for FY 2015-16.**

3.15.7 **Finance Charges**

PSPCL has claimed finance charge of ₹180.06 crore which includes guarantee fees based on Audited Annual Accounts for FY 2015-16. The claim also includes ₹80.26 crore on account of ‘Carrying cost allowed by PSERC passed on to GoP’. Since the carrying cost is separately dealt in the Tariff Order, the same is excluded from finance charges. Accordingly, **the Commission approves the finance charges of ₹99.80 (180.06-80.26) crore based on Audited Annual Accounts for FY 2015-16.**

3.15.8 **Interest on Consumer Security Deposits**

In the True Up Petition for FY 2015-16, PSPCL has claimed ₹192.06 crore towards interest on consumer security deposits on the basis of Audited Annual Accounts for FY 2015-16. **The Commission allows the interest of ₹192.06 crore on Consumer Security Deposit based on Audited Annual Accounts of FY 2015-16.**

3.15.9 **Capitalization of Interest Charges**

In the True Up Petition of FY 2015-16, PSPCL has claimed ₹382.69 crore towards capitalization of interest charges based on Audited Annual Accounts for FY 2015-16. **The Commission, as per past practice, approves capitalization of interest of ₹382.69 crore for FY 2015-16 based on Audited Annual Accounts.**

3.15.10 **Interest on Working Capital**

In the Tariff Order for FY 2015-16, the Commission approved working capital of ₹3829.75 crore with interest cost of ₹448.46 crore. In the Tariff Order for FY 2016-17, the Commission approved interest of ₹315.86 crore on working capital of ₹2737.07 crore.

In the true Up Petition of FY 2015-16, PSPCL has claimed ₹1648.44 crore as interest on working capital borrowings for FY 2015-16, based on audited financials. The Commission has determined the working capital requirement in accordance with Regulation 30 of PSERC Tariff Regulations. The details of working capital requirement and allowable interest thereon are depicted in Table 3.11.

Table 3.11: Interest on Working Capital Requirement for FY 2015-16

(₹crore)

Sr. No	Particulars	Amount
I	II	III
1.	Fuel Cost for two months	402.53
2.	Operation and Maintenance expenses for one month	397.17
3.	Receivables for two months	3928.20
4.	Maintenance Spares @15% of O&M expenses	714.91
5.	Less: Consumer security deposit	2752.99
6.	Total working capital required	2689.82
7.	Interest rate (calculated on weighted average)	11.31%
8.	**Interest on Working Capital Loan**	**304.22**

The Commission, accordingly, approves interest of ₹304.22 crore on Working Capital Requirements for FY 2015-16.

In view of above, the interest and finance charges are approved as under:

Table 3.12: Interest and Finance Charges for FY 2015-16

(₹crore)

Sr. No.	Particulars	Loans as on April 01, 2015	Receipt of Loans during FY 2015-16	Re-payment of Loans during FY 2015-16	Loans as on March 31, 2016	Interest Approved by Commission
I	II	III	IV	V	VI	VII
1.	Approved by the Commission (Other than WCL and GoP Loans	8267.32	1723.73	1242.26	8748.79	1026.27
2.	GoP Loans / RBI Bonds	16.24	1.38	-	17.62	1.38
3.	Interest on GPF	2002.90	-	230.02	1772.88	162.73
4.	Finance Charges	-	-	-	-	99.80
5.	Interest on Consumer Security Deposits	2539.96	213.02	-	2752.98	192.06
6.	Gross Interest and Finance Charges	-	-	-	-	**1482.24**
7.	Less: Capitalization	-	-	-	-	-382.69
8.	Net Interest and Finance Charges (6-7)	-	-	-	-	1099.55
9.	Interest on Working Capital	-	-	-	-	304.22
10.	**Total Interest**	**12826.42**	**1938.13**	**1472.28**	**13292.27**	**1403.77**

The Commission, accordingly, approves the interest and finance charges of ₹1403.77 crore for PSPCL for FY 2015-16.

3.16 Return on Equity

3.16.1 In the ARR and Tariff Petition for FY 2015-16, PSPCL claimed the Return on Equity of ₹942.62 crore on base equity of ₹6081.43 crore against which the Commission had approved RoE of ₹942.62 crore to PSPCL.

3.16.2 In the ARR and Tariff Petition for FY 2016-17, PSPCL had claimed ₹942.62 crore as RoE for FY 2015-16, against which the Commission approved RoE of ₹942.62 crore.

3.16.3 In the True Up Petition for FY 2015-16, PSPCL has claimed RoE of ₹942.62 crore @ 15.5% on Govt. equity holding of ₹6081.43 crore.

3.16.4 In accordance with the PSERC Tariff Regulations, the Commission allows RoE of ₹942.62 crore @15.5% on the equity of ₹6081.43 crore.

The Commission, thus, approves RoE of ₹942.62 crore to PSPCL for FY 2015-16.

3.17 Subsidy payable by GoP

As per Audited Annual Accounts for FY 2015-16, total subsidy of ₹5760.70 crore has been booked by the PSPCL. However, GoP paid subsidy of ₹4847.00 crore during FY 2015-16 to PSPCL. The subsidy payable by GoP is trued up as under:

AP Consumption: The Commission has considered AP consumption at 10793.71 MU, on which revenue @458 paise per unit works out to ₹4943.52 crore. The amount of revenue from AP consumption after adding expenses of ₹13.64 crore on account of fuel cost adjustment for FY 2015-16 is worked out as ₹4957.16 crore and the same is allowed.

Scheduled Caste (SC) Domestic Supply (DS) Consumers: The Commission notes that GoP decided to give free supply of power upto 200 units to Scheduled Caste DS consumers with a connected load up to 1000 watts. PSPCL has claimed subsidy of ₹1053.07 crore inclusive of meter rentals of ₹15.74 crore and the same is allowed.

Non-SC Below Poverty Line (BPL) DS Consumers: GoP also decided to give free supply of power up to 200 units per month to Non-SC BPL DS consumers with connected load up to 1000 watts. PSPCL has claimed subsidy of ₹70.28 crore, inclusive of meter rentals of ₹1.25 crore and the same is allowed.

Interest on delayed payment of subsidy: The GoP has paid subsidy due to PSPCL in FY 2015-16 in staggered installments. The Commission observed that there was delay in payment of subsidy to PSPCL in FY 2015-16. With a view to compensating PSPCL on this account, the Commission levies interest on the delayed payment of subsidy @11.31% (effective rate of interest on loans) which works out to ₹109.60 crore and the same is allowed.

Accordingly, the subsidy payable for FY 2015-16, inclusive of interest on delayed payment of subsidy, has been determined by the Commission at ₹6190.11 (4957.16+1053.07+70.28+109.60) crore against which GoP had paid subsidy of ₹4847.00 crore. As such, there is shortfall subsidy of ₹1343.11 (6190.11-4847.00) crore during FY 2015-16. This has been carried forward to para 9.4.

3.18 Prior Period Expenses

3.18.1 In the True Up Petition for FY 2015-16, PSPCL has disclosed net prior period expense of ₹35.47 crore, which includes prior period income of ₹19.73 crore and prior period expenses of₹55.20 crore.

In the details of prior period income, ₹3.34 crore is on account of “excess provision for depreciation” and ₹1.17 crore on account of ‘excess provision for interest and finance charges’. Similarly, in the details of prior period expense, ₹2.05 crore is on account of ‘operating expenses’; ₹46.70 crore on account of “depreciation unprovided in previous years”; ₹1.12 crore on account of ‘Interest and Finance Charges’; ₹1.50 crore on account of ‘Administrative Expenses Previous Years’ and ₹0.76 crore on account of ‘Freight and other Purchase related expenses’. These prior period income/expense items have been separately calculated/dealt with by the Commission. Accordingly, net prior period income and expense works out to ₹15.22 (19.73-3.34-1.17) crore and ₹3.07 (55.20-2.05-46.70-1.12-1.50-0.76) crore respectively.

Under the head of Power Purchase Cost, PSPCL has claimed ₹293.61 crore relating to previous payments made during FY 2015-16. On a query from the Commission, PSPCL vide its letter No. 1178 dated 23.12.2016 has intimated the details of expenses. As per detail an amount of ₹293.61 crore relates to adjustment of prior period power purchase bills, the Commission allows ₹293.61 crore as prior period expenses.

As such, the Commission determines the Net Prior Period expense after adjustment of Prior Period income as ₹281.46 (293.61+3.07-15.22) crore. Accordingly, the Commission approves Net Prior Period expenses ₹281.46 crore for FY 2015-16.

3.19 Other Debits and extraordinary items

The Audited Annual Accounts of the PSPCL for FY 2015-16 depict ‘other debits’ as ₹36.07 crore.

Therefore, the Commission allows other debits and extraordinary items of ₹36.07 crore for FY 2015-16.

3.20 Transmission Charges payable to PSTCL

The Commission, in its Tariff Order of PSTCL for MYT Control Period, determined ₹1162.78 crore as the Transmission charges payable to PSTCL by PSPCL for FY 2015-16. **Accordingly, this amount is being included in the ARR of PSPCL for FY 2015-16 as Transmission charges.**

3.21 Non-Tariff Income

3.21.1 In the ARR and Tariff Petition for FY 2015-16, PSPCL projected non-tariff income of ₹997.57 crore against which the Commission had approved ₹964.30 crore. In the ARR Petition for FY 2016-17, PSPCL revised the non-tariff income to ₹806.33 crore for FY 2015-16 against which the Commission had approved ₹985.11 crore for FY 2015-16 in the Tariff Order for FY 2016-17.

3.21.2 In True Up Petition for FY 2015-16, PSPCL has submitted Non-Tariff Income of ₹843.95 crore based on Audited Annual Accounts for FY 2015-16. This excludes an amount of ₹80.30 crore on account of late payment surcharge and ₹70.11 crore on account of rebate for timely payment for power purchase.

Non-Tariff Income for FY 2015-16 as claimed by PSPCL

(₹crore)

Sr. No.	Particulars	Projected by PSPCL in the ARR
1.	Meter/service rent	90.49
2.	Late Payment Surcharge	80.30
3.	Theft & pilferage of energy	51.30
4.	Misc. Receipts	321.60
5.	Misc. Charges (expect PLEC)	14.24
6.	Wheeling charges	339.46
7.	Interest on staff loans & advance	67.00
8.	Income from trading	8.00
9.	Income staff welfare activities	0.05
10.	Excess on verification	-
11.	Investments & bank balances	15.88
12.	Gain on sale of asset	0.01
13.	Total income	988.33
14.	BBMB income	6.03
15.	**Total non-tariff income**	**994.36**
16.	**Less late payment surcharge**	**80.30**
17.	**Less Rebate for timely Payment of Power Purchase**	**70.11**
18.	**Net Non-tariff income**	**843.95**

In the petition, PSPCL has prayed that the late payment surcharge be not treated as part of the Non-Tariff Income as PSPCL's working capital requirements are being determined as per norms and there is no compensation to the PSPCL on account of interest accrued on delayed payments against bills issued and including the Late Payment Surcharge in Non-Tariff/ Other Income adversely impacts the cash flow position of the PSPCL. The Commission observes that receipts on account of Late Payment Surcharge are to be treated as Non-Tariff Income as per Regulation 34 of PSERC (Terms and Conditions for Determination of Tariff) Regulations, 2005. Moreover, interest on working capital is allowed to the utility on normative basis notwithstanding that the licensee has not taken working capital loan from any outside agency or has exceeded the working capital loan amount worked out on normative basis. So, the plea of the utility not to treat the late payment surcharge as part of the Non-Tariff Income finds no merit.

As such, the Non-Tariff Income works out to ₹994.36 (843.95+80.30+70.11) crore. **The Commission accordingly, approves Non-Tariff Income of ₹994.36 crore for FY 2015-16.**

3.22 Revenue from sale of power

3.22.1 The Commission approved the Revenue from existing tariff at ₹25160.48 crore for FY 2015-16 in the Tariff Order for FY 2015-16. In the review of FY 2015-16, the revenue from sale of power was approved at ₹23006.12 crore vide Tariff Order for FY 2016-17.

In the True Up Petition for FY 2015-16, PSPCL has submitted revenue from sale of power at ₹23073.67 crore being actual as per audited accounts.

The Commission, approves the revenue from sale of power as ₹23116.64 crore for FY 2015-16 as detailed in Table 3.13.

Table 3.13: Revenue from Sale of Power for FY 2015-16

(₹crore)

Sr. No.	Description	Actual as per Audited Annual Accounts		As approved by the Commission	
		Energy Sale (MU)	Revenue (₹crore)	Energy Sale (MU)	Revenue including MMC and FCA (₹crore)
I	II	III	IV	V	VII
1.	Domesticincluding others	12108.24	6439.95	12108.24	6439.95
2.	Non-Residential Supply	3518.24	2193.47	3518.24	2193.47
3.	Public Lighting	202.82	123.72	202.82	123.72
4.	Industrial Consumers	-	-	-	-
a)	Small Power	951.61	564.47	951.61	564.47
b)	Medium Supply	2111.44	1282.75	2111.44	1282.75
c)	Large Supply	10087.13	6588.77	10087.13	6588.77
5.	Bulk Supply (HT & LT)	661.19	392.45	661.19	392.45
6.	Railway Traction	165.64	114.77	165.64	114.77
7.	Common Pool	294.51	135.31	294.51	135.31
8.	Outside State	137.07	29.55	52.66	29.55
9.	Agricultural Supply (AP)	11523.34	4637.37	10793.71	4957.16
10.	Add: Recovery for theft of power/Malpractices, PLEC and Misc. charges*	-	569.43	-	569.43
11.	Less: HV rebate, ToD rebate/surcharge, rebate due to increase metered sale	-	(-)275.16	-	(-)275.16
12.	SOP recognised by PSERC	-	276.82	-	-
13.	**Grand Total**	**41761.23**	**23073.67**	**40947.19**	**23116.64**

*it includes MMC

3.23 True up of ARR for FY 2015-16

In view of the above analysis, the trued-up revenue requirement for FY 2015-16 is as per details given in Table 3.14.

Table 3.14: Revenue Requirement for FY 2015-16

(₹crore)

Sr. No	Item of Expense	Approved in the Tariff Order for FY 2015-16	Proposed by PSPCL in RE	Approved by the Commission in Review	PSPCL claim based on Audited Annual Accounts	Finally approved by the Commission
I	II	III	IV	V	VI	VII
1	Cost of Fuel	5160.21	4357.94	2407.85	2782.84	2415.17
2	Cost of Power Purchase	11147.06	12184.50	12506.54	13042.47	12663.31
3	Employee Cost	4540.81	4788.69	4572.59	4397.99	4397.99
4	R & M Expenses	441.28	616.99	419.56	565.27	386.83
5	A & G Expenses	144.94	188.63	138.36	164.29	136.18
6	Recoverable O&M expenses from BBMB as per CERC ordersdated 12.11.2015 and 21.03.2016			(-)175.76		(-)154.93
7	Depreciation	764.63	1016.72	991.87	1046.80	1046.80
8	Interest & Finance Charges	1833.15	2809.19	1666.98	2880.61	1403.77
9	Return on Equity	942.62	942.62	942.62	942.62	942.62
10	Provision for DSM Fund	10.00				
11	Transmission and SLDC Charges payable to PSTCL	967.62	954.45	1131.72	967.65	1162.78
12	RSD Charges payable to GoP		20.20	20.20		
13(a)	Net Prior Period Income/Expenses			214.51	35.47	281.46
13(b)	Other Debits and Extra Ordinary Items				36.07	36.07
13(c)	Disincentive on account of higher T&D losses					-175.80
13(d)	Incentive/disincentive on account of higher/lower availability of Thermal Generating Stations	--	--	--	--	--
13(e)	Capitalisation of Cost of Generation during Trial run	--	--	--	--	--
14	**Total Revenue Requirement**	**25,952.32**	27879**.93**	**24837.04**	**26862.08**	**24542.25**
15	Less: Non-Tariff Income	964.30	806.33	985.11	994.36	994.36
16	**Net Revenue Requirement**	**24988.02**	**27073.60**	**23851.93**	**25867.72**	**23547.89**
17	Revenue from Existing Tariff	25160.48	23871.16	23006.12	23073.67	23116.64
18	Less: Impact of Rebate to consumers catered at higher voltages/ ToD Tariff/ ToD rebate of adjusting PLEC /Rebate due to increases metered sales/ Rebate of 7.5% in view of APTEL judgement	321.65			—*	—*
19	**Net revenue from Existing Tariff**	**24861.35**	**23871.16**	**23006.12**	**23073.67**	**23116.64**
20	Less: Disallowances due to non-achievement of milestones	--	--	--	--	--

Sr. No	Item of Expense	Approved in the Tariff Order for FY 2015-16	Proposed by PSPCL in RE	Approved by the Commission in Review	PSPCL claim based on Audited Annual Accounts	Finally approved by the Commission
I	II	III	IV	V	VI	VII
21	Gap {Surplus (+)/Deficit (-)} for FY 2015-16	(-)126.67	(-)3202.44	(-)845.81	(-)2794.05	(-) 431.25
22	Carrying cost for the year				(-)413.18	
23	Gap {Surplus (+) /Deficit (-)} up to FY 2014-15 (as per Table 2.15 of this Tariff Order					(+) 748.62
24	Carrying Cost on Previous Years Gaps [Charges (+) / Recover (-)]				(-)192.53	
25	**Net Gap {Surplus(+) / Deficit (-)}up to FY 2015-16**				**(-)3399.76**	**(+)317.37**

**Already included in Table 3.13*

Net revenue gap (surplus) of ₹317.37 crore upto FY 2015-16 as determined above, which has been carried over to Table 4.25of this Tariff Order.

Chapter 4
Review for FY 2016-17

4.1 Background

PSPCL, in its petition relating to Review for FY 2016-17, has estimated the energy sales, operating parameters, generation, expenditure for generation & distribution and revenue for FY 2016-17, based on actual energy sales, generation, expenditure and revenue for the first half (April, 2016 to September, 2016) of FY 2016-17 and estimated performance for the remaining part of the year. PSPCL has now provided the revised estimates of energy sales, generation, expenditure and revenue for FY 2016-17.

The Commission has analyzed the energy sales, energy generation and components of expenditure and revenue in the Review for FY 2016-17 in this chapter.

4.2 Energy Demand (Sales)

4.2.1 Metered Energy Sales

The Commission in the Tariff Order for FY 2016-17 approved metered energy sales within the State at 33032 MU, same as projected by PSPCL in the ARR for FY 2016-17.

PSPCL has estimated energy sales of metered categories for FY 2016-17 on the basis of actuals for the first six months (April, 2016 to September, 2016) and by applying category-wise half-yearly 3 years compounded annual growth rate (CAGR) of second half of the period from FY 2012-13 to FY 2015-16, to the corresponding provisional category-wise energy sales in the second half of FY 2015-16. PSPCL has further submitted that for the projection of energy sales to Large Supply industrial category, the impact of Commission's order dated August 11, 2016 has been considered, as the open access energy sales for the month of September, 2016 have shown reduction of 86.59% with reference to open access energy sales during September, 2015, and assuming the same reduction during the second half, the energy sales to Large Supply industrial category have been projected. PSPCL's submissions regarding energy sales to Large Supply industrial category and the worked out estimated sales to metered categories is detailed in Table 4.1.

Table 4.1: Estimated Metered Energy Sales for FY 2016-17

(MU)

Sr. No.	Category	Sales during 2nd half of FY 2012-13	Sales during 2nd half of FY 2015-16	3 year CAGR during 2nd half of FY 2012-13 to 2nd half of FY 2015-16	Sales during 1st half of FY 2016-17 (actual)	Estimated sales during 2nd half of FY 2016-17 (IV+IV*V)	Estimated sales for FY 2016-17 (VI+VII)
I	**II**	**III**	**IV**	**V**	**VI**	**VII**	**VIII**
1.	Domestic	4433.43	5450	7.12%	7434	5838	13272
2.	Non-Residential	1288.00	1651	8.62%	2086	1793	3879
3.	Small Power	450.00	469	1.38%	513	475	988
4.	Medium Supply	925.00	1074	5.09%	1076	1129	2205
5.	Large Supply	4726.00	5040	2.17%	5050	5959 *	11009 *
6.	Public Lighting	83.00	117	12.02%	99	131	230
7.	Bulk Supply	280.00	335	6.20%	353	356	709
8.	Railway Traction	66.00	78	5.93%	92	83	175
9.	**Total Metered sales**	**12251.43**	**14214**		**16703**	**15764**	**32467**

*including impact of reduction in open access energy sales.

On query from the Commission vide letter no. 867 dated 01.09.2017, PSPCL vide letter no.742 dated 04.09.2017 submitted the sales figures for FY 2016-17.The Commission has retained sales to common pool consumers at 305.62 MU as submitted by PSPCL vide letter dated 04.09.2017. PSPCL has submitted Outside State sale during FY 2016-17 as 109.18 MU, comprising of 52.92 MU of HP royalty in Shanan and 56.96 MU as HP share (free) in RSD. However, the Commission considers the Outside State sale as 52.92 MU, after excluding the HP share (free) in RSD. The HP share (free) in RSD has been taken into consideration while working net generation from PSPCL's own hydel generating stations, in para 4.5.2

The metered energy sales projected by PSPCL in the ARR for FY 2016-17, approved by the Commission in the Tariff Order for FY 2016-17, the revised estimates furnished by PSPCL in the ARR for MYT Control Period from FY 2017-18 to FY 2019-20 (this Petition), submitted by PSPCL vide letter no. 742 dated 04.09.2017 and energy sales now revised by the Commission for FY 2016-17, are given in Table 4.2.

Table 4.2: Metered Energy Sales approved for FY 2016-17

(MU)

Sr. No.	Category	Projected by PSPCL in ARR for FY 2016-17	Approved by the Commission in T.O. for FY 2016-17	Revised Estimates submitted by PSPCL in the ARR	Submitted by PSPCL vide letter no. 742 dated 04.09.2017	Now revised by the Commission
I	II	III	IV	V		VII
1.	Domestic	13528.62	13528.62	13272	13080.39	13080.39
2.	Non-Residential	3699.27	3699.27	3879	3801.94	3801.94
3.	Small Power	936.60	936.60	988	983.83	983.83
4.	Medium Supply	2189.61	2189.61	2205	2214.99	2214.99
5.	Large Supply	11611.47	11611.47	11009	11115.19	11115.19
6.	Public Lighting	202.53	202.53	230	192.00	192.00
7.	Bulk Supply	697.18	697.18	709	661.06	661.06
8.	Railway Traction	166.79	166.79	175	183.04	183.04
9.	**Total Metered sales within the State**	**33032.07**	**33032.07**	**32467**	**32232.44**	**32232.44**
10.	Common Pool sale	312.00	312.00	310	305.62	305.62
11.	Outside State sale	121.00	53.00*	212	109.88	52.92*
12.	**Total sales (9+10+11)**	33465.07	33397.07	**32989**	**32647.94**	**32590.98**

*after excluding the HP share (free) in RSD

Accordingly, the metered sales of 32232.44 MU within the State, Common Pool sale of 305.62 MU and Outside State sale of52.92 MU are now revised by the Commission as per details shown in Table 4.2.

4.2.2 **AP Consumption**

4.2.2.1 As against 11697 MU AP consumption projected by PSPCL in its ARR of FY 2016-17, the Commission, in its Tariff Order for FY 2016-17, approved AP consumption of 11327 MU for FY 2016-17. PSPCL in its ARR for FY 2016-17 had projected the addition of 25650 AP consumers during FY 2016-17. Also, as per the AP Policy issued by the Government of Punjab for FY 2015-16 vide letter No.1/33/08-EB(PR)/816 dated 10.12.2015, target for release of 1.65 Lakh new tubewell connections by 31.12.2016 was fixed. In view of the target for release of 1.65 Lakh new tubewell connections to be released by PSPCL by 31.12.2016, the Commission observed that the growth of AP consumption during FY 2016-17 is likely to be more than that projected by PSPCL in its ARR for FY 2016-17. As such, the Commission decided to estimate the AP consumption for FY 2016-17 by applying 7.50% increase (adhoc) over AP consumption of 10537 MU approved by the Commission for FY 2015-16 in the Tariff Order for FY 2016-17, which worked out to 11327 MU. The Commission further decided to revisit the AP consumption on the basis of revised estimates, while undertaking review for FY 2016-17, in the next Tariff Order.

In ARR for MYT Control Period from FY 2017-18 to FY 2019-20, PSPCL has submitted the actual AP consumption of first 6 months (April, 2016 to September, 2016) as 9159.87 MU on the basis of sample meters. PSPCL further submitted that the agriculture consumption for first half of FY 2016-17 has increased to 9159.87 MU over the consumption of 8572 MU for first half of FY 2015-16, which showed a considerable growth of 6.85%, which is due to release of new tube-well connections during the first half of FY 2016-17. As such, the agriculture consumption for FY 2016-17 has been estimated by PSPCL by applying a higher growth rate to justify the increasing trend of agriculture consumption. For the next six months (October 2016 to March 2017), PSPCL has estimated the AP consumption first by increasing the actual sales of second half of FY 2015-16 by 3 year CAGR i.e. (-2.10%) and further increasing it by 7.5% as per Commission Tariff Order for FY 2016-17. The actual sale of second half of FY 2015-16 was 2951 MU and PSPCL has considered AP consumption for the second half of FY 2016-17 as 3105.50 MU. Accordingly, the AP consumption for FY 2016-17 has been projected as 12265.37 MU.

PSPCL has further submitted that the AP consumption has been taken based on sample meters, as calculation based on pumped meter is not a trusted method. The computation of AP consumption on pumped energy involves assumptions with respect to losses of Agriculture feeders and contribution of AP consumption on mixed load feeders and any unreasonable assumption may affect the consumption pattern adversely to PSPCL. Further, there is hardly any State which has 100% metering of Agriculture consumers.

PSPCL has further submitted that the criteria of calculating AP consumption as adopted by the Commission based on pumped energy is not correct due to following reasons:

(i) The Commission is wrongly taking AP consumption of Kandi area mixed feeders as 30% of the total consumption, whereas PSPCL has calculated the same as 45% of the total consumption. PSPCL supplied detailed calculations to this effect to the Commission vide its Memo No. 2944/CC/DTR-121/Vol.11/TR-II dated 23.12.2013.

(ii) The 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 only and therefore losses on AP feeders are nowhere more than 6-10%.

PSPCL has further submitted that the escalation of AP consumption has been projected in-line with the Tariff Order for FY 2016-17.

4.2.2.2 The Commission, in para 2.2.3 of this Tariff Order, considered the submissions made by PSPCL in this Petition and decided to estimate AP consumption for FY 2014-15 (True up) on the basis of pumped energy. The submissions made by PSPCL now for review of AP consumption for FY 2016-17 are similar to those made for true up of FY 2014-15, and the matter has already been discussed in detail in para 2.2.3 of this Tariff Order. As such, the Commission decides to estimate AP consumption on the basis of pumped energy data for FY 2016-17, supplied by PSPCL in this Petition.

PSPCL, in response to Commission's letter no. 6431 dated 14.12.2016, has submitted the month wise data of energy pumped for AP supply upto October, 2016 vide letter no. 1178 dated 23.12.2016. Further, PSPCL vide Director/Distribution e-mail dated 16.01.2017, submitted the data of energy pumped for AP supply for the months of November, 2016 & December, 2016. The pumped energy data from January to March 2017 has been submitted vide Director/Distribution e-mails dated 23.03.2017 & 06.05.2017. Thus, the assessment of AP consumption for FY 2016-17 has been made on the basis of pumped energy data for FY 2016-17.

The Commission notes that PSPCL has booked pumped energy of 133.73 MU on average basis due to defective/non-functional feeder meters during FY 2016-17. On validation of the data of few grid substations, it was observed that excess energy has been booked by declaring healthy feeder meters as non-functional or defective. The matter has been discussed in detail in para 2.2.3 and para 3.2.3 of this Tariff Order. Meanwhile, the Commission initiated 'suo-motu' proceedings under section 142 of the Electricity Act, 2003 against delinquent officers/officials responsible for booking excess pumped energy. During proceedings, the Commission directed PSTCL to validate the pumped energy data of all 11 kV AP feeders emanating from 132kV/ 220 kV substations as supplied by PSPCL to the Commission for FY 2015-16 and up to the date of validation for FY 2016-17. The matter has been discussed in detail in para 3.2.3 of this Tariff Order. The Commission in its order dated 19.04.2017 in petition no. 42 of 2016 (Suo-moto) has issued detailed guidelines/directions to PSPCL and PSTCL to ensure submission of correct pumped energy data. The licensees may be following the directions of the Commission after issue of the order dated 19.04.2017 but the shortcomings detected in reporting the pumped energy data during FY 2015-16 and 1st quarter of FY 2016-17 might have continued during remaining period of FY

2016-17. The Commission therefore decides to reduce the pumped energy for FY 2016-17 by 1.044% also. The issue will be re-visited during True up.

The Commission also observes that during processing of ARR for FY 2012-13, PSPCL claimed that AMR compatible meters on 3239 AP feeders have been installed and assured to supply the data to the Commission. PSPCL submitted the AMR data of about 2000 feeders to the Commission during FY 2013-14. Access to the AMR data was also provided to the Commission. Various discrepancies in the pumped energy and AMR data were pointed by the Commission. PSPCL was directed to remove the discrepancies and report compliance. However, PSPCL stopped supplying AMR data to the Commission w.e.f. March 2014. In the review meeting held with Director/Distribution on 28.07.2014, the Commission was informed that out of 3250 AP feeders covered under AMR, data of only 2150 feeders is available due to faulty communication hardware. It was assured that data of these feeders will be supplied within two months i.e. by 30.09.2014 and remaining feeders will be covered upto 31.01.2015. No AMR data was supplied to the Commission. Member/Distribution, PSPCL, again in the review meeting held with the Commission on 14.10.2016 informed that AMR data of about 2400 number AP feeders is being captured at the data centre and same will be supplied within a week. Thus, it is evident that AMR data was available with PSPCL during these years but despite repeated directions to PSPCL, the licensee failed to submit the AMR data to the Commission. It appears to be a deliberate attempt by the licensee to conceal the vital information required for accurate assessment of AP consumption. PSPCL is directed to supply the monthly AMR data w.e.f. April 2016 regularly for validation of pumped energy data and provide access to the AMR data immediately failing which a cut, as may be decided by the Commission, shall be imposed on AP Consumption. The matter shall be re-visited during true up of FY 2016-17.

In view of the above, the Commission has estimated AP consumption during FY 2016-17 as 11551.62 MU, as worked out in Table 4.3.

Table 4.3: AP Consumption for FY 2016-17

(MU)

Sr. No.	Description	Energy
(i)	Energy pumped during FY 2016-17 in case of 3-phase 3-wire AP feeders	12321.88
(ii)	Energy pumped during FY 2016-17 in case of 3-phase 4-wire AP feeders	2.18 [a]
(iii)	Energy pumped during FY 2016-17 in case of Kandi Area mixed feeders feeding AP load	572.65 [b]
(iv)	Energy pumped during FY 2016-17 in case of Kandi Area pure AP feeders feeding AP load	5.89
(v)	Total energy pumped during FY 2016-17 for AP supply {(i)+ (ii)+ (iii)+(iv)}	12902.60
(vi)	Disallowance @ 1.044% of the total pumped energy {(v)*1.044%}	134.70
(vii)	Total AP energy pumped for FY 2016-17 {(v) - (vi)}	12767.90
(viii)	Less losses @10.14%[c] (14.50-(2.5+15% of 12.43)) {(vii)x10.14%}	1294.66 [c]
(ix)	Net AP consumption for FY 2016-17 {(vii) - (viii)}	11473.24
(x)	AP consumption for load of 61.52[d] MW running on Urban Feeders [not included above at Sr. No.(ix)] {(ix)x 61.52/9005.56[d]}	78.38
(xi)	**Total AP consumption for FY 2016-17 {(ix)+ (x)}**	**11551.62**

(a) Calculated by multiplying the number of 3-phase 4-wire AP feeders for each month with AP consumption per feeder for that month in case of 3-phase 3-wire AP feeders.

(b) Calculated by assuming the AP load on Kandi area mixed feeders feeding mixed load, as 30%.

(c) The loss @10.14%(11 kV and below) for FY 2016-17 has been taken from the target of T&D loss of 14.50% fixed in the Tariff Order for FY 2016-17.

(d) AP load running on 3-phase 3-wire, 3-phase 4-wire and Kandi Area feeders is 9005.56 MW and load of AP connections (running on urban feeders) is 61.52MW ending March, 2017, as submitted by PSPCL in this Petition (Format 1-D).

Thus, the Commission revised the AP Consumption to 11551.62 MU (say 11552 MU) for FY 2016-17, against 12265.37 MU projected by PSPCL.

4.2.3 Total Energy Sales for FY 2016-17

The total energy sales as per Revised Estimates (RE) projected by PSPCL in its ARR Petition and now revised by the Commission for FY 2016-17 are given in Table 4.4.

Table 4.4: Total Energy Sales for FY 2016-17

(MU)

Sr. No.	Particulars	Energy sales (RE) by PSPCL for FY 2016-17 in the ARR from FY 2017-18 to FY 2019-20	Energy sales approved by the Commission for FY 2016-17
I	II	III	IV
1.	Metered sales	32467	32232.44
2.	AP consumption	12265	11551.62
3.	Total sales within State	**44732**	**43784.06**
4.	Common pool sale	310	305.62
5.	Outside State sale	212	52.92
6.	**Total**	**45254**	**44142.60**

The Commission revised total energy sales at 44142.60 MU for FY 2016-17.

4.3 Transmission and Distribution Losses (T&D Losses)

In its ARR petition for FY 2016-17, PSPCL had projected Transmission and Distribution losses at 15.00% for FY 2016-17. The Govt. of Punjab adopted Ujwal Discom Assurance Yojana (UDAY) Scheme on 4thMarch, 2016 through a Tripartite Memorandum of Understating (MoU) between Ministry of Power, Govt. of India, Govt. of Punjab and PSPCL. The Commission asked PSPCL to submit revised ARR for FY 2016-17, after incorporating the impact of UDAY scheme on various elements/figures of ARR. PSPCL submitted the revised figures after incorporating the impact of UDAY scheme on the ARR for FY 2016-17 and had further submitted that as per MoU, PSPCL has to achieve the target T&D loss of 14.50% for FY 2016-17. The Commission fixed the T&D losses at 14.50% for FY 2016-17 in the Tariff Order for FY 2016-17, after considering the submissions made by PSPCL in the ARR for FY 2016-17 and AP consumption approved by the Commission for FY 2016-17. In the ARR petition for MYT Control Period from FY 2017-18 to FY 2019-20, PSPCL has projected T&D losses at 14.50% for FY 2016-17.

Now, PSPCL has submitted in this Petition that it has worked out the T&D losses occurring in its network on the basis of revised estimates of sales and power purchase for FY 2016-17. PSPCL has submitted that driven by the targets and directives given by the Commission, 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. PSPCL has prayed that the T&D loss level of 14.50%, as projected for FY 2016-17, be approved for the purpose of determination of ARR.

The Commission in the Tariff Order for FY 2016-17, had fixed the T&D losses for FY 2016-17 at 14.50%. Further, PSPCL in the ARR, has also prayed to approve the T&D loss level at 14.50%. Keeping in view, the T&D loss level approved in the Tariff Order for FY 2016-17 and PSPCL submissions, the Commission decides to retain T&D losses at 14.50%, as fixed by the Commission for FY 2016-17 in the Tariff Order for that year.

Keeping the overall T&D loss level of 14.50% as approved for FY 2016-17 in the Tariff Order for that year and based on the provisionally approved transmission loss of 2.5% for PSTCL for FY 2016-17 in the Tariff Order for MYT Control Period from FY 2017-18 to FY 2019-20 for PSTCL. The Commission will revisit the distribution loss of PSPCL while undertaking the True up for FY 2016-17.

4.4 Energy Requirement

4.4.1 The total energy requirement to meet the demand of the system is the sum of estimated metered sales including Common Pool and Outside State sales, estimated AP consumption and T&D losses. The total energy requirement for FY 2016-17 projected in the ARR for FY 2016-17, approved by the Commission in the Tariff Order, revised estimates furnished by PSPCL in this Petition and now revised by the Commission are given in Table 4.5.

Table 4.5: Energy Requirement for FY 2016-17

(MU)

Sr. No.	Particulars	Projected by PSPCL in ARR for FY 2016-17	Approved by the Commission in T.O. for FY 2016-17	Revised Estimates by PSPCL for FY 2016-17 in ARR for MYT Control Period from FY 2017-18 to FY 2019-20	Now revised by the Commission for FY 2016-17
I	**II**	**III**	**IV**	**V**	**VI**
1.	Metered sales within the State	33032	33032	32467	32232.44
2.	AP consumption	11697	11327	12265	11551.62
3.	**Total sales within the State (1+2)**	**44729**	**44359**	**44732**	**43784.06**
4.	Common pool sale	312	312	310	305.62
5.	Outside State sale	121	53	212	52.92
6.	**Total sales (3+4+5)**	**45162**	**44724**	**45254**	**44142.60**
7(a).	T&D losses on Sr.No.3 (%)	14.50%	14.50%	14.50%	14.50%
7(b).	T&D losses on Sr. No.3	7586	7523	7586	7425
8.	**Total energy input required [6+7(b)]**	**52748**	**52247**	**52840**	**51567.60**
9.	**Energy at transmission periphery to be sold within the State (8-4-5)**		**51882**		**51209.06**
10(a).	Transmission loss (%)		2.50%		2.50%
10(b).	Transmission loss		1297		1280
11.	Energy available to PSPCL (9-10 (b) – Sales at 132kV and above level *)		50103		49447.06
12(a).	Distribution loss (7(b)-10(b))		6226		6145
12(b).	Distribution loss (%)		12.43%		12.43%
13.	**Energy available for sale to consumers within the State** [11-12 (a) **+** Sales at 132kV and above level *]		**44359**		**43784.06**

** 482 MU (estimated sale projected by PSPCL in ARR for FY 2016-17).*

4.4.2 The revised energy requirement for FY 2016-17 with T&D losses of 14.50% is determined as 51567.60 (say 51568) MU, which has to be met from PSPCL's own generation (thermal and hydel), including share from BBMB, purchase from Central Generating Stations and other sources.

4.5 PSPCL's own generation

4.5.1 Thermal Generation

PSPCL has submitted actual gross generation from April, 2016 to September, 2016 and projections from October, 2016 to March, 2017, in this Petition. PSPCL has estimated the revised gross generation of GNDTP, GGSSTP and GHTP for FY 2016-17 based on actual generation of the respective plants for first half (H1) of FY 2016-17 and projections for second half (H2) of FY 2016-17on the basis of actual data of H1, as PSPCL has scheduled power from own thermal plants under merit order dispatch (MOD) as per directives of the Commission, except one unit each of GGSSTP and GHTP, which have been considered as must run. PSPCL has projected nil generation from GNDTP during H2 of FY 2016-17 and submitted that no power has been scheduled from GNDTP in the merit order dispatch projections. On query from the Commission, PSPCL vide letter no.742 dated 04.09.2017 submitted the thermal generation figures for FY 2016-17.

The actual generation figures for first half of FY 2016-17, projected generation figures for second half of FY 2016-17submitted by PSPCL in the ARR and submitted by PSPCL vide letter no. 742 dated 04.09.2017 are summarized in Table 4.6.

Table 4.6: Thermal Generation (Gross) for FY 2016-17

(MU)

Sr. No.	Station	Actual gross generation from Apr., 2016 to Sept., 2016	Projected gross generation from Oct., 2016 to Mar., 2017	RE for FY 2016-17 (III+IV)	Submitted by PSPCL vide letter no. 742 dated 04.09.2017
I	II	III	IV	V	VI
1.	GNDTP	658.60	0.00	658.60	698.657
2.	GGSSTP	2211.05	929.53	3140.58	2776.319
3.	GHTP	2020.36	921.76	2942.12	2736.155
4.	**Total**	**4890.01**	**1851.29**	**6741.30**	**6211.131**

The Commission approves thermal generation of 6211.131MU as submitted by PSPCL vide letter no. 742 dated 04.09.2017.

Auxiliary Consumption and Net Generation

The plant-wise auxiliary energy consumption projected by PSPCL during determination of ARR for FY 2016-17, auxiliary energy consumption approved by the Commission in the Tariff Order for FY 2016-17, the revised figures projected by PSPCL in the ARR petition for MYT Control Period from FY 2017-18 to FY 2019-20, and now approved by the Commission are given in Table 4.7.

Table 4.7: Auxiliary Energy Consumption for FY 2016-17

Sr. No.	Station	Projected by PSPCL in ARR for FY 2016-17	Approved by the Commission in T.O. for FY 2016-17	RE by PSPCL in ARR for MYT Control Period from FY 2017-18 to FY 2019-20	Now approved by the Commission
I	II	III	IV	V	VI
1.	GNDTP	11.00%	11.00%	April, 16-Sep., 16(10.66%) Oct., 16-Mar.,17(10.32%)	11.00%
2.	GGSSTP	8.50%	8.50%	April, 16-Sep., 16 (9.13%) Oct., 16-Mar., 17 (9.21%)	8.50%
3.	GHTP	8.50%	8.50%	April, 16-Sep., 16 (8.55%) Oct., 16-Mar., 17 (8.36%)	8.50%

PSPCL's repeated reference to APTEL's order dated 18.10.2012 notwithstanding APTEL's final judgement dated 22.04.2015. The matter has been discussed at length in para 2.4.1of this Tariff Order.

In the Tariff Order for FY 2016-17, the Commission had adopted the CERC norms for assessment of net generation for GGSSTP and GHTP, and considered the various issues and submissions regarding the auxiliary energy consumption of GNDTP units in para 6.4.1 of the Tariff Order for FY 2016-17, and accordingly fixed the auxiliary energy consumption for FY 2016-17 at 11.00%, 8.50% and 8.50% for GNDTP, GGSSTP and GHTP respectively.

The Commission, therefore, approves auxiliary consumption for GNDTP, GGSSTP and GHTP at the level already approved in the Tariff Order for FY 2016-17 i.e. at 11.00%, 8.50% and 8.50% respectively.

The station-wise generation projected by PSPCL during determination of ARR for FY 2016-17, generation approved by the Commission in its Tariff Order for that year, revised estimates supplied by PSPCL in the ARR, generation submitted by PSPCL vide letter no. 742 dated 04.09.2017 and the generation now revised by the Commission are given in Table 4.8.

Table 4.8: Thermal Generation for FY 2016-17

(MU)

Sr. No.	Station	Projected by PSPCL in ARR for FY 2016-17		Approved by the Commission in T.O. for FY 2016-17		Revised Estimates as per ARR for MYT Control Period from FY 2017-18 to FY 2019-20		Submitted by PSPCL vide letter no. 742 dated 04.09.2017	Now revised by the Commission	
		Gross	Net	Gross	Net	Gross	Net	Gross	Gross	Net
I	II	III	IV	V	VI	VII	VIII	IX	X	XI
1.	GNDTP	2082	1853	918.30	817.29	658.60	588.37	698.66	698.66	621.81
2.	GGSSTP	8400	7686	3959.00	3622.48	3140.58	2853.10	2776.32	2776.32	2540.33
3.	GHTP	6443	5895	3134.83	2868.37	2942.12	2692.41	2736.16	2736.16	2503.59
4.	**Total**	**16925**	**15434**	**8012.13**	**7308.14**	**6741.30**	**6133.88**	**6211.14**	**6211.14**	**5665.73**

The Commission revised gross and net thermal generation for FY 2016-17 at 6211.14 MU and 5665.73MU (say 5666MU) respectively.

4.5.2 Hydel Generation

PSPCL, in the ARR petition for FY 2016-17, projected the net hydel generation including BBMB share at 8741MU for FY 2016-17. The Commission, in its Tariff Order for FY 2016-17, approved the net hydel generation including BBMB share at 8648 MU. PSPCL, in its ARR petition for MYT Control Period from FY 2017-18 to FY 2019-20, has submitted the revised net hydel generation at 7602 MU for FY 2016-17.

PSPCL has submitted in the ARR that the availability from hydel plants for FY 2016-17 has been re-estimated on the basis of the actual generation during first half (H1) of FY 2016-17 and the revised generation target estimated for the respective hydel plants for second half (H2) of FY 2016-17. Royalty to HP from Shanan and share to HP from RSD for FY 2016-17 (H2) has been taken as average for the last three years i.e. FY 2013-14 to FY 2015-16. Projected energy from BBMB has been taken as average of the energy for the last three years due to reduction in share of Punjab from BBMB. The auxiliary losses in the plants have been calculated based on the average of the historical data. On query from the Commission vide letter no. 867 dated 01.09.2017, PSPCL vide letter no.742 dated 04.09.2017 submitted the hydel generation figures for FY 2016-17.

The actual generation figures for first half of FY 2016-17, originally projected generation figures for second half of FY 2016-17 submitted by PSPCL in the ARR and generation figures now submitted by PSPCL vide letter no. 742 dated 04.09.2017 are summarized in Table 4.9.

Table 4.9: Hydel Generation submitted by PSPCL for FY 2016-17

(MU)

Sr. No.	Station	Actual gross generation from Apr., 2016 to Sept., 2016	Projected gross generation from Oct., 2016 to Mar., 2017	RE for FY 2016-17 submitted in the ARR (III+IV)	Submitted by PSPCL vide letter no. 742 dated 04.09.2017
I	**II**	**III**	**IV**	**V**	**VI**
1.	Shanan	358.43	107.00	465.43	472.88
2.	UBDC	198.73	108.00	306.73	341.06
3.	RSD	834.35	648.00	1482.35	1306.13
4.	MHP	477.86	656.13*	1133.99	1113.95
5.	ASHP	440.06	267.00	707.06	673.86
6.	Micro Hydel	2.88	2.22	5.10	5.62
7.	**Gross own Hydro**	**2312.31**	**1788.35**	**4100.66**	**3913.50**

**Including 12.13 MU of MHP Stage-II.*

The Commission has worked out net hydel generation for FY 2016-17 by deducting the auxiliary consumption, transformation losses and free HP share in RSD as indicated in Table 4.10. HP royalty in Shanan has not been deducted from the gross hydel generation as the same has been considered as Outside State sale in para 4.2.1, since some revenue is earned from this sale.

The total availability of station-wise hydel generation as projected by PSPCL in the ARR for FY 2016-17, generation approved by the Commission in the Tariff Order for FY 2016-17, the revised estimates submitted by PSPCL in this Petition and the generation now approved by the Commission are given in Table 4.10.

Table 4.10: Hydel Generation for FY 2016-17

(MU)

Sr. No.	Station	Projected by PSPCL in ARR for FY 2016-17	Approved by the Commission in T.O. for FY 2016-17	RE for FY 2016-17submitted by PSPCL in the ARR	Submitted by PSPCL vide letter no. 742 dated 04.09.2017	Now Approved by the Commission
I	II	III	IV	V	VI	VI
1.	Shanan	518	518	465.43	472.88	472.88
2.	(a) UBDC Stage I	154	154	153.37	170.53	170.53
	(b) UBDC Stage II	215	215	153.36	170.53	170.53
3.	RSD	1515	1515	1482.35	1306.13	1306.13
4.	MHP	1133	1133	1133.99	1113.95	1113.95
5.	ASHP	720	720	707.06	673.86	673.86
6.	Micro Hydel	6	6	5.10	5.62	5.62
7.	**Total own generation (Gross)**	**4261**	**4261**	**4100.66**	**3913.50**	**3913.50**
8.	Less: Auxiliary consumption and transformation loss	10	35	23.96	31.82	31.82*
9.	Less: HP share in RSD		68	66.07	56.96	56.96
10.	Less: Royalty to HP from Shanan			52.66	52.66	
11.	**Total own generation (Net) (7-8-9-10)**	**4251**	**4158**	**3957.97**	**3772.06**	**3824.72**
12.	**PSPCL share from BBMB**					
(a)	PSPCL share excluding common pool share (Net)	4178	4178	3643.90	3773.42	3773.42
(b)	Add Common pool share	312	312	310.00	305.62	305.62
13.	**Net share from BBMB**	**4490**	**4490**	**3953.90**	**4079.04**	**4079.04**
14.	**Total hydro availability (Net) (Own+BBMB) (11+13)**	**8741**	**8648**	**7911.87**	**7851.10**	**7903.76**

**Transformation loss @0.5% (19.56 MU), Auxiliary consumption @0.5% for RSD generation of 1306.13 MU and UBDC stage-I generation of 170.53MU (having static exciters) and @0.2% for others (12.26 MU).*

The Commission, thus, approves revised net hydel generation for FY 2016-17 at 3824.72 MU (say 3825MU) from own hydel stations and 4079.04 MU (say 4079 MU) as share from BBMB, as shown in Table 4.10.

4.5.3 The net availability of thermal and hydel generation approved for FY 2016-17 is depicted in Table 4.11.

Table 4.11: Net availability of Thermal and Hydel Generation approved for FY 2016-17

(MU)

Sr. No.	Thermal and Hydel Generation	Net Generation
I	**II**	**III**
1.	Thermal	5665.72
2.	Hydel	
(a)	Own generation	3824.72
(b)	Share from BBMB (including Common Pool share)	4079.04
(c)	Total Hydel (Own + BBMB)	7903.76
3.	**Total (Thermal + Hydel) availability**	**13569.48**

4.6 Power Purchase

To meet the energy requirement, PSPCL had projected power purchase at 28880 MU (net) in the ARR for FY 2016-17. The figure for Power Purchase was revised by PSPCL at 28573 MU in the revised ARR, after taking the effect of UDAY Scheme. The Commission, in its Tariff Order for FY 2016-17, approved power purchase at 36291 MU (net) for FY 2016-17. PSPCL has now furnished revised estimates of power purchase for FY 2016-17 at 38655.97 MU (net) in this ARR petition. The approved total energy requirement during FY 2016-17,including Common Pool sale and Outside State sale and T&D losses has been determined as 51567.60 MU, as discussed in para 4.4. The energy available from PSPCL's own generating stations including its share from BBMB is 13569.48 MU (5665.72 MU of thermal generation and 7903.76 MU of hydel generation including share from BBMB) as approved in para 4.5. The balance energy requirement works out to 37998.11 MU (net), which has to be met through purchases from Central Generating Stations and other sources.

The Commission, therefore, approves the revised power purchase at 37998.11 MU (net) for FY 2016-17.

The matter is further discussed in para 4.9.

4.7 Energy Balance

Details of energy requirement and energy availability projected by PSPCL in its ARR petition for FY 2016-17, approved by the Commission in its Tariff Order for FY 2016-17, revised estimates supplied by PSPCL in the ARR petition for MYT Control Period from FY 2017-18 to FY 2019-20 and now approved by the Commission are given in Table 4.12.

Table 4.12: Energy Balance for FY 2016-17

(MU)

Sr. No.	Particulars	Projected by PSPCL in ARR for FY 2016-17	Approved by the Commission in Tariff Order for FY 2016-17	Revised Estimates by PSPCL in ARR	Now approved by the Commission
I	II	III	IV	V	VI
(A)	**Energy Requirement**				
1.	Metered Sales	33032	33032	32467	32232.44
2.	Sales to Agriculture	11697	11327	12265	11551.62
3.	**Total Sales within the State**	**44729**	**44359**	**44732**	**43784.06**
4.	T&D Losses (%)	14.50%	14.50%	14.50%	14.50%
5.	T & D Losses	7586	7523	7586	7425
6.	Sale to Common Pool consumers	312	312	310	305.62
7.	Outside State Sale	121	53	212	52.92
8.	**Total Requirement**	**52748**	**52247**	**52840**	**51567.60**
(B)	**Energy Available**				
9.	Own generation (Ex-bus)				
(a)	Thermal	15434	7308	6134	5665.72
(b)	Hydel	4251	4158	3958	3824.72
10.	Share from BBMB (incl. share of common pool consumers)	4490	4490	3954	4079.04
11.	Purchase (net)	28573	36291	38794	37998.11
12.	**Total Availability**	**52748**	**52247**	**52840**	**51567.60**

4.8 Fuel Cost

4.8.1 PSPCL in the ARR petition for FY 2016-17 had projected fuel cost of ₹5804.62 crore for gross generation of 16925 MU. The Commission, in the Tariff Order for FY 2016-17, approved fuel cost of ₹2397.56 crore for gross thermal generation of 8012.13 MU. PSPCL, in this ARR petition, has revised the estimates of fuel cost to ₹2281.99 crore for gross thermal generation of 6741.30 MU, based on calorific value and price of coal/oil, transit loss of coal, station heat rate of thermal generating stations and specific oil consumption, as given in Table 4.13.

Table 4.13: Calorific Value and Price of Coal & Oil, Transit loss of coal, Specific Oil consumption and Station Heat Rate as submitted by PSPCL for FY2016-17 in the ARR

Sr. No.	Station	Period	Gross Calorific value of coal (kCal/kg)	Calorific Value of Oil (kCal/lt)	Price of Oil (₹/ KL)	Price of coal excluding transit loss (₹/MT)	Transit Loss (%)	Station Heat Rate (kCal/ kWh)	Specific Oil Consumption (ml/kWh)
I	II	III	IV	V	VI	VII	VIII	IX	X
1.	GNDTP	H1	4247.67	9400	36038.63	4913.00	(-)0.66	2759.04	1.32
	GNDTP	H2	4265.57	9400	40410.00	4855.00	0.22	2864.79	1.00
2.	GGSSTP	H1	4179.00	9900	23167.92	5124.72	(-)0.74	2816.97	1.24
	GGSSTP	H2	4207.00	9900	22478.46	5181.04	(-)0.07	2811.00	1.41
3.	GHTP	H1	4058.00	9500	31993.00	5371.00	(-)0.14	2478.00	1.01
	GHTP	H2	4097.00	9500	35825.00	5495.00	(-)0.29	2517.00	0.91

H1: April, 2016 to September, 2016& H2: October, 2016 to March, 2017.

4.8.2 With regard to various performance parameters, PSPCL has submitted that PSPCL is scheduling own thermal stations under Merit Order Dispatch. PSPCL has further submitted as under:

A. **Station Heat Rate (SHR)**

(i) For GNDTP, the Commission has approved SHR of 2750 kCal/kWh for FY 2016-17 based on CERC norms for Tanda TPS (after its R&M), as specified in CERC Tariff Regulations, 2014. PSPCL has further submitted that SHR approved by the Commission is on the lower side as compared to that attained by PSPCL. PSPCL has achieved the SHR of 2759.04kCal/kWhfor H1 of FY 2016-17. PSPCL has considered the SHR of 2864.79kCal/kWh for H2 of FY 2016-17, in line with SHR of first quarter of FY 2016-17, to represent the actual position of the plant.

(ii) For GHTP, the Commission has approved different SHR as 2450 kCal/kWh for Units I & II and 2428 kCal/kWh for Units III & IV. The approach adopted by the Commission for stipulating SHR for Units is not prudent. The SHR needs to be assessed station-wise as some energy from a particular unit, such as FO tank heating is used for common services of GHTP units. Also, the SHR increases with aging of the units and is prone to increase during the backing down of units. Accordingly, PSPCL has considered the heat rate of 2517kCal/kWh for H2 of FY 2016-17 as per average of actual heat rate of both stages of FY 2016-17. PSPCL has prayed the Commission to consider SHR of 2517 kCal/kWh for all the units of GHTP.

(iii) For GGSSTP, the Commission has approved the SHR of 2500kCal/kWh based on CERC norms specified in CERC Tariff Regulations, 2014. The actual SHR achieved in H1 of FY 2016-17 is 2816.97kCal/kWh, which is quite higher than the approved figure. Considering the actual performance of Stations, PSPCL has considered the SHR of 2811 kCal/kWh for H2 of FY 2016-17, actual value of first quarter of FY 2016-17.

B. **Price of Coal and Oil**

(i) For GNDTP, the price of coal has drastically increased from FY 2015-16 to H1 of FY 2016-17. Coal was available at a rate of ₹4691.41/MT during FY 2015-16. However, the price has increased to ₹4913/MT during H1 of FY 2016-17. The coal price for H2 of FY 2016-17 has been estimated by PSPCL at ₹4855/MT in line with actual price of coal in first quarter of FY 2016-17.

Price of oil has shown some reduction trend, which came to ₹36038.63/KL in H1 of FY 2016-17 from ₹44198.21/KL in FY 2015-16.The oil price for H2 of FY 2016-17 has been estimated by PSPCL at ₹40410/KL.

(ii) For GGSSTP and GHTP, PSPCL has submitted that for getting fair estimate of the scenario, coal price and oil price is considered as per actual figures of first quarter of FY 2016-17. The coal price for H2 of FY 2016-17 has been considered as ₹5181.04/MT and ₹5495/MT for GGSSTP and GHTP respectively. The price of oil has been considered in line with actual price of first quarter of FY 2016-17.

PSPCL vide its letter no. 1178 dated 23.12.2016 has intimated the various reasons, listed below, leading to variation in the prices of coal during last few years:

a) The rates of Clean Energy Cess on coal increased from ₹100/MT to ₹200/MT w.e.f. 01.03.2015 vide Ministry of Finance notification no. 1/2015 dated 01.03.2015. This rate was further increased from ₹200/MT to ₹400/MT w.e.f. 01.03.2016.

b) Service Tax increased from 14% to 14.5% including Swachh Bharat cess @0.5% w.e.f 15.11.2015 vide Ministry of Finance notification no. 21/2015.

c) During FY 2014-15, the major proportion of coal received was from PANEM, which was cheaper as compared to the price of non-PANEM coal i.e. coal from BCCL & CCL. The supply of PANEM coal stopped w.e.f. 01.04.2015 after its allocation was cancelled as per Hon'ble Supreme Court order dated 24.09.2014.

d) During FY 2015-16, imported coal having GCV of 6600 Kcal/kg (app.) was received. Cost of imported coal is higher than that of CCL coal.

e) Imposition of Levy of MMDR (Mines &Minerals-Development & Regulation) Royalty-Central Fund @2% on Royalty w.e.f. 14.08.2015, along with ED & CST thereon.

f) Imposition of Levy of MMDR Royalty-State Fund @30% on Royalty w.e.f. 07.12.2015, along with ED & CST thereon.

g) Increase in coal rates by 8.68% to 14.34% approximately for G12 to G6 grade w.e.f. 30.05.2016.

h) Busy Season Surcharge @15% has been made applicable during the 3rd quarter w.e.f. 01.10.2015. (Railways Rates Circular No. 24 of 2013).

i) During FY 2015-16, a large number of rakes of BCCL coal were received, which is costlier as compared to the price of CCL coal, because BCCL already charge washery recovery charges for washery grade coal & had supplied higher grades (mostly G-3) coal in case of non-washery grade coal.

j) Levy of washery recovery charges @ ₹753 per MT plus taxes by CCL.

k) Supply of G-5, G-6 etc. grade coal by CCL.

l) The payment of beneficiation charges @₹155+Service Tax per MT to M/s Monnet Daniels Coal Washeries Ltd. against the supply of washed coal started w.e.f. 01.04.2015.

C. **Transit Loss of Coal**

PSPCL has submitted that from past trends, it has been observed that the coal transit losses are inconsistent for all the three plants. Further, the coal transit losses are not within the control of PSPCL and attributable to the following reasons:

(i) Calibration of measuring instruments: Weighing of coal at two different locations having different calibration of weighing machines leads to an error more than permissible limits.

(ii) The transit loss occurs because of seasonal variation during the transportation of the coal, which changes the moisture content of the coal during the transportation.

(iii) The transportation of coal happens through open wagons. As soon as, the goods are loaded on the wagon, it becomes owner's risk and Railways disown the responsibility. Coal is subject to pilferages at all halts, which is beyond the control of PSPCL.

(iv) During unloading, small quantities of coal get stuck at the edges of the transport wagons due to moisture and remain undelivered to the plant, contributing to transit losses.

As such, PSPCL has considered the transit loss as per actual of first quarter of FY 2016-17 i.e. 0.22%, (-)0.07% and (-)0.29% for GNDTP, GGSSTP and GHTP respectively for H2 of FY 2016-17.

4.8.3 PSPCL has quoted various judgments of the Hon'ble APTEL for allowing the technical performance of thermal generating stations at relaxed levels. Since there is a material difference in fact from the quoted cases, the Commission finds no justification/reason to deviate from the norms/ parameters considered for working out fuel cost for FY 2016-17, in the Tariff Order for that year.

4.8.4 Fuel cost being a major item of expense, the Commission thought it prudent to get the same validated. The calorific value of oil & coal, the price of oil &coal and transit loss of coal as per validation obtained by the Commission are indicated in Table 4.14.The Commission had decided in the Tariff Order for FY 2016-17 to adopt the GCV of received coal as per CERC Tariff Regulations, 2014, for working out the fuel cost. The calorific value (GCV) as shown under column III of Table 4.14 is the calorific value of received coal. The validated values are based on data from April, 2016 to September, 2016.

Table 4.14: Calorific Value and Price of Coal & Oil and Transit loss of coal as per validation obtained by the Commission for FY 2016-17

Sr. No.	Station	Calorific value of received coal (kCal/kg)	Calorific Value of Oil (kCal/lt)	Price of Oil (₹/KL)	Price of coal (₹/MT) (Excluding Transit Loss)	Transit Loss (%)
I	II	III	IV	V	VI	VII
1.	GNDTP	4388.94	9875.08	36019.80	4913.00	(-)0.66
2.	GGSSTP	4544.86	9857.06	23165.07	5124.72	(-)0.60
3.	GHTP	4277.62	9888.58	31945.34	5324.00	(-)0.14

4.8.5 The Commission has taken the quantity of PANEM/Captive Mine coal as submitted by PSPCL. The price of coal and corresponding calorific values given in the ARR petition of PSPCL and those validated by the Commission [Table 4.14] are weighted average values of coal for the months from April, 2016 to September, 2016, including PANEM/Captive Mine coal.

4.8.6 The gross generation considered by the Commission for the estimation of fuel cost for FY 2016-17 is 6211.131 MU. The fuel cost for different thermal generating stations corresponding to generation, now approved by the Commission, has been worked out, based on the parameters adopted by the Commission in the Tariff Order for FY 2016-17. Table 4.15 details the fuel cost based on calorific value & price of coal & oil as mentioned in Table 4.14.

4.8.7 No transit loss has been allowed for PANEM/Captive Mine coal, while arriving at fuel cost, as prices according to the contract are on F.O.R. destination basis. In the case of coal other than Imported and PANEM/Captive Mine coal, the Commission approves the transit loss (for domestic coal) for all the thermal generating stations of PSPCL as 1.0% for FY 2016-17, as approved in the Tariff Order for FY 2016-17. However, no such loss is permissible in case same is priced on F.O.R. destination basis. The transit loss shall be revisited during the true up exercise for FY 2016-17.

Table 4.15: Fuel Cost for FY 2016-17

Sr. No.	Item	Derivation	Unit	GNDTP	GGSSTP	GHTP (Units I & II)	GHTP (Units III & IV)	Total
I	**II**	**III**	**IV**	**V**	**VII**	**VIII**	**VIII**	**IX**
1.	Generation	A	MU	698.657	2776.319	1029.335	1706.820	**6211.131**
2.	Heat Rate	B	Kcal/kWh	2750	2450	2450	2428	
3.	Specific Oil consumption	C	ml/kWh	0.5	0.5	0.5	0.5	
4.	Calorific value of oil	D	kcal/litre	9875.08	9857.06	9888.58	9888.58	
5.	Calorific value of coal	E	kcal/kg	4388.94	4544.86	4277.62	4277.62	
6.	Overall heat	F=(AxB)	Gcal	1921307	6801982	2521871	4144159	
7.	Heat from oil	G=(AxCxD)/1000	Gcal	3450	13683	5089	8439	
8.	Heat from coal	H=(F-G)	Gcal	1917857	6788299	2516782	4135720	
9.	Oil consumption	I=(Gx1000)/D	KL	349	1388	515	853	
10.	Transit loss of Coal	J	(%)	1	1	1	1	
11.	Total coal consumption excluding transit loss	K=(H*1000)/E	MT	436975	1493621	588360	966827	
12.	Quantity of PANEM/Captive Mine coal	L	MT	0	0	22929	38021	
13.	Quantity of coal other than PANEM/Captive Mine coal, excluding transit loss	M=K-L	MT	436975	1493621	565431	928806	
14.	Quantity of coal other than PANEM/ Captive Mine coal, including transit loss	N=M/(1-J/100)	MT	441389	1508708	571142	938188	
15.	Total quantity of coal required	O=L+N	MT	441389	1508708	594071	976209	
16.	Price of oil	P	₹/KL	36019.80	23165.07	31945.34	31945.34	
17.	Price of coal	Q	₹//MT	4913.00	5124.72	5324.00	5324.00	
18.	Total cost of oil	$R=P \times I / 10^7$	₹ crore	1.26	3.22	1.65	2.72	8.85
19.	Total cost of coal	$S=O \times Q / 10^7$	₹ crore	216.85	773.17	316.28	519.73	1826.03
20.	**Total Fuel cost**	**T=R+S**	**₹ crore**	**218.11**	**776.39**	**317.93**	**522.45**	**1834.88**
21.	**Per Unit Cost**	**U=T *10 / A**	**₹ / kWh**	**3.12**	**2.80**	**3.09**	**3.06**	**2.95**
22.	**Per unit Cost (Net)**	**U=T*10/(A-Aug. cons.)**		**3.51**	**3.06**	**3.38**	**3.35**	

** calculated on pro-rata basis as per generation of H1, submitted by PSPCL in the ARR.*
 # Worked out on proportionate basis in proportion to generation.

The Commission, therefore, approves the revised fuel cost at ₹1834.88 crore for gross thermal generation of 6211.131 MU.

4.9 Power Purchase Cost

4.9.1 The Commission, in the Tariff Order for FY 2016-17, approved power purchase cost of ₹14697.41 crore for purchase of 37142.00 MU (gross), which included the cost of RE power and RECs for RPO compliance. PSPCL, in its ARR petition for MYT Control Period from FY 2017-18 to FY 2019-20, has given revised estimates of power purchase as ₹16489.91 crore, for power purchase of 39240.70 MU (gross) inclusive of inter-state transmission charges (payable to PGCIL) of ₹1129.97 crore, ₹382.06 crore for purchase of RECs for FY 2016-17 and ₹156.53 crore as previous payments made during FY 2016-17.The revised estimates do not include Transmission Charges payable to PSTCL, which have been claimed separately by PSPCL.

PSPCL had submitted that in order to optimize the cost of power procured, it has scheduled its procurement on the merit order principles. The load profiles during various seasons, technical constraints and avoidable costs after giving due consideration to contractual obligations have been considered for deciding the procurement/generation schedule. The power purchase expenses as determined through such optimal merit order dispatch after due consideration for contractual obligations and technical constraints have been proposed by PSPCL for approval. In addition to availability from own thermal and hydro generating stations, PSPCL is procuring power from Central Generating Stations, PTC, NVVNL, IPPs in the State of Punjab and other sources, to meet its energy requirement. PSPCL has submitted the following assumption for energy projections for second half of FY 2016-17:

a) Projected energy from all existing Central Hydro Generating has been taken as per target provided by Central Hydro Generating stations.

b) Projected energy from all existing Central Thermal & Nuclear Generating stations has been taken as allocated share from respective stations. 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.

c) State of Punjab is also purchasing power from Independent Power Producers (IPPs) including Talwandi Sabo, Rajpura TPS (NPL), Goindwal Sahib, etc. The projected energy from IPPs, has been taken as same as the actual energy available for FY 2016-17.

d) Projected Energy from the NEW projects has been calculated in accordance to the CEA regulations/Designed Energy as mentioned in the PPA. The 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.

PSPCL had submitted that it shall have surplus energy available from tied up sources from central generating stations and the upcoming IPPs in the State of Punjab. In order to manage demand and maintain energy balance, the surplus energy has been proposed to be surrendered by PSPCL. Surrendering has been proposed as per Merit Order of power purchase from existing thermal and gas generating stations on monthly basis. Merit Order is based upon the variable rates of September, 2016. After surrender of energy, only variable charges have been reduced and fixed/other charges have been assumed the same.

PSPCL had 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.

PSPCL had further submitted that the Central Electricity Regulatory Commission (CERC) has notified new tariff regulations for the tariff block 2014-19 on 21.02.2014. These are effective from 01.04.2014 for a period of 5 years i.e. up to 31.03.2019. As per 2014-19 regulations issued by CERC on 21.02.2014, the generating company or the transmission licensee are allowed to recover the shortfall or refund the excess Annual Fixed Charge on account of Return on Equity due to change in applicable Minimum 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.

4.9.2 PSPCL in this Petition, has shown power purchase of 23801.04 MU at a total cost of ₹9162.53 crore for the first half of FY 2016-17, including ₹156.53 crore of previous payments made during 2015-16 and ₹564.98 crore inter-state transmission charges (payable to PGCIL). The power purchase cost for first half of FY 2016-17 has been taken by PSPCL on actual basis.

4.9.3 PSPCL had projected power purchase of 15439.66 MU at a total cost of ₹7327.38 crore during 2nd half of FY 2016-17, inclusive of inter-state transmission charges (payable to PGCIL) of ₹564.98 crore, ₹382.06 crore for purchase of RECs for FY 2016-17.

4.9.4 On query from the Commission, PSPCL vide letter no. 742 dated 04.09.2017 has submitted the details regarding power purchase cost for FY 2016-17. PSPCL has submitted revised estimates of power purchase as ₹15663.38 crore, for power purchase of 40078.71 MU (gross) inclusive of inter-state transmission charges (payable to PGCIL) of ₹949.62 crore, ₹10.00 crore for purchase of RECs for FY 2016-17 and ₹168.20 crore as previous payments made during FY 2016-17. The revised estimates do not include Transmission Charges payable to PSTCL.

4.9.5 As discussed in para 4.6, the requirement of 37998.11MU (net) is to be met through purchase from central generating stations and other sources. The transmission loss external to PSTCL system has to be added to arrive at the quantum of gross energy to be purchased. The Commission in the Tariff Order for FY 2016-17,provisionally approved external losses of 2.29% as proposed by PSPCL. PSPCL vide its letter no. 742 dated 04.09.2017 has submitted the provisional overall weighted average external losses at 2.45%.The Commission provisionally approves the external losses at 2.45%, as submitted by PSPCL for FY 2016-17, subject to true up and validation of the same. The total external losses @2.45% have been shown as 559.44 MU. After adding 2.45% external losses (559.44 MU), the gross energy required to be purchased works out to be 38557.55 MU (37998.11 MU + external losses of 559.44 MU).

4.9.6 PSPCL vide its letter no. 1178 dated 23.12.2016 had submitted that it will have 9017.48 MU of surplus power during FY 2016-17, which is likely to be surrendered by PSPCL from the tied-up sources from Central Generating Stations and other sources. The Commission further notes that fixed/capacity charges have to be paid by PSPCL for power to be surrendered out of the allocated share.

4.9.7 The Commission provisionally approved the purchase of power 38557.55 MU during FY 2016-17. Accordingly, PSPCL has purchased additional 1521.16 MU (40078.71-38557.55)of power in accordance with energy balance). The amount of additional power 1521.16 MU has been worked out as ₹455.30 crore, at average variable rate of 299.31 paise/unit (provisionally) (of surrendered power from Thermal Generating Stations), which the Commission provisionally disallows.

4.9.8 PSPCL vide letter no. 742 dated 04.09.2017 has shown an amount of ₹168.20 crore relating to previous payments made during FY 2016-17, which has been separately dealt in para 4.20 (Prior Period Expenses).

4.9.9 PSPCL has also shown an amount of ₹11.87 crore paid by PSPCL as late payment surcharge, which the Commission provisionally disallows.

Accordingly, the total cost of power purchase works out as ₹15028.01 crore (15663.38-455.30-168.20-11.87) for purchase of 38557.55MU (gross) for FY 2016-

17, excluding cost of purchase of RECs. which the Commission provisionally approves.

4.9.10 The input energy available to PSPCL for consumption in its area of distribution is 49929.06 MU as now approved by the Commission in the review for FY 2016-17.The Commission notes that as per clause 6.4(1) of the revised Tariff Policy dated 28.01.2016 notified by the Central Government, Hydro Power is to be excluded for RPO compliance (Solar). The hydro power purchase/generation works out to 12657.35 MU for FY 2016-17. Accordingly, the input energy for RPO compliance (Solar) would be 37271.71 MU. The RPO compliance for FY 2016-17 is as under:

RPO Compliance for FY 2016-17

Sr. No.	Description	FY 2016-17	
1.	Input Energy (MU)	49929.06 (for Non-Solar) 37271.71 (for Solar)	
		%	MU
2.	RPO specified i. Non-Solar ii. Solar	 4.10% 1.30%	 2047.09 484.53
3.	RE generation/purchase (RPO compliance) i. Non-Solar including RECs equivalent 66.66 MU ii. Solar	 2.56% 2.49%	 1278.14 926.32
4.	Previous year's RPO shortfall allowed to be carried forward to next year i. Non-Solar ii. Solar		 1456.08 89.16
5.	RPO compliance after accounting for carry forwardof shortfall of previous year (3-4) i. Non-Solar ii. Solar	 (-)0.36% 2.25%	 (-)177.94 837.16
6.	Net RE shortfall / (surplus) (2-5) i. Non-Solar ii. Solar	 4.46% (0.95%)	 2225.03 (352.63)

PSPCL has filed petition no. 51 of 2017 in September 2017 for carry forward of shortfall in RPO compliance (Non-Solar) of FY 2016-17 to FY 2017-18 including the pending shortfall (Non-Solar) of FY 2015-16, which PSPCL has not complied with in FY 2016-17 as allowed by the Commission in its Order dated 21.03.2017 in petition no. 61 of 2016. The Commission shall decide the said petition on merits.

In the Tariff Order for FY 2016-17, the Commission had provisionally approved an amount of ₹1189.42 crore for long term purchase of power from renewable energy sources for RPO compliance besides ₹242.80 crore for shortfall in RPO compliance of FY 2015-16. The Commission notes that four micro hydel projects of PSPCL at Daudhar, Nidampur, Rohti and Thuhi (total capacity 3.9 MW) are non-functional since long and another 18 (2x9) MW MHP Stage-II project in Distt. Hoshiarpur has been delayed considerably and not commissioned till the end of FY 2016-17. These projects, otherwise, were likely to have contributed renewable energy to the tune of 90 MU annually. In view of this, the Commission disallows ₹14.00 crore (approx.) required for purchasing Non-Solar RECs in lieu of non-availability of the said energy. PSPCL purchased RECs (Non-Solar) equivalent to 66.66 MU costing ₹10.00 crore in FY 2016-17, which the Commission allows. However, the Commission is not inclined to allow the amount of ₹382.06 crore now demanded by PSPCL for purchasing RECs for compliance of RPO shortfall since RECs costing ₹10.00 crore only have been purchased by PSPCL as against ₹242.80 crore provisionally approved by the Commission in the review for FY 2015-16 in the Tariff Order for FY 2016-17. The same shall be considered on actual basis at the time of true-up of FY 2016-17.

The Commission directs that PSPCL shall deposit the said amount of ₹14.00 crore in addition to the amount of ₹28.00 crore (₹14.00 crore each in the true-up for FY 2014-15 & FY 2015-16) in the separate fund already directed to be created in the true-up for FY 2014-15. The amount in the separate fund shall be utilized for procurement of power from renewable energy sources within the State, for RPO compliance.

4.9.11 **The Commission, therefore, approves the revised power purchase cost of ₹15038.01 crore for now determined power purchase of 38557.55 MU (gross), including ₹10.00 crore for purchase of RECs during FY 2016-17.**

4.10 Employee Cost

4.10.1 In the ARR Petition for FY 2016-17, PSPCL projected employee cost of ₹5715.97 crore against which the Commission approved a sum of ₹4835.58 crore in the Tariff Order for FY 2016-17.

4.10.2 In this Petition, PSPCL has revised the claim of employee cost to ₹5114.40 crore, net of capitalization of ₹121.87 crore for FY 2016-17. The claim is also inclusive of ₹2189.99 crore (₹437.26 crore of terminal benefits & ₹1752.73 crore of pension payments) on account of terminal benefits and ₹245.93 crore as BBMB share. As per reply to deficiencies of the ARR, ₹37.55 crore is pertaining to LTC, encashment of earned leave for LTC & staff welfare expenses are not related to terminal benefits. As such, the terminal benefits work out to ₹2152.44 (2189.99-37.55) crore. The amount of 'Other Employee Cost' claimed by PSPCL, thus, works out to ₹2716.03 (5114.40 - 2152.44 – 245.93) crore.

4.10.3 The provisions of Regulation 28(3) of PSERC (Terms and Conditions for Determination of Tariff) Regulations, 2005 as amended from time to time provide for determination of employee cost as under:

- Terminal benefits including BBMB share on actual basis.
- Increase in ‘other employee expenses’ limited to average increase in Wholesale Price Index& Consumer Price Index on approved base expenses of FY 2011-12.
- Exceptional increase in employee cost on account of pay revision etc. to be considered separately by the Commission.

As per above Regulations, terminal benefits and BBMB share of expenditure are to be allowed on actual basis. PSPCL vide its letter No. 742/ARR/Dy.CAO/245 dated 04.09.2017 has supplied the provisional Accounts for FY 2016-17 and ₹2038.90 crore has been booked in the Accounts as terminal benefits. Accordingly, the Commission allows terminal benefits of ₹2038.90 crore which includes Employee Expenses of BBMB as ₹245.93 crore. This will be re-examined at the time of true-up of FY 2016-17 based on the Audited Annual Accounts.

In view of the above, terminal benefits amounting to ₹2038.90 crore inclusive of BBMB share amounting to ₹245.93 crore are approved for FY 2016-17.

4.10.4 As per Regulations, increase in ‘Other Employee Cost’ is to be limited to average Wholesale Price Index (WPI) in subsequent years on the base employee cost approved for FY 2011-12. The ‘Other Employee Cost’ in the true up for FY 2011-12 were approved at ₹2099.07 crore in Tariff Order FY2014-15. In accordance with Commission’s Order dated 14.10.2015, amendment to PSERC (Terms and Conditions for determination of Tariff) Regulations, 2005 has been issued vide notification No. 108 dated 15.10.2015 (5th amendment), which is applicable from the date of publication dated 16.10.2015. As per this amendment, inflation factor to be used for indexing the Employee Cost will be combination of the Consumer Price Index (CPI) and Wholesale Price Index (WPI) of nth year and shall be calculated as 0.50*CPIn+0.50*WPIn.

As mentioned above, ‘Other Employee Cost’ in the true up for FY 2011-12 has been approved at ₹2099.07 crore in Tariff Order for FY 2014-15. Wholesale Price Index (all commodities) of 100 for FY 2011-12 has increased to 111.60 for FY 2016-17, thereby accounting for 11.60% {(111.60-100.00)/100.00*100} increase in WPI. There is an increase in Consumer Price Index (CPI) from 194.83 in FY 2011-12 to 275.92 in FY 2016-17. Thus, percentage increase in Consumer Price Index (CPI) is calculated as @41.62% [(275.92-194.83)/194.83*100] on the base “Other Employee Cost’ approved for FY 2011-12. The combination of 0.50 of WPI+0.50 of CPI increase will be an increase of 26.61% [(11.60+41.62)/2] which is applicable for whole of the FY 2016-17.

By applying WPI& CPI combined increase @26.61% on 'Other Employee Cost' of ₹2099.07 crore approved for the base year FY 2011-12, the 'Other Employee Cost' works out to ₹2657.63 crore for FY 2016-17.

As per provisional Accounts for FY 2016-17, ₹2508.56 crore has been booked as 'Other Employee Cost' and the same has been considered for Review. This will be re-examined at the time of true-up of FY 2016-17 based on the Audited Annual Accounts.

Thus, the Commission, approves the total employee Cost ₹4547.46 (2038.90+2508.56) crore as employee cost in the review for FY 2016-17.

4.11 Repair & Maintenance (R&M) Expenses

4.11.1 In the ARR Petition for FY 2016-17, PSPCL projected R&M expenses at ₹673.58 crore against which the Commission had approved at ₹418.30 crore.

4.11.2 In this Petition, PSPCL has revised the claim to ₹599.43 crore which includes R&M expenses of ₹18.27 crore claimed for asset addition during the year for FY 2016-17 and ₹18.27 crore for BBMB.

4.11.3 Regulation 28 (5) (a) of the PSERC Tariff Regulations, 2005 amended on 17.09.2012 provides for adjusting base O&M expenses approved by the Commission for FY 2011-12 in proportion to increase in Whole Sale Price Index (all Commodities) to determine O&M expenses for subsequent year. The Commission in Tariff Order 2014-15 approved ₹320.67 crore for FY 2011-12 on Gross Fixed Assets of ₹39215.89 crore as on 01.04.2012. The Gross Fixed Assets as on 01.04.2016 are to the tune of ₹46455.75 crore. Therefore, base R&M expenses for FY 2016-17 works out to ₹379.87 (320.67/39215.89*46455.75) crore. As mentioned above, there was WPI increase of 11.60% for FY 2016-17. By applying WPI increase @11.60% on the base R&M expenses of ₹379.87 crore, the R&M expenses work out to ₹423.93 (₹379.87*111.60/100) crore for FY 2016-17.

In the Provisional Annual Accounts for FY 2016-17, PSPCL has disclosed capitalization of assets worth ₹2894.33 crore during FY 2016-17. These are being taken for calculating allowable R&M expenses for FY 2016-17. Since details regarding commissioning/ capitalization of the assets added during FY 2016-17 are not available in the accounts as well as the ARRs of the utility, R&M expenses for these assets are being considered assuming that these assets remained in service for six months on an average during FY 2016-17. Average percentage rate of R&M expenses of

₹423.93 crore vis-à-vis the opening balance of Gross Fixed Assets of ₹46455.75 crore as on 01.04.2016 works out to 0.91% (423.93/46455.75 * 100). The additional R&M expenses on the addition to the assets of ₹2894.33 crore work out to ₹13.18 (2894.33/2*0.91%) crore considering the asset addition for 6 months on an average during the year as details regarding commissioning/ capitalization of the assets added during FY 2016-17 are not available in the ARRs of the utility. The total R&M expense works out to ₹437.11 (423.93+13.18) crore.

As per Provisional Accounts for FY 2016-17, ₹349.53 crore has been booked as Repair and Maintenance Charges. Accordingly, the Repair and Maintenance charges are being taken as ₹349.53 crore, which includes R&M expenses of BBMB as ₹13.26 crore. This will be re-examined at the time of true-up of FY 2016-17 based on the Audited Annual Accounts.

The Commission approves R&M expenses of ₹349.53 crore in the review of FY 2016-17 to PSPCL.

4.12 Administrative and General (A&G) Expenses

4.12.1 In the ARR Petition for FY 2016-17, PSPCL projected A&G expenses at ₹217.24 crore against which the Commission approved ₹138.00 crore in the Tariff Order for FY 2016-17.

4.12.2 In the ARR Petition for MYT from FY 2017-18 to FY 2019-20, PSPCL has claimed an amount of ₹184.25 crore as A&G expenses for FY 2016-17 which includes A&G expenses of ₹5.27 crore on addition to the assets during the year and ₹11.31 crore on account of license fee and ARR fee for determination of tariff.

Regulation 28 of the PSERC Tariff Regulations, 2005 amended on 17.09.2012 provides for adjusting base O&M expenses approved by the Commission for FY 2011-12 in proportion to increase in Whole Sale Price Index (all Commodities) to determine O&M expenses for subsequent year. The Commission in Tariff Order 2014-15 approved ₹97.12 crore for FY 2011-12 on Gross Fixed Assets of ₹39215.89 crore as on 01.04.2012. The Gross Fixed Assets as on 01.04.2015 are to the tune of ₹46455.75 crore. Therefore, base A&G expenses for FY 2016-17 work out to ₹115.05 (97.12/39215.89*46455.75) crore. As mentioned above, there is WPI increase of 11.60% for FY 2016-17. By applying WPI increase @11.60% on the base A&G expenses of ₹115.05 crore, the A&G expenses works out to ₹128.40 (115.05*111.60/100) crore for FY 2015-16.

4.12.3 In the Provisional Annual Accounts for FY 2016-17, PSPCL has disclosed capitalization of assets worth ₹2894.33 crore during FY 2016-17. These are being taken for calculating allowable A&G expenses for FY 2016-17. Since details regarding commissioning/ capitalization of the assets added during FY 2016-17 are not available in the accounts as well as the ARRs of the utility, A&G expenses for these assets are being considered assuming that these assets remained in service for six months on an average during FY 2016-17. Average percentage rate of A&G expenses of ₹128.40 crore vis-à-vis the opening balance of Gross Fixed Assets of ₹46455.75 crore as on 01.04.2016 works out to 0.28% (128.40/46455.75*100).

The additional A&G expenses on the addition to the assets of ₹2894.33 crore work out to ₹4.05 (2894.33/2*0.28%) crore.

As per Provisional Accounts for FY 2016-17, and ₹151.62 crore has been booked as Administrative and General Expenses. The Administrative and General Expenses are being taken as ₹132.45 (128.40+4.05) crore on normative basis. PSPCL has also claimed license and Audit fee of ₹12.96 crore which is also allowed.

Thus, the Commission, approves A&G expenses of ₹145.41 (132.45+12.96) crore in the review of FY 2016-17 to PSPCL.

In the foregoing paras, O&M expenses (Employee cost, R&M expenses and A&G expenses) of ₹5042.40 (4547.46+349.53+145.41) crore have been approved, wherein share of BBMB expenditure as claimed by PSPCL i.e. ₹259.19 (₹245.93 crore Employees expenses + ₹13.26 crore R&M expenses) crore in the ARR has been allowed. In petition no. 251/GT/2013 filed by BBMB before Central Electricity Regulatory Commission (CERC) for approval of Tariff of its generating stations and transmission systems, CERC vide its Order dated 12.11.2015 has determined O&M expenses in respect of transmission assets for the period 2009-14. CERC vide order dated 21.03.2016 also determined the Tariff for generating stations of BBMB.

Based on CERC's order, the Commission determined allowable O&M expenses to BBMB for FY 2013-14 as ₹106.82 crore as per Table 3.9 of Tariff Order for FY 2016-17. CERC has not determined O&M expenses of BBMB for FY 2014-19 so far. Earlier, the Commission consciously decided that allowable O&M expenses at the level determined by CERC for FY 2013-14 were to be allowed for subsequent year.

Directions of the Hon'ble APTEL have been discussed in Para 3.13.17 of this Tariff Order. Consequential order of the Commission will be issued in due course. In the meantime, 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.

Thus, O&M expenses of ₹4890.03 (4547.46+349.53+145.41-152.37) crore are approved to PSPCL for FY 2016-17.

4.13 Depreciation Charges

4.13.1 In the ARR Petition for FY 2016-17, PSPCL projected depreciation charges of ₹1157.58 crore on assets valued at ₹27150.89 crore as on 1st April, 2016 against which the Commission approved depreciation charges of ₹1063.59 crore.

4.13.2 In this Petition, PSPCL has revised its claim to ₹1183.19 crore as depreciation charges for FY 2016-17. The Gross Fixed Assets as on 01.04.2016 are to the tune of ₹27518.58 crore (net of land and land rights). There is an addition of ₹2901.48 crore (net of land and land rights) to Gross Fixed Assets due to capitalization of assets during FY 2016-17. Thus, closing balance of Fixed Assets as on 31.03.2017 is ₹30420.06 (net of land and land rights) crore. Depreciation @3.95% on average of assets ₹28969.31 crore has been worked out as ₹1144.28 crore for FY 2016-17.

Based on Provisional Accounts for FY 2016-17, depreciation charges are ₹1143.64 crore. Accordingly, the Commission approves the depreciation charges of ₹1143.64 crore in the review for FY 2016-17. These will be re-examined at the time of true-up of FY 2016-17 based on the Audited Annual Accounts.

4.14 Interest and Finance Charges

4.14.1 In the ARR Petition for FY 2016-17, PSPCL claimed Interest and Finance Charges of ₹3029.69 crore against which the Commission approved an amount of ₹1503.74 crore for FY 2016-17.

In this Petition, PSPCL has claimed the Interest and Finance charges of ₹2927.52 crore for FY 2016-17 in the review.

Table 4.16 Interest & Finance Charges claimed by PSPCL for FY 2016-17

(₹crore)

Sr. No.	Description	Interest as depicted in ARR Petition
I	**II**	**III**
1.	Interest on Institutional Loans	2089.73
2.	Interest on Working Capital Loans	615.93
3.	Interest on GPF	126.98
4.	Interest to Consumers	210.00
5.	Other Interest/Finance Charges	240.88
6.	**Total**	**3283.52**
7.	Less: Capitalization	356.00
8.	**Net Interest and Finance Charges**	**2927.52**

The Interest and Finance charges allowable to PSPCL are discussed in the ensuing paragraphs.

4.14.2 **Investment Plan**

The Commission in its Tariff Order for FY 2016-17 approved an Investment Plan of ₹1600.00 crore against projected capital expenditure of ₹3183.95 crore for FY 2016-17. In ARR Petition for MYT from FY 2017-18 to FY 2019-20, PSPCL has submitted investment plan/capital expenditure of ₹3183.95 crore for review of FY 2016-17.

The opening Capital Work in Progress as on 01.04.2016 is ₹1656.25 crore, net asset additions during FY 2016-17 is of ₹2894.33 crore and closing Capital Work in Progress as on 31.03.2017 is ₹1177.05 crore as per Provisional accounts of FY 2016-17.

Table 4.17 Summary of Capital expenditure planned by PSPCL

(₹crore)

Sr. No	Particulars	FY 2016-17 (RE)
I	II	III
(a)	Generation	478.25
(b)	Sub-Transmission and Associated Projects	550.00
(c)	Distribution	2155.70
	Total	**3183.95**

The Commission has reviewed the capital expenditure planned by utility for FY 2016-17 for different functions of Generation, Transmission and Distribution.

(a) Generation

For FY 2016-17, PSPCL had proposed expenditure of ₹478.25 crore on major schemes namely, R&M of BBMB Power House, Bhakra left bank & Dehar PH, R&M of Shahpur Kandi, Mukerian and other Hydel projects, R&M of GNDTP, GHTP & GGSSTP and other miscellaneous works.

(b) Sub-Transmission

PSPCL also submitted that capital expenditure of ₹550.00 crore was planned for network capacity addition, improvement projects for network up to 66 kV, construction of new substations and mini grid substations along with associated transmission lines during FY 2016-17.

(c) Distribution

PSPCL had proposed capital expenditure amounting to ₹2155.70 crore. The utility has further submitted that distribution function requires regular capital expenditure for network capacity addition and system improvement works. The improvement in net-work will lead to reduction of distribution losses in the net-work. The major schemes include normal development works including SI Schemes of ₹562.78 crore, shifting of meters (DSM measures) of ₹220.00 crore, release of tubewell connection ₹145.20 crore, works relating to APDRP-II Part-A & Part-B ₹860.00 crore.

In the capital investment plan of ₹3183.95 crore, PSPCL has proposed capitalization of assets of ₹2918.20 crore. However, asset addition as per provisional Accounts of FY 2016-17 is ₹2894.33 crore, which is considered.

Interest on loans being claimed after making adjustments of loans converted under UDAY scheme works out as under:

Table 4.18: Interest on long term loan claimed for FY 2016-17

(₹crore)

Sr. No.	Particulars	Amount
1.	Interest claimed by PSPCL for FY 2016-17	2206.84
2.	Less: Consumer security (interest on loan claim)	156.07
3.	Less: Interest on UDAY Bonds	1192.17
4.	Add: Interest on Long Term Loan component of GOP UDAY Bonds (2246.77*8.22%*6/12)	92.34
5.	Interest on Long Term Loan in FY 16-17	950.94

The Commission in Table 3.10 (A) of this Tariff Order, has approved closing balance of loans of ₹8748.79 crore as on 31.03.2016. Therefore, the opening balance of ₹8748.79 crore as on 01.04.2016 has been considered for calculating interest on long term loan for FY 2016-17 in Table 4.20. Further, PSPCL has submitted loan repayment of ₹6972.48 crore (excluding GPF Liability and RBI Bonds) during FY 2016-17. PSPCL supplied the detail of receipt of loan and re-payment of loans in-line with already supplied provisional accounts for FY 2016-17. As per the detail, receipt of loan including UDAY and other loan has claimed at ₹3006.77 (2007.13+999.64) crore. Similarly, repayment of loan of UDAY Scheme and other loans has been shown as ₹2956.58 (2007.13+949.45) crore. There is no fresh loan addition on account of loans under UDAY Scheme. Considering this, the interest on long term loan (other than UDAY Scheme, WCL, Other consumer security, APDRP-A Scheme and GoP) works out to ₹950.94 crore in Table 4.19.

Table 4.19: Interest on loan (Other than WCL and GoP Loans) for FY 2016-17

(₹crore)

Sr. No.	Particulars	Loans as on April 01,2016	Receipt of Loans during FY 2016-17	Repayment of Loans during FY 2016-17	Loans as on March 31, 2017	Amount of Interest
I	II	III	IV	V	VI	VII
1.	As per data furnished in ARR Petition (other than WCL and GoP Loans)	9158.34	3006.77	2956.58	9208.53	950.94
2.	Approved by the Commission (other thanWCL, GP Fund and GoP Loans)	8748.79	3006.77	2956.58	8798.98	908.53

4.14.3 **Interest on General Provident Fund (GPF)**

As per provisional accounts FY 2016-17 PSPCL booked interest of ₹130.33 crore on GPF accumulations for FY 2016-17. Therefore, the Interest of ₹130.33 crore on GP Fund, being a statutory payment, is allowed as claimed by PSPCL for FY 2016-17.

4.14.4 **Finance Charges**

PSPCL has claimed finance charge of ₹241.99 crore during FY 2016-17. PSPCL vide its letter No. 563 dated 17.08.2017 requested an amount of ₹208.37 crore of guarantee fee and stamp duty @2% on DISCOM bonds of ₹5209.42 crore be allowed in FY 2017-18 instead of FY 2016-17. PSPCL vide its letter No. 742/ARR/Dy.CAO/245 dated 04.09.2017 has supplied the provisional Accounts for FY 2016-17, wherein the Finance Charges have been booked as ₹33.62 crore and same are allowed. This will be re-examined at the time of true-up of FY 2016-17 based on the Audited Annual Accounts. The Commission approves the finance charges of ₹33.62 crore.

4.14.5 **Interest on Consumer Security Deposits**

In ARR Petition, PSPCL has claimed interest on consumer security deposits of ₹210.00 crore. As per Provisional Accounts, interest on consumer security has been booked as ₹156.07 crore. Thus, the Commission approves the Interest on consumer security deposits charges of ₹156.07 crore. This will be re-examined at the time of true-up of FY 2016-17 based on the Audited Annual Accounts.

4.14.6 **Capitalization of Interest Charges**

In ARR Petition, PSPCL has claimed ₹356.00 crore towards capitalization of interest charges. As per Provisional Accounts for FY 2016-17,Capitalization of Interest Charges has been booked as ₹284.37 crore and the same is allowed. This will be re-examined at the time of true-up of FY 2016-17 based on the Audited Annual Accounts.

The Commission, accordingly, approves capitalization of interest of ₹284.37 crore for FY 2016-17.

4.14.7 **Interest on Working Capital**

In the Tariff Order for FY 2016-17, the Commission approved working capital of ₹3116.99 crore with interest cost of ₹291.13 crore.

The Commission has determined the working capital requirement in accordance with Regulation 30 of PSERC Tariff Regulations. The details of working capital requirement and allowable interest thereon are depicted in Table 4.20.

Table 4.20: Interest on Working Capital Requirement for FY 2016-17

(₹crore)

Sr. No	Particulars	Amount
I	II	III
1.	Fuel Cost for two months	305.81
2.	Operation and Maintenance expenses for one month	407.50
3.	Receivables for two months	4088.13
4.	Maintenance Spares @15% of O&M expenses	733.50
5.	Less: Consumer Security Deposit	2899.61
6.	Total working capital requirement	2635.33
7.	Interest rate (calculated on weighted average)	9.36%
8.	**Interest on Working Capital Loan**	**246.67**

The Commission, accordingly, approves interest of ₹246.47 crore on Working Capital Requirement for FY 2016-17.

In view of above, the Interest and Finance charges are approved as detailed in Table 4.21.

Table 4.21: Interest and Finance Charges for FY 2016-17

(₹crore)

Sr. No.	Particulars	Loans as on April 01, 2016	Receipt of Loans during FY 2016-17	Re-payment of Loans during FY 2016-17	Loans as on March 31, 2017	Interest Approved by Commission
I	II	III	IV	V	VI	VII
1.	Long term loans approved by the Commission (Other than WCL and GoP Loans)	8748.79	3006.77	2956.58	8798.98	908.53
2.	Interest on GPF	1772.89	-	230.27	1542.62	130.33
3.	Finance Charges	-	-	-	-	33.62
4.	Interest on Consumer Security Deposits	2752.98	146.35	-	2899.33	156.07
5.	**Gross Interest and Finance Charges**					**1228.55**
6.	Less: Capitalization					284.37
7.	**Net Interest and Finance Charges (5-6)**					**944.18**
8.	Interest on Working Capital					246.67
9.	**Total Interest**	**13274.66**	**3153.12**	**3186.85**	**13240.93**	**1190.85**

The Commission, accordingly, approves the Interest and Finance charges of ₹1190.85 crore for PSPCL for FY 2016-17.

4.15 Return on Equity

4.15.1 In the ARR and Tariff Petition for FY 2016-17, PSPCL claimed the Return on Equity (RoE) of ₹942.62 crore against which the Commission had approved RoE of ₹942.62 crore.

4.15.2 In the ARR Petition for MYT from FY 2017-18 to FY 2019-20, PSPCL has claimed RoE of ₹942.62 crore @ 15.50% on Govt. equity holding of ₹6081.43 crore.

4.15.3 In accordance with the PSERC Tariff Regulations, the Commission allows RoE of ₹942.62 crore @15.50% on the equity of ₹6081.43 crore.

The Commission, thus, approves RoE of ₹942.62 crore to PSPCL for FY 2016-17.

4.16 Subsidy payable by GoP

In the ARR Petition for FY 2016-17(Review), PSPCL has claimed subsidy of ₹7171.23 crore. However, GoP has paid subsidy of ₹5600.70 during FY 2016-17 to PSPCL. PSPCL has submitted its provisional Annual Accounts for FY 2016-17. PSPCL vide its e-mail dated 11.09.2017 sent the category-wise detail of subsidy. Based on the provisional accounts and category wise detail of subsidy, the Commission determines the category-wise subsidy payable by GoP for FY 2016-17 as under:

AP Consumption: The Commission has considered AP consumption at 11551.62 MU, on which revenue @458 paise per unit works out to ₹5290.64 crore.

Table 4.22 Subsidy payable by GoP for different Categories

(₹crore)

Sr. No.	Category	Claimed as per Petition	Details as per provisional Accounts	Allowed by the Commission
1.	AP Consumption (including meter rent)	5617.54	5510.21	5290.64
2.	Scheduled Caste (SC)/Domestic Supply (DS) free power upto 200 units with connected load upto 1000 watts.	1125.81	1196.68	1196.68
3.	Non-SC/BPL DS consumers free power upto 200 units with connected load upto 1000 watts.	80.73	75.87	75.87
4.	Backward class DS consumer free power upto 200 units with connected load upto 1kW.	315	7.12	7.12
5.	Small Power(concessional tariff of ₹499 per unit	29.97	38.49	38.49
6.	Medium Supply (special tariff of ₹499 paisa per kVAh to new/prospective industries which comes through Progressive Punjab investors summit, 2015).	2.19	-	-
7.	Supply to Diary Farming, Fish Farming (exclusive), Goat Farming and Pig Farming.	-	1.08	1.08
8.	Gaushalla	-	2.40	-
9.	Mushroom Farming	-	0.58	-
10.	**Total**	**7171.24**	**6832.43**	**6609.88**

Interest on delayed payment of subsidy: The GoP has paid ₹5600.70 subsidy to PSPCL in FY 2016-17 in staggered instalments. The Commission observed that there was delay in payment of subsidy to PSPCL in FY 2016-17. With a view to compensate PSPCL on this account, the Commission levies interest on the delayed payment of subsidy @9.36% (effective rate of interest on loans) which works out to ₹297.07 crore.

Accordingly, the subsidy payable for FY 2016-17, inclusive of interest on delayed payment of subsidy, has been determined by the Commission at ₹6906.95 (5290.64+1196.68+75.87+7.12+38.49+1.08+297.07) crore against which GoP had paid subsidy of ₹5600.70 crore. As such, there is shortfall subsidy of ₹1306.25 (6906.95-5600.70) crore during FY 2016-17. This has been carried forward to para 9.4.

4.17 Transmission Charges payable to PSTCL

The Commission in its MYT Order of PSTCL for FY 2017-18 to FY 2019-20, determined ₹1175.72 crore as the Transmission charges payable to PSTCL by PSPCL for FY 2016-17. Accordingly, this amount is being included in the ARR of PSPCL for FY 2016-17 as Transmission Charges.

4.18 Non-Tariff Income

4.18.1 In the ARR and Tariff Petition for FY 2016-17, PSPCL projected Non-Tariff Income of ₹826.65 crore against which the Commission had approved ₹1160.62 crore.

4.18.2 In this Petition, PSPCL has revised Non-Tariff Income to ₹703.18 crore (excluding late payment surcharge and timely payment of power purchase).Further, Non-Tariff Income as per provisional Accounts of FY 2016-17 is ₹1033.63 crore for FY 2016-17 (including ₹137.70 crore on account of late payment surcharge and ₹123.21 crore on account of rebate for timely payment for power purchase)

Table 4.23: Non-Tariff Income for FY 2016-17

(₹crore)

Sr. No.	Particulars	Projected by PSPCL in the ARR
1.	Meter/service rent	92.05
2.	Late Payment Surcharge	137.70
3.	Depreciation from Consumer contribution	129.46
4.	Rebate for timely Payment of Power Purchase	123.21
5.	Misc. Receipts	268.93
6.	Misc. Charges (expect PLEC)	24.20
7.	Wheeling charges	189.33
8.	Interest on staff loans & advance	53.56
9.	Income from trading	4.16
10.	Income staff welfare activities	0.04
11.	Excess on verification	-
12.	Investments & bank balances	10.99
13.	Gain on sale of asset	-
14.	**Net Non-tariff income**	1033.63

The Commission accordingly, approves Non-Tariff Income of ₹1033.63 crore for FY 2016-17. This will be re-examined at the time of true-up of FY 2016-17 based on the Audited Annual Accounts**.**

4.19 Charges payable to GoP on power form RSD

In this Petition, PSPCL has claimed royalty charges of ₹17.62 crore payable to Government of Punjab on power from RSD which are allowed as claimed for FY 2016-17.

4.20 Demand Side Management (DSM) Fund

In the Tariff Order for FY 2016-17, the Commission provisionally approved an amount of ₹10.00 crore as claimed by PSPCL, for implementation of various DSM Programme in accordance with the provisions of DSM Regulations, during FY 2016-17. PSPCL in the ARR for MYT Control Period from FY 2017-18 to FY 2019-20, has submitted that as per clause 1.8 of PSERC DSM Regulations, 2012, 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. PSPCL has requested the Commission to allow ₹10.00 crore as DSM fund for implementation of DSM programme. **The Commission provisionally approves an amount of ₹10.00 crore as claimed by PSPCL for implementation of DSM Programme. This amount shall be kept in a separate DSM Fund and used exclusively for DSM Programme as per the procedures laid down in the DSM Regulations.**

4.21 Prior Period Expenses

Under the head of Power Purchase Cost, PSPCL has claimed ₹168.20 crore relating to previous payments made during first half of FY 2016-17. On query from the Commission, PSPCL vide its letter no. 1178 dated 23.12.2016 has intimated that these previous payments have been made on account of bills of previous period raised by various companies/generators on account of capacity charges, energy charges, water usages charges etc. on basis of various CERC orders revising AFC's. **As this amount related to prior period, as such, the Commission provisionally allows ₹168.20 crore as prior period expenses made during first half of FY 2016-17.**

4.22 Revenue from sale of power

4.22.1 The Commission approved the Revenue from existing tariff at ₹25747.94 crore for FY 2016-17 in the Tariff Order for FY 2016-17.

In the MYT Petition from FY 2017-18 to FY 2019-20, PSPCL has submitted revenue from sale of power at ₹25628.26 crore. The Commission, approve the revenue from sale of power as ₹24528.77 crore for energy sales of 44460.52 MU for FY 2016-17 including financial impact for rebate to consumer catered at higher voltage and impact to ToD tariff as detailed in Table 4.24.

Table 4.24: Revenue from Sale of Power for FY 2016-17

(₹crore)

Sr. No.	Description	As per ARR of PSPCL		As approved by the Commission	
		Energy Sale (MU)	Revenue (₹crore)	Energy Sale (MU)	Revenue (₹crore)
I	II	III	IV	V	VI
1.	Domestic	13272	7350.22	13080.39	6922.81
2.	Commercial / Non-Residential Supply	3879	2602.32	3801.94	2530.29
3.	Public Lighting	230	153.97	192	131.15
4.	Industrial Consumers				
a)	Small Power	988	493.28	983.83	651.52
b)	Medium Supply	2205	1343.81	2214.99	1330.74
c)	Large Supply	11009	7034.93	11115.19	6731.71
5.	Bulk Supply	709	455.57	661.06	393.05
6.	Railway Traction	175	118.07	183.04	124.35
7.	Common Pool	310	19.59	305.62	149.58
8.	Outside State	212	144.64	109.88	119.58
9.	AP	12265	5617.54	11551.62	5290.64
10.	Add: PLEC, MMC, Theft and Other Charges	-	569.43	-	153.29
11	Rebate to Consumers	-	(275.13)	-	-
12	**Grand Total**	**45254**	**25628.26**	**44199.56**	**24528.77**

4.23 Revenue requirement for FY 2016-17

A summary of the Aggregate Revenue Requirement of PSPCL for FY 2016-17 as discussed in the preceding paragraphs is given in the Table 4.25.

Table 4.25: Revenue Requirement for FY 2016-17

(₹crore)

Sr. No.	Items of Expenses	Approved in the Tariff Order for FY 2016-17	Proposed by PSPCL in the Review	Approved in the Review
I	II	III	IV	V
1	Cost of Fuel	2397.56	2282.00	1834.88
2	Cost of power purchase	14697.41	16489.91	15038.01
3	Employee Cost	4835.58	5114.40	4547.46
4	R & M expenses	418.30	599.43	349.53
5	A & G expenses	138.00	184.25	145.41
6	Recoverable O&M expenses on account of BBMB as per CERC order dated 12.11.2015 and 21.03.2016	(-) 191.09	-	(-) 152.37
7	Depreciation	1063.59	1183.19	1143.64
8	Interest & Finance charges	1503.74	2927.52	1190.85
9	Return on Equity	942.62	942.62	942.62
10	Transmission and SLDC charges payable to PSTCL	1151.01	1151.01	1175.72
11	RSD charges payable to GoP	8.26	17.62	17.62
12	Provision for DSM	10.00	10.00	10.00
13	Prior Period Expenses	-	-	168.20
14	**Total Revenue Requirement**	**26974.98**	**30901.94**	**26411.57**
15	Less: Non-Tariff Income	1160.62	703.18	1033.63
16	**Net Revenue Requirement**	**25814.36**	**30198.76**	**25377.94**
17	Revenue from existing tariff	25747.94	25628.26	24528.77
18	**Gap {Surplus(+)/ Deficit(-)} for FY 2016-17**	**(-) 66.42**	**(-) 4570.49**	**(-) 849.17**
19	Gap {Surplus(+)/ Deficit(-)} upto FY 2015-16	(+) 247.29	(-) 1020.68	(+) 317.37
20	Carrying Cost on Gap	(-) 14.93	(-) 408.16	-
21	**Gap {Surplus(+)/ Deficit (-)} upto FY 2016-17**	**(+) 165.94**	**(-) 5999.32**	**(-) 531.80**

Net revenue gap (deficit) is of ₹531.80 crore upto for FY 2016-17(RE) as determined above, which has been carried over to Table 5.66 of this Tariff Order.

Chapter 5

Annual Revenue Requirement for MYT Control Period from FY 2017-18 to FY 2019-20

5.1 Energy Demand (Sales)

5.1.1 Metered Energy Sales

PSPCL has projected the metered energy sales for MYT Control Period from FY 2017-18 to FY 2019-20 (MYT Control Period) based on category-wise 3 years Compounded Annual Growth Rate (CAGR). PSPCL in its ARR has submitted the category wise half yearly CAGR data for 3 years and 4 years as reproduced in Table 5.1.

Table 5.1: CAGR for the Energy Sales (%)

Category	For 1st Half		For 2nd Half		For Full Year	
	3 Years	4 Years	3 Years	4 Years	3 Years	4 Years
Domestic	9.51%	12.32%	7.12%	7.18%	8.41%	8.22%
Non-Residential	7.53%	9.69%	8.62%	6.69%	8.03%	6.95%
Industrial						
Small Power	2.14%	2.83%	1.38%	1.66%	1.76%	1.89%
Medium Supply	4.53%	4.16%	5.09%	4.40%	4.81%	3.75%
Large Supply	1.43%	6.80%	2.17%	0.96%	1.79%	2.91%
Total	**1.94%**	**6.06%**	**2.57%**	**1.54%**	**2.25%**	**2.97%**
Street Lighting	9.69%	12.77%	12.02%	9.92%	11.01%	9.71%
Bulk Supply	3.93%	6.20%	6.20%	4.81%	5.05%	4.71%
Railway Traction	8.06%	8.59%	5.93%	2.83%	7.03%	4.62%
Total Metered Sales	**5.72%**	**9.06%**	**5.08%**	**4.27%**	**5.41%**	**5.52%**

PSPCL has submitted that the growth in energy sales for domestic and commercial categories is higher in last three years. However, growth in sales for industrial categories has reduced in recent years. Accordingly, the overall growth in metered sales is slower in recent years. PSPCL has submitted that it is appropriate to consider 3 years CAGR for projection of energy sales for the control period as it caters to the economic changes in recent years. PSPCL has further submitted that the Commission has issued an order dated 09.08.2016 in the matter of petition no. 28 of 2016 regarding additional surcharge payable by open access consumers. As a result of this order, open access sales for the month of September, 2016 have shown reduction of 86.59% in comparison to open access sales in the month of September, 2015. Accordingly, PSPCL has considered the impact of reduction of open access sales for the projection of LS category sales for FY 2017-18. PSPCL has projected the metered energy sales after applying 3 years CAGR, for the MYT Control Period, which are shown in Table 5.2.

Table 5.2: Metered Sales projected by PSPCL

(MU)

Category	For FY 2017-18	For FY 2018-19	For FY 2019-20
Domestic	14387.66	15597.33	16908.72
Non-Residential	4190.92	4527.60	4891.33
Small Supply	1005.93	1023.63	1041.64
Medium Supply	2310.47	2421.70	2538.28
Large Supply	12072.94	12289.62	12510.18
Street Lighting	255.47	283.59	314.80
Bulk Supply	744.99	782.65	822.21
Railway Traction	187.22	200.38	214.46
Total Metered Sales	**35155.60**	**37126.50**	**39241.62**

The Commission accepts the metered energy sales as projected by PSPCL in the ARR for MYT Control Period. The energy sales approved by the Commission for MYT Control Period are given in Table 5.3.

Table 5.3: Metered Energy Sales within the State approved by the Commission

(MU)

Category	For FY 2017-18	For FY 2018-19	For FY 2019-20
Domestic	14387.66	15597.33	16908.72
Non-Residential	4190.92	4527.60	4891.33
Small Supply	1005.93	1023.63	1041.64
Medium Supply	2310.47	2421.70	2538.28
Large Supply	12072.94	12289.62	12510.18
Street Lighting	255.47	283.59	314.80
Bulk Supply	744.99	782.65	822.21
Railway Traction	187.22	200.38	214.46
Total Metered Sales	**35155.60**	**37126.50**	**39241.62**

The Commission, thus, approves metered energy sales within the state as 35155.60 MU, 37126.50 MU and 39241.62 MU for FY 2017-18, FY 2018-19 and FY 2019-20 respectively, as projected by PSPCL.

5.1.2 Energy Sales to Common Pool Consumers and Outside State Sale

PSPCL has projected energy sale to Common Pool consumers and Outside State energy sale for MYT Control Period as below:

Category	FY 2017-18 (MU)	FY 2018-19 (MU)	FY 2019-20 (MU)
I	II	III	IV
Common Pool Consumers	311.68	341.64	333.72
Outside State Sale	128.40	127.46	128.52

The Commission accepts the Common Pool sale of 311.68 MU, 341.64 MU and 333.72 MU for FY 2017-18, FY 2018-19 and FY 2019-20 respectively as projected by PSPCL.

Further, PSPCL has submitted 128.40 MU, 127.46 MU and 128.52 MU of energy sales under the head Outside State Sale for FY 2017-18, FY 2018-19 and FY 2019-20 respectively. The Outside State Sale consist of 52.66 MU as royalty of Himachal Pradesh (HP) in Shanan in each of FY 2017-18, FY 2018-19 & FY 2019-20. Also, it consists of 75.74 MU, 74.80 MU & 75.86 MU for FY 2017-18, FY 2018-19 and FY 2019-20 respectively, as free share of HP in RSD. The Commission considers the Outside State Sale of 52.66 MU only in each of FY 2017-18, FY 2018-19 & FY 2019-20 as per practice being followed in past Tariff Orders. The free share of HP in RSD has been taken into account while determining net generation from PSPCL's own hydel generating stations.

The Commission approves the Outside State sale at 52.66 MU for each of FY 2017-18, FY 2018-19 & FY 2019-20 and the energy sale to Common Pool consumers as 311.68 MU, 341.64 MU and 333.72 MU for FY 2017-18, FY 2018-19 & FY 2019-20 respectively.

The total metered energy sales for MYT Control Period projected by PSPCL and approved by the Commission are given in Table 5.4.

Table 5.4: Metered Energy Sales for MYT Control Period from FY 2017-18 to FY 2019-20

(MU)

Sr. No.	Category	Projected by PSPCL			Approved by the Commission		
		FY 2017-18	FY 2018-19	FY 2019-20	FY 2017-18	FY 2018-19	FY 2019-20
I	II	III	IV	V	VI	VII	VII
1.	Domestic	14387.66	15597.33	16908.72	14387.66	15597.33	16908.72
2.	Non-Residential	4190.92	4527.60	4891.33	4190.92	4527.60	4891.33
3.	Small Power	1005.93	1023.63	1041.64	1005.93	1023.63	1041.64
4.	Medium Supply	2310.47	2421.70	2538.28	2310.47	2421.70	2538.28
5.	Large Supply	12072.94	12289.62	12510.18	12072.94	12289.62	12510.18
6.	Public Lighting	255.47	283.59	314.80	255.47	283.59	314.80
7.	Bulk Supply	744.99	782.65	822.21	744.99	782.65	822.21
8.	Railway Traction	187.22	200.38	214.46	187.22	200.38	214.46
9.	**Total Metered Sales**	**35155.60**	**37126.50**	**39241.62**	**35155.60**	**37126.50**	**39241.62**
10.	Common Pool	311.68	341.64	333.72	311.68	341.64	333.72
11.	Outside State sale	128.40	127.46	128.52	52.66	52.66	52.66
12.	**Total Sales**	**35595.68**	**37595.60**	**39703.86**	**35519.94**	**37520.80**	**39628.00**

The Commission, thus, approves metered sales at 33519.94 MU, 37520.80 MU and 39628.00 MU for FY 2017-18, FY 2018-19 & FY 2019-20 respectively.

5.1.3 **AP Consumption**

PSPCL has projected AP consumption at 12336.54 MU, 12608.25 MU and 12885.96 MU for FY 2017-18, FY 2018-19 & FY 2019-20 respectively. PSPCL has submitted that it has analysed the actual sales for AP category for FY 2010-11 to FY 2015-16. The growth in actual sales (on the basis of sample meters) for AP category observed as 2.20% for 3 year CAGR, 2.96% for 4 year CAGR and 2.57% for 5 year CAGR. PSPCL has submitted that monsoon plays an important role in determining electricity consumption by agricultural consumers. A good monsoon spell reduces the reliance on agriculture pumpsets and accordingly lowers the AP consumption. In past years, all across India, the variability of monsoon was observed in growth of agriculture consumption for different period. Further, as per the State Policy of Punjab, 165000 agricultural connections were to be released in FY 2016-17. Thus, the impact of additional 165000 new connections has been considered over the previous year while projecting the number of connections for AP Consumption. Further, as per observation of the Commission in the Tariff Order for FY 2016-17, PSPCL has projected the energy sales for AP consumption for the second half of FY 2016-17 by applying 7.5% increase after CAGR of second half of 3 years. Further, for the projection of AP sales for FY 2017-18, only 3 year CAGR increase on energy sales for FY 2016-17 will not show real impact of AP connections released during first half. Thus, PSPCL has taken 3.75% increase over and above the 3 years CAGR on energy sales for FY 2016-17, for the projection of AP sales for FY 2017-18. In view of the above, PSPCL has projected the energy sales for AP consumption as 12336.54 MU, 12608.25 MU and 12885.96 MU for FY 2017-18, FY 2018-19 & FY 2019-20.

The Commission notes that PSPCL in its ARR for MYT Control Period from FY 2017-18 to FY 2019-20 has projected total number of AP consumers at the end of FY 2015-16 and at the end of FY 2016-17 as 1260860 and 1286510 respectively. Further, PSPCL has projected total number of AP consumers at the end of FY 2017-18, FY 2018-19 and FY 2019-20 as 1318379, 1351036 and 1384503 respectively. Further, the Commission has also observed that from FY 2010-11 to FY 2016-17, there is only nominal increase in AP consumption during the years. The AP consumption from FY 2010-11 to FY 2016-17, determined by the Commission in various Tariff Orders is summed up in Table 5.5.

Table 5.5: AP Consumption from FY 2010-11 to FY 2016-17

(MU)

	FY 2010-11	**FY 2011-12**	**FY 2012-13**	**FY 2013-14**	**FY 2014-15**	**FY 2015-16**
No. of consumers (at the end of the year)	1143267	1163274	1191407	1225066	1235722	1260860
AP Consumption	9656 (Trued-up)	9455 (Trued-up)	9886 (Trued-up)	9191 (Trued-up)	9630 (Trued-up)	10794 (Trued-up)
5 year CAGR	**2.25%** (FY 2010-11 to FY 2015-16)					

From the above Table, it is clear that there is no fixed pattern of variation in AP consumption from FY 2010-11 to FY 2015-16. As such, the Commission decides to estimate the AP consumption by applying 5 year CAGR of 2.25% (from FY 2010-11 to FY 2015-16) on the AP consumption determined by the Commission in review of FY 2016-17(11551 MU), to estimate the AP consumption for FY 2017-18 and also decides to apply the same CAGR to determine the AP consumption for FY 2018-19 and FY 2019-20. Thus, AP consumption for FY 2017-18, FY 2018-19 and FY 2019-20 works out to 11811.90MU, 12078.05 MU and 12350.20 MU respectively.

The Commission, thus, approves the AP consumption at 11811.90 MU, 12078.05 MU and 12350.20 MU for FY 2017-18, FY 2018-19 and FY 2019-20 respectively.

5.1.4 **Total Energy Demand (Sales)**

The total metered energy sales, AP consumption, Common Pool and Outside State energy sales projected by PSPCL and as approved by the Commission for MYT Control Period from FY 2017-18 to FY 2019-20 are given in Table 5.6.

Table 5.6: Total Energy Sales for MYT Control Period from FY 2017-18 to FY 2019-20

(MU)

Sr. No.	Category	Projected by PSPCL			Approved by the Commission		
		FY 2017-18	FY 2018-19	FY 2019-20	FY 2017-18	FY 2018-19	FY 2019-20
I	II	III	IV	V	VI	VII	VIII
1.	Total Metered sales	35155.60	37126.50	39241.62	35155.60	37126.50	39241.62
2.	AP Consumption	12336.54	12608.25	12885.96	11811.90	12078.05	12350.20
3.	**Total sales within the State (1+2)**	**47492.14**	**49734.75**	**52127.58**	**46967.50**	**49204.55**	**51591.82**
4.	Common Pool	311.68	341.64	333.72	311.68	341.64	333.72
5.	Outside State sale	128.40	127.46	128.52	52.66	52.66	52.66
6.	**Total sales**	**47932.22**	**50203.85**	**52589.82**	**47331.84**	**49598.85**	**51978.20**

The Commission, thus, approves total energy sales to different categories of consumers at 47331.84 MU, 49598.85 MU and 51978.20 MU for FY 2017-18, FY 2018-19 and FY 2019-20 respectively, including Common Pool and Outside State energy sales.

5.2 Transmission and Distribution (T&D) Losses

PSPCL has submitted that it has reduced the T&D losses from 17.98% to 14.73% i.e., by 3.25% from FY 2010-11 to FY 2015-16, which is below the target of T&D losses set by the Commission by 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 14.73% achieved during FY 2015-16 indicates the efficient and consistent performance of the PSPCL. Further, the Commission in the Tariff Order for FY 2016-17 has set the T&D loss target for FY 2016-17 as 14.50%. PSPCL has further submitted that driven by the targets and directives given by the 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 distribution loss reduction targets for the business plan have been set based on the mandatory conditions as per the central UDAY scheme for receiving matching grant due to accelerated AT&C 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 period. The investments being made under sub-transmission and distribution strengthening schemes are also expected to aid in the reduction of distribution loss both in urban and rural areas. However, due to estimated increase of 1.65 lac AP connections in FY 2016-17, PSPCL is expecting an adverse impact on its T&D loss trajectory. Based on above, PSPCL has submitted the distribution loss target expected during control period as 14.25%, 14.00% and 13.75% for FY 2017-18, FY 2018-19 and FY 2019-20 respectively.

The Commission is of the view that the losses are to be separately considered and approved for PSTCL and PSPCL. PSTCL has installed the intra-state boundary metering and the data of the same is available from July, 2016 onwards. The Commission has provisionally determined the estimated losses for PSTCL system in the Tariff order for PSTCL as 2.5% for FY 2017-18, FY 2018-19 and FY 2019-20. Further, the Commission decides to stipulate only overall target T&D losses, with segregation into transmission loss for PSTCL system and distribution loss for PSPCL system within the overall target, pending final adjustment between PSTCL and PSPCL, based on actual data for a complete financial year at a later stage.

Accordingly, the Commission approves the T&D loss trajectory for MYT Control Period as 14.25%, 14.00% and 13.75% for FY 2017-18, FY 2018-19 and FY 2019-20 respectively.

5.3 Energy Requirement

The total energy requirement is the sum of estimated energy sales including Common Pool and Outside State sales and T&D losses. The projected energy sales, T&D losses and energy requirement as reported by PSPCL and as approved by the Commission for FY 2017-18, FY 2018-19 & FY 2019-20are given in Table 5.7.

Table 5.7: Energy Requirement for MYT Control Period from FY 2017-18 to FY 2019-20

(MU)

Sr. No.	Category	Projected by PSPCL			Approved by the Commission		
		FY 2017-18	FY 2018-19	FY 2019-20	FY 2017-18	FY 2018-19	FY 2019-20
I	II	III	IV	V	VI	VII	VIII
1.	Metered sales within the State	35155.60	37126.50	39241.62	35155.60	37126.49	39241.62
2.	AP Consumption	12336.54	12608.25	12885.96	11811.90	12078.05	12350.20
3.	**Total sales within the State (1+2)**	**47492.14**	**49734.75**	**52127.58**	**46967.50**	**49204.54**	**51591.82**
4.	Common Pool sales	311.68	341.64	333.72	311.68	341.64	333.72
5.	Outside State sale	128.40	127.46	128.52	52.66	52.66	52.66
6.	**Total sales (3+4+5)**	**47932.22**	**50203.85**	**52589.82**	**47331.84**	**49598.84**	**51978.2**
7(a)	T&D losses on Sr. No. 3 (%)	14.25%	14.00%	13.75%	14.25%	14.00%	13.75%
7(b)	T&D losses on Sr. No. 3	7892.28	8096.35	8310.19	7805	8010	8225
8.	**Total energy input required [6+7(b)]**	**55824.50**	**58300.20**	**60900.01**	**55136.84**	**57608.84**	**60203.20**
9.	**Energy at Transmission periphery to be sold within the State (8-4-5)**				**54772.50**	**57214.54**	**59816.82**
10(a)	Transmission Loss (%) on Sr. No. 9				2.50%	2.50%	2.50%
10(b)	Transmission Loss on Sr. No. 9				1369	1430	1495
11.	Energy available to PSPCL [9-10(b)				53403.50	55784.54	58321.82
12(a)	Distribution Loss				6436	6580	6730
12(b)	Distribution Loss (%)				12.05%	11.80%	11.54%
13.	**Energy available for Sale to consumers within the State [11-12(a)]**				**46967.50**	**49204.54**	**51591.82**

5.4 PSPCL's own Generation

5.4.1 Thermal Generation

PSPCL has projected gross thermal generation at 3500.90 MU, 3468.60 MU & 3774.88 MU for FY 2017-18, FY 2018-19 & FY 2019-20 respectively for GGSSTP and 2093.20 MU, 2103.23 MU &2387.12 MU for FY 2017-18, FY 2018-19 & FY 2019-20 respectively for GHTP. PSPCL has not projected any generation from GNDTP station for the Control Period from FY 2017-18 to FY 2019-20.

PSPCL has submitted that the Commission issued directions to PSPCL that the surrender of energy should be as per merit order dispatch from all the thermal generating stations, including PSPCL's own thermal generating stations. As such, PSPCL has projected own thermal generation based on merit order rather than plant availability. Further, GNDTP is an old generating station, whose units have already outlived their useful life of 25 years. Furthermore, as per power demand scenario in the State of Punjab, GNDTP units remained under reserve outage for longer periods, and during running period, units remained running on backing down for maximum time as per directions of Power Controller, Patiala. Frequent stop/start after reserve outage and running of units under backing down adversely affects the performance of units. During FY 2015-16, there were cumulative 32 stop/start-ups of GNDTP units (4 Units) after reserve outages and total number of reserve outages during FY 2015-16 were for 23547 hours. During backing down, power generation is reduced but most of the auxiliaries remain running at nearly full load, which results in increase in percentage auxiliary consumption. Under the above said circumstances, the variable cost of the GNDTP becomes higher as compared to other plants and therefore, no power has been scheduled in merit order projection during the control period. PSPCL has further submitted that it has not claimed any fuel cost against GNDTP during the control period, as no power has been scheduled in Merit Order Dispatch projection during control period and any variable expense shall be claimed during true up.

PSPCL has submitted that the generation plan for PSPCL generating stations for the control period i.e. from FY 2017-18 to FY 2019-20, has been projected on the basis of various parameters, such as Plant Load Factor, Heat Rate and Auxiliary Consumption. The performance parameters for PSPCL's Generating stations shall be as per CERC norms.

Plant Availability

- The plant availability of GNDTP for FY 2017-18, FY 2018-19 & FY 2019-20 has been projected at 89.00%, 91.00% & 81.93% respectively, based on planned maintenance schedule. During FY 2017-18, maintenance for Units I, III and IV has been planned for 30 days each. During FY 2018-19, maintenance for Units II and IV has been planned for 30 days each. During FY 2019-20, maintenance for Units I and III has been planned for 30 days each.
- The plant availability of GGSSTP for FY 2017-18, FY 2018-19 & FY 2019-20 has been projected at 91.02%, 91.48% &91.95% respectively, based on planned maintenance schedule. During FY 2017-18, the maintenance/overhauling has been planned for unit-I for 45 days, unit-II for 30 days and unit-IV for 45 days. During FY 2018-19, the maintenance/overhauling has been planned for unit-III for 45 days, unit-V for 30 days and unit-VI for 35 days. During FY 2019-20, the maintenance/overhauling has been planned for unit-I for 40 days, unit-II for 30 days and unit-IV for 30 days.
- The plant availability of GHTP for FY 2017-18, FY 2018-19 & FY 2019-20 has been projected at 90.65%, 99.12% & 93.95% respectively, based on planned

maintenance schedule. During FY 2017-18, the maintenance/overhauling has been planned for unit-I for 51 days, unit-II for 45 days and unit-IV for 45 days. During FY 2018-19, the maintenance/overhauling has been planned for unit-I for 14 days. During FY 2019-20, the maintenance/overhauling has been planned for unit-II for 45 days, unit-III for 20 days and unit-IV for 20 days.

The Commission noted that the generating plants are operating as part of integrated grid and abide by the rules and regulations framed by CERC. In view of this, to manage the frequency-load balance, PSPCL has to follow the instructions from Punjab State Load Despatch Centre (PSLDC). PSPCL has suffered loss of generation because of backing down of generation on instructions received from PSLDC in the recent years, even though it was available for generation. Further, PSPCL has surplus energy available from tied up sources from central generating stations and IPPs in the State. PSPCL has to surrender the excess energy, to manage demand and maintain energy balance. The Commission in the Tariff Orders for FY 2014-15, FY 2015-16 and FY 2016-17 directed PSPCL that the surrendering of energy should be as per merit order dispatch from all the thermal generating stations, including PSPCL’s own thermal generating stations. As such, **the Commission approves the gross thermal generation from PSPCL’s own thermal plants, as projected by PSPCL, as shown in Table 5.8.**

Table 5.8: Gross Thermal Generation

(MU)

Sr. No.	Station	Approved generation		
		FY 2017-18	FY 2018-19	FY 2019-20
I	II	III	IV	V
1.	GNDTP	0.00	0.00	0.00
2.	GGSSTP	3500.90	3468.60	3774.88
3.	GHTP	2093.20	2103.23	2387.12
4.	**Total**	**5594.10**	**5571.83**	**6162.00**

Performance Parameters

Regulations 36 of PSERC (Terms and Conditions for Determination of Generation, Transmission, Wheeling and Retail Supply Tariff) Regulations, 2014 (PSERC MYT Regulations) specifies that the norms for performance parameters for a generating company i.e. availability, load factor, station heat rate, specific oil consumption, auxiliary consumption etc. shall be as per the CERC norms or as determined by the Commission, with the provision that a generating unit which undergoes Renovation and Modernization, the Commission shall specify a separate set of norms to be adopted during the renovation and modernization period and for the subsequent period. These norms shall be specified by the Commission on case to case basis as part of the Renovation and Modernization Capital Investment approval. Consequently, the generation tariff shall be determined accordingly by the Commission.

CERC vide its notification no. L-1/144/2013/CERC dated 21.02.2014 has notified Terms and Conditions of Tariff Regulations, 2014 for electricity tariff for the five year period beginning from 01.04.2014, wherein operating norms for thermal plants have also been specified. The Commission decides to follow these norms for MYT Control Period from FY 2017-18 to FY 2019-20. CERC, has, however, not specified any norms for 110/120 MW units and the Commission had, in the case of GNDTP, adopted the norms specified for Tanda Thermal Power Generating Station of NTPC, which has 4 units of 110 MW each. The Commission notes that units I, II, III and IV of GNDTP have achieved commercial operation on 31.05.2007, 19.01.2006, 07.12.2012 and 27.09.2014 respectively, after completion of renovation and modernization. The individual performance parameters have been further discussed, later in this chapter.

Auxiliary Consumption and Net Generation

PSPCL, in the ARR, has projected the auxiliary consumption for MYT Control Period for all the plants as 11.26% for GNDTP, 9.05% for GGSSTP and 8.98% for GHTP.

Furthermore, PSPCL has submitted that the norm for auxiliary consumption for GNDTP station of 110 MW/120 MW unit sets should be benchmarked with that applicable for Tanda station at 12% in accordance with the provisions of the State Regulations as linked with the CERC norms. The Commission observes that PSPCL is making repeated reference to APTEL's order dated 18.10.2012 notwithstanding APTEL's final judgement dated 22.04.2015. The matter has been discussed at length in para 2.4.1 of this Tariff Order.

PSPCL has further submitted that as regards the Auxiliary Consumption, Regulation 6.3B of CERC (Indian Electricity Grid Code) (Fourth Amendment) Regulations, 2016 also provides for compensation for auxiliary consumption on account of part load operations, which is reproduced 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

PSPCL has submitted that in view of the above, the actual Auxiliary Consumption for FY 2015-16 has been considered as the base values for the projection for Control Period, and further, based on projected loading of thermal generating stations during the Control period, Auxiliary Consumption applicable as per CERC Tariff Regulations, 2014 has been considered for control period. The assumptions submitted by PSPCL for auxiliary consumption, are as under:

Plant	Auxiliary Consumption as per CERC Norms	Increase as per CERC Regulations		FY 2015-16 (Actual)	Auxiliary Consumption for Control Period
GNDTP	12.00%	1.00%	13.00%	11.26%	11.26%
GGSSTP	8.50%	1.00%	9.50%	9.05%	9.05%
GHTP	8.50%	1.00%	9.50%	8.98%	8.98%

PSPCL has submitted that it has considered the actual Auxiliary Consumption for FY 2015-16 as the projected auxiliary consumption for the Control Period. PSPCL has further submitted that 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 Power Controller, Patiala. 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 resulted in increase in percentage auxiliary consumption. Under the above circumstances, PSPCL has prayed to consider the actual Auxiliary Consumption at the time of true up exercise. The auxiliary consumption submitted by PSPCL for MYT Control Period, is shown in Table 5.9.

Table 5.9: Auxiliary Consumption (%) submitted by PSPCL

Plant	FY 2017-18	FY 2018-19	FY 2019-20
GNDTP	11.26%	11.26%	11.26%
GGSSTP	9.05%	9.05%	9.05%
GHTP	8.98%	8.98%	8.98%

The Commission observes that PSPCL has filed petition (No. 16 of 2017) seeking amendment in PSERC MYT Regulations, which is under consideration by the Commission. **The Commission approves the auxiliary consumption as 8.50% & 8.50% for GGSSTP & GHTP respectively as per performance parameters specified by CERC and 11.00% for GNDTP as approved in the past, however, same may be revisited as per the decision of the Commission regarding the petition.**

Auxiliary consumption and net generation from the three thermal generating stations, as projected by PSPCL and as approved by the Commission for FY 2017-18, FY 2018-19 and FY 2019-20, are given in Table 5.10A, Table 5.10B and Table 5.10C respectively.

Table 5.10A: Generation, Auxiliary Consumption and Net Generation for Thermal Plants of PSPCL for FY 2017-18

(MU)

Sr. No.	Station	Projected by PSPCL			Approved by the Commission		
		Gross generation	Auxiliary consumption	Net generation	Gross generation	Auxiliary consumption	Net generation
I	II	III	IV	V	VI	VII	VIII
1.	GNDTP	0	0 11.26%	0	0	0 11.00%	0
2.	GGSSTP	3500.90	316.83 9.05%	3184.07	3500.90	297.58 8.50%	3203.32
3.	GHTP	2093.20	187.97 8.98%	1905.23	2093.20	177.92 8.50%	1915.28
4.	**Total**	**5594.10**	**504.80**	**5089.30**	**5594.10**	**475.50**	**5118.60**

Table 5.10B: Generation, Auxiliary Consumption and Net Generation for Thermal Plants of PSPCL for FY 2018-19

(MU)

Sr. No.	Station	Projected by PSPCL			Approved by the Commission		
		Gross generation	Auxiliary consumption	Net generation	Gross generation	Auxiliary consumption	Net generation
I	II	III	IV	V	VI	VII	VIII
1.	GNDTP	0	0 11.26%	0	0	0 11.00%	0
2.	GGSSTP	3468.60	313.91 9.05%	3154.69	3468.60	294.83 8.50%	3173.77
3.	GHTP	2103.23	188.87 8.98%	1914.36	2103.23	178.77 8.50%	1924.46
4.	**Total**	**5571.83**	**502.78**	**5069.05**	**5571.83**	**473.60**	**5098.23**

Table 5.10C: Generation, Auxiliary Consumption and Net Generation for Thermal Plants of PSPCL for FY 2019-20

(MU)

Sr. No.	Station	Projected by PSPCL			Approved by the Commission		
		Gross generation	Auxiliary consumption	Net generation	Gross generation	Auxiliary consumption	Net generation
I	II	III	IV	V	VI	VII	VIII
1.	GNDTP	0	0 11.26%	0	0	0 11.00%	0
2.	GGSSTP	3774.88	341.63 9.05%	3433.25	3774.88	320.86 8.50%	3454.02
3.	GHTP	2387.12	214.36 8.98%	2172.76	2387.12	202.91 8.50%	2184.21
4.	**Total**	**6162.00**	**555.99**	**5606.01**	**6162.00**	**523.77**	**5638.23**

Net thermal generation approved by the Commission for FY 2017-18, FY 2018-19 and FY 2019-20 is 5118.60MU, 5098.23 MU and 5638.23 MU respectively as shown in Column VIII of Table 5.10A, Table 5.10B and Table 5.10C.

5.4.2 **Hydel Generation**

In the ARR, PSPCL has submitted that it has considered the actual month-wise average generation achieved during the corresponding months of the preceeding 3 years from FY 2014-15 to FY 2016-17 for Hydro Generating Stations. Further, the generation of 82.90 MU has been considered for Mukerian Hydro Stage II Generating Station for the Control period.

The generation projected by PSPCL is approved by the Commission as given in Table 5.11.

Table 5.11: Own Hydel Generation

(MU)

Sr. No.	Station	Generation projected by PSPCL and approved by the Commission		
		FY 2017-18	FY 2018-19	FY 2019-20
I	II	III	IV	V
1.	Shanan	519.00	519.00	519.00
2.	UBDC Stage-I	168.00	168.00	168.00
3.	UBDC Stage-II	168.00	168.00	168.00
4.	RSD	1702.00	1680.00	1704.00
5.	MHP	1185.00	1185.00	1185.00
6.	MHP Stage-II	82.90	82.90	82.90
7.	ASHP	720.00	720.00	720.00
8.	Micro Hydel	5.09	5.09	5.09
9.	**Total own hydel generation (gross)**	**4549.99**	**4527.99**	**4551.99**

The Commission approves estimated gross generation of 4549.99 MU, 4527.99 MU and 4551.99 MU from PSPCL's own hydel stations. The Commission approves PSPCL's share (net) from BBMB at 3150.62 MU, 3453.49 MU & 3373.45 MU and

Common Pool share at 311.68 MU, 341.64 MU & 333.72 MU for FY 2017-18, FY 2018-19 & FY 2019-20 respectively as projected by PSPCL. The total hydel generation approved by the Commission is as depicted in Table 5.12.

Table 5.12: Total Hydel Generation

(MU)

Sr. No.	Station	FY 2017-18		FY 2018-19		FY 2019-20	
		Projected by PSPCL	Approved by the Commission	Projected by PSPCL	Approved by the Commission	Projected by PSPCL	Approved by the Commission
I	II	III	IV	V	VI	VII	VIII
1.	Shanan	519.00	519.00	519.00	519.00	519.00	519.00
2.	UBDC Stage-1	168.00	168.00	168.00	168.00	168.00	168.00
3.	UBDC Stage-2	168.00	168.00	168.00	168.00	168.00	168.00
4.	RSD	1702.00	1702.00	1680.00	1680.00	1704.00	1704.00
5.	MHP	1185.00	1185.00	1185.00	1185.00	1185.00	1185.00
6.	MHP Stage-2	82.90	82.90	82.90	82.90	82.90	82.90
7.	ASHP	720.00	720.00	720.00	720.00	720.00	720.00
8.	Micro hydel	5.09	5.09	5.09	5.09	5.09	5.09
9.	**Total own generation (Gross)**	**4549.99**	**4549.99**	**4527.99**	**4527.99**	**4551.99**	**4551.99**
10.	Auxiliary consumption and transformation loss	12.68	37.46	12.47	37.24	12.66	37.48
11.	HP share in RSD	**	75.74	**	74.80	**	75.86
12.	**Total own generation (Net)**	**4537.31**	**4436.79**	**4515.52**	**4415.95**	**4539.33**	**4438.65**
13.	**PSPCL share from BBMB**						
(a)	PSPCL share (Net)	3150.62	3150.62	3453.49	3453.49	3373.45	3373.45
(b)	Common pool share (Net)	311.68	311.68	341.64	341.64	333.72	333.72
14.	**Total from BBMB (Net)**	**3462.30**	**3462.30**	**3795.13**	**3795.13**	**3707.17**	**3707.17**
15.	**Total hydro (Net) (Own + BBMB)**	**7999.61**	**7899.09**	**8310.65**	**8211.08**	**8246.50**	**8145.82**

**Transformation losses @0.5%, auxiliary consumption @0.5% for RSD generation and UBDC stage-1 generation (having static exciters) and @0.2% for others.*
*** PSPCL has projected HP share in RSD under Energy Sales and has been discussed in para 5.1.2.*

The Commission, thus, approves net hydel generation of 7899.09 MU,8211.08 MU and 8145.82 MU for FY 2017-18, FY 2018-19 and FY 2019-20 respectively.

5.4.3 **Total availability of energy from PSPCL's own stations and share from BBMB**

The approved net generation from own thermal and hydel stations of PSPCL and share from BBMB is given in Table 5.13.

Table 5.13: Net Own Generation and share from BBMB

(MU)

Sr. No.	Station	Energy available (ex-bus)		
		FY 2017-18	FY 2018-19	FY 2019-20
I	II	III	IV	V
1.	Thermal stations	5118.60	5098.23	5638.23
2.	Hydel stations	4436.79	4415.95	4438.65
3.	Share from BBMB (including 312 MU share of Common Pool consumers)	3462.30	3795.13	3707.17
4.	**Total availability**	**13017.69**	**13309.31**	**13784.05**

The Commission approves total energy availability from PSPCL's own generating stations (thermal and hydel), including share from BBMB, as 13017.69 MU, 13309.31 MU and 13784.05 MU for FY 2017-18, FY 2018-19 and FY2019-20 respectively.

5.5 Purchase of Power

The total energy required to meet the demand including Common Pool and Outside State sales, energy available from own generating stations of PSPCL including its share from BBMB and balance energy requirement to be met through purchase from Central Generating Stations and other sourcesduring FY 2017-18, FY 2018-19 and FY 2019-20 is given in Table 5.14.

Table 5.14: Energy Required, Energy Available and Balance Energy Requirement

(MU)

Sr. No.	Station	FY 2017-18	FY 2018-19	FY 2019-20
I	II	III	IV	V
1.	Total Energy Required (including Common Pool and outside state sale)	55136.84	57608.84	60203.20
2.	Energy available from own generating stations of PSPCL (Net)	13017.69	13309.31	13784.05
3.	**Balance Energy requirement to be met through purchase from Central Generating Stations and other sources (Net)**	**42119.15**	**44299.53**	**46419.15**

The balance energy requirement (net) of 42119.15 MU, 44299.23 MU and 46419.15 MU for FY 2017-18, FY 2018-19 and FY 2019-20 respectively, has to be met through purchase from Central Generating Stations and other sources. This is against balance energy requirement (net) to be purchased from Central Generating Stations and other sources of 42735.59 MU, 44920.50 MU and 47047.50 MU as projected by PSPCL for FY 2017-18, FY 2018-19 and FY 2019-20 respectively.

5.6 Energy Balance

The energy balance, which takes into account the approved energy sales to different categories of consumers, T&D losses and energy availability, is given in Table 5.15.

Table 5.15: Energy Balance

(MU)

Sr. No.	Particulars	FY 2017-18		FY 2018-19		FY 2019-20	
		Projected by PSPCL	Approved by the Commission	Projected by PSPCL	Approved by the Commission	Projected by PSPCL	Approved by the Commission
I	II	III	IV	V	VI	VII	VIII
A) Energy Requirement							
1.	Metered Sales	35155.60	35155.60	37126.49	37126.49	39241.62	39241.62
2.	AP Consumption	12336.54	11811.90	12608.25	12078.05	12885.96	12350.2
3.	**Total Sales within the State**	**47492.14**	**46967.5**	**49734.74**	**49204.54**	**52127.58**	**51591.82**
4.	T & D Losses (%) on Sr. No. 3	14.25%	14.25%	14.00%	14.00%	13.75%	13.75%
5.	T & D losses on Sr. No. 3	7892	7805	8096	8010	8310	8225
6.	Sales to Common pool consumers	311.68	311.68	341.64	341.64	333.72	333.72
7.	Outside State Sale	128.40	52.66	127.46	52.66	128.52	52.66
8.	**Total Requirement**	**55824.22**	**55136.84**	**58299.84**	**57608.84**	**60899.82**	**60203.20**
B) Energy Available							
9.	Own generation (Ex-bus)						
(a)	Thermal	5089.30	5118.60	5069.05	5098.23	5606.01	5638.23
(b)	Hydro	4537.31	4436.79	4515.52	4415.95	4539.33	4438.65
10.	Share from BBMB (including share of Common Pool consumers)	3462.30	3462.30	3795.14	3795.13	3707.18	3707.17
11.	Purchase (net)	42735.31	42119.15	44920.13	44299.53	47047.30	46419.15
12.	**Total Availability**	**55824.22**	**55136.84**	**58299.84**	**57608.84**	**60899.82**	**60203.20**

5.7 Fuel Cost

PSPCL has projected fuel cost for FY 2017-18, FY 2018-19 and FY 2019-20 as ₹1847.39 crore, ₹1840.37 crore and ₹2036.39 crore respectively based on operational and cost parameters as discussed in detail in ongoing paras.

5.7.1 For GNDTP

PSPCL has projected fuel cost as Nil for GNDTP as no power has been projected to be scheduled in merit order dispatch projections for Control Period. The operational and cost parameters submitted by PSPCL for 2017-18, FY 2018-19 and FY 2019-20 are detailed in Table 5.16.

Table 5.16: Operational and Cost Parameters projected by PSPCL for GNDTP

Year	PLF (%)	Station heat rate (kCal/kWh)	Transit loss of coal (%)	Coal price excluding transit loss (₹/MT)	Calorific value of coal (kCal/Kg)	Price of oil (₹/kL)	Specific oil consumption (ml/kWh)	Calorific value of oil (kCal/lt)
I	II	III	IV	V	VI	VII	VIII	IX
FY 2017-18	0.00	2864.79	1.00	4855.00	4265.57	40410.00	1.00	9400
FY 2018-19	0.00	2864.79	1.00	4855.00	4265.57	40410.00	1.00	9400
FY 2019-20	0.00	2864.79	1.00	4855.00	4265.57	40410.00	1.00	9400

A. Plant Load Factor (PLF)

PSPCL has submitted that the normative Plant Load Factor for availing the incentive as per CERC Tariff Regulations 2014 is 85%. It has projected power procurement from own thermal plants as per Merit Order principal excluding one unit each of GGSSTP and GHTP. On account of this, the plant load factor for control period has reduced for all plants including GNDTP. Further, keeping in view the of realistic scenario, PSPCL has projected PLF for GNDTP as 0.00% for FY 2017-18, FY 2018-19 and FY 2019-20.

The Commission has considered the submissions of PSPCL and will revisit the issue while undertaking the true up exercise.

B. Station Heat Rate (SHR)

PSPCL has submitted that the Commission has approved SHR of 2750 kCal/kWh for FY 2015-16 based on CERC norms for Tanda TPS (after its R&M), as specified in CERC Tariff Regulations, 2014. PSPCL has further submitted that the GNDTP is much older plant and SHR approved by the Commission is on lower side as compared to that attained by PSPCL for GNDTP. Further, SHR tends to increase due to lower plant load factor and higher partial load losses. PSPCL has achieved SHR of 2864.79 kCal/kWh during FY 2015-16. PSPCL has further submitted that CERC has recognised the fact that Station Heat Rate and Auxiliary Consumption of the plant are affected on account of partial load.

PSPCL has submitted that as per CERC norms, Station Heat Rate of GNDTP is 2750 kCal/kWh and after adding 6%, it will become 2915 kCal/kWh. However, PSPCL has considered the actual SHR achieved during FY 2015-16 i.e. 2864.79 kCal/kWh for FY 2017-18, FY 2018-19 and FY 2019-20. PSPCL has further submitted that 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 Power Controller, 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 SHR. PSPCL has further prayed to consider the actual Station Heat Rate achieved at the time of true up exercise.

The Commission noted that CERC has not specified any norms for 110/120 MW units. The Commission decides to allow SHR of 2750 kCal/kWh for GNDTP units for FY 2017-18, FY 2018-19 and FY 2019-20, based on CERC norms for Tanda TPS (after its R&M), as specified in CERC Tariff Regulations, 2014. As already disused in para 5.4 of this Tariff Order, t**he Commission may revisit the SHR norms as per the decision of the Commission regarding the petition No. 16 of 2017.**

C. Secondary Oil Consumption

PSPCL has projected specific oil consumption for GNDTP as 0.50 ml/kWh for FY 2017-18, FY 2018-19 and FY 2019-20, as per CERC norms, which the Commission approves.

D. Transit Loss

PSPCL has submitted that it has been observed from past trends that the coal transit losses are inconsistent. The coal transit losses are not within the control of PSPCL and attributable to the following reasons:

(i) Calibration of measuring instruments: Weighing of coal at two different locations having different calibration of weighing machines leads to an error more than permissible limits.

(ii) The transit loss occurs because of seasonal variation during transportation of coal, which changes the moisture content of coal during transportation.

(iii) The transportation of coal happens through open wagons. As soon as, the goods are loaded on the wagon, it becomes owner's risk and Railways disown the responsibility. Coal is subject to pilferages at all halts, which is beyond the control of Railways.

(iv) During unloading, small quantities of coal get stuck at the edges of the transport wagons due to moisture and remain undelivered to the plant, contributing to transit losses.

(v) PSPCL has considered the normative transit losses of 1.5% for GNDTP for estimating the fuel cost.

In view of the above, the Commission approves the transit loss (for domestic coal) for GNDTP as per actual, subject to a maximum of 1.0% for FY 2017-18, FY 2018-19 and FY 2019-20 as per PSERC regulations. However, no such loss is permissible in case same is priced on FOR destination basis.

E. Price of Coal and Oil

PSPCL has submitted price of coal for GNDTP as ₹4855.00 per MT for FY 2017-18, FY 2018-19 and FY 2019-20. Further, PSPCL has submitted price of oil for GNDTP as ₹40410.00 per KL for FY 2017-18, FY 2018-19 and FY 2019-20.

The Commission decided to get price of coal and oil validated being a major item of expense. Further, the Commission has decided to take the validated price of coal and oil of first half of FY 2016-17 for calculation of fuel cost for FY 2017-18, FY 2018-19 and FY 2019-20. The validated value for price of coal is ₹4913.00 per MT and of oil is ₹36019.63 per KL, which the Commission decides to take for further calculations.

F. GCV of Coal and Oil

PSPCL has submitted GCV of coal as 4097.00 KCal/Kg for FY 2017-18, FY 2018-19 and FY 2019-20 and GCV of oil for GNDTP as 9500.00 KCal/Litre for FY 2017-18, FY 2018-19 and FY 2019-20.

The Commission decided to get the GCV of coal and oil validated, and has decided to take the validated value of GCV of coal and oil of first half of FY 2016-17 for calculation of fuel cost for FY 2017-18, FY 2018-19 and FY 2019-20. The validated value of GCV of coal is 4388.94 KCal/Kg and of oil is 9875.08 KCal/Litre, which the Commission decides to take for further calculations.

Based on above, the fuel cost for GNDTP for FY 2017-18, FY 2018-19 and FY 2019-20 has been worked out as detailed in Table 5.17.

Table 5.17: Fuel Cost for GNDTP

Sr. No.	Item	Derivation	Unit	FY 2017-18	FY 2018-19	FY2019-20
I	II	III	IV	V	VI	VII
1	Generation	A	MU	0	0	0
2	Heat Rate	B	kcal/kWh	2750	2750	2750
3	Specific oil consumption	C	ml/kwh	0.5	0.5	0.5
4	Calorific value of oil	D	kcal/litre	9875.08	9875.08	9875.08
5	Calorific value of coal	E	kcal/kg	4388.94	4388.94	4388.94
6	Overall heat	F = (A x B)	Gcal	0	0	0
7	Heat from oil	G = (A x C x D) / 1000	Gcal	0	0	0
8	Heat from coal	H = (F-G)	Gcal	0	0	0
9	Oil consumption	I=(Gx1000)/D	KL	0	0	0
10	Transit loss of coal	J	(%)	1	1	1
11	Total coal consumption excluding transit loss	K=(H*1000)/E	MT	0	0	0
12	Quantity of PANEM coal and Imported coal	L	MT	0	0	0
13	Quantity of coal other than PANEM coal and Imported coal	M=K-L	MT	0	0	0
14	Quantity of coal other than PANEM coal and Imported coal, including transit loss	N=M/(1-J/100)	MT	0	0	0
15	Total quantity of coal required	O=L+N	MT	0	0	0
16	Price of oil	P	₹/KL	36019.63	36019.63	36019.63
17	Price of coal	Q	₹/MT	4913.00	4913.00	4913.00
18	Total Cost of oil	R=P x I / 107	₹crore	0.000	0.000	0.000
19	Total Cost of coal	S=O x Q/107	₹crore	0.000	0.000	0.000
20	Total Fuel cost	T=R+S	₹crore	0.000	0.000	0.000

5.7.2 **For GGSSTP**

PSPCL has projected fuel cost as ₹1132.66 crore for gross generation of 3500.90 MU, ₹1122.21 crore for gross generation of 3468.60 MU and ₹1221.31 crore for gross generation of 3774.88 MU for FY 2017-18, FY 2018-19 and FY 2019-20 respectively for GGSSTP. The operational and cost parameters submitted by PSPCL for FY 2017-18, FY 2018-19 and FY 2019-20 are detailed in Table 5.18.

Table 5.18: Operational and Cost Parameters projected by PSPCL for GGSSTP

Year	PLF (%)	Station heat rate (kCal/kWh)	Transit loss of coal (%)	Coal price excluding transit loss (₹/MT)	Calorific value of coal (kCal/Kg)	Price of oil (₹/kL)	Specific oil consumption (ml/kWh)	Calorific value of oil (kCal/lt)
I	II	III	IV	V	VI	VII	VIII	IX
FY 2017-18	34.85	2597.00	1.00	5181.04	4207.00	22478.46	0.50	9900
FY 2018-19	35.35	2597.00	1.00	5181.04	4207.00	22478.46	0.50	9900
FY 2019-20	37.09	2597.00	1.00	5181.04	4207.00	22478.46	0.50	9900

A. Plant Load Factor (PLF)

PSPCL has submitted that the normative Plant Load Factor for availing the incentive as per CERC Tariff Regulations, 2014 is 85%. It has projected power procurement from own thermal plants as per Merit Order principal excluding one unit each of GGSSTP and GHTP. On account of this, the plant load factor for control period has reduced. Further, keeping in view realistic scenario, PSPCL has projected PLF for GGSSTP as 34.85%, 35.35% and 37.09% for FY 2017-18, FY 2018-19 and FY 2019-20 respectively.

The Commission has considered the submissions of PSPCL and will revisit the issue while undertaking the true up exercise.

B. Station Heat Rate (SHR)

PSPCL has achieved SHR of 2597.00 kCal/kWh during FY 2015-16 and the same has been considered by PSPCL for the Control Period. Further, PSPCL has made similar submissions in respect of SHR as discussed in para 5.7.1 for GNDTP.

The Commission decides to allow SHR of 2450 kCal/kWh for GGSSTP units for FY 2017-18, FY 2018-19 and FY 2019-20, as specified in CERC Tariff Regulations, 2014. As far as compensation is concerned, as submitted by PSPCL, the Commission may revisit the SHR norms as per the decision of the Commission regarding the petition No. 16 of 2017.

C. Secondary Oil Consumption

PSPCL has projected specific oil consumption for GGSSTP as 0.50 ml/kWh for FY 2017-18, FY 2018-19 and FY 2019-20, as per CERC norms, which the Commission approves.

D. Transit Loss

PSPCL has submitted the transit loss at 1.00% and has made similar submissions as discussed in para 5.7.1 for GNDTP.

As discussed in para 5.7.1, the Commission approves transit loss (for domestic coal) for GGSSTP as per actual, subject to a maximum of 1.0% for FY 2017-18, FY 2018-19 and FY 2019-20. However, no such loss is permissible in case same is priced on FOR destination basis.

E. Price of Coal and Oil

PSPCL has submitted price of coal for GGSSTP as ₹5181.04 per MT for FY 2017-18, FY 2018-19 and FY 2019-20. Further, PSPCL has submitted price of oil for GGSSTP as ₹22478.46 per KL for FY 2017-18, FY 2018-19 and FY 2019-20.

The Commission decided to get price of coal and oil validated being a major item of expense. Further, the Commission has decided to take the validated price of coal and oil of first half of FY 2016-17 for calculation of fuel cost for FY 2017-18, FY 2018-19 and FY 2019-20. The validated value for price of coal is ₹5124.72 per MT and of oil is ₹23165.07 per KL, which the Commission decides to take for further calculations.

F. GCV of Coal and Oil

PSPCL has submitted GCV of coal as 4207KCal/Kg for FY 2017-18, FY 2018-19 and FY 2019-20 and GCV of oil as for GGSSTP as 9900.00 KCal/Litre for FY 2017-18, FY 2018-19 and FY 2019-20.

The Commission decided to get the GCV of coal and oil validated and has decided to take the validated value of GCV of coal and oil of first half of FY 2016-17 for calculation of fuel cost for FY 2017-18, FY 2018-19 and FY 2019-20. The validated value of GCV of coal is 4544.86KCal/Kg and of oil is 9857.06KCal/Litre, which the Commission decides to take for further calculations.

Based on above, the fuel cost for GGSSTP for FY 2017-18, FY 2018-19 and FY 2019-20 has been worked out as detailed in Table 5.19.

Table 5.19: Fuel Cost for GGSSTP

Sr. No.	Item	Derivation	Unit	FY 2017-18	FY 2018-19	FY 2019-20
I	II	III	IV	V	VI	VII
1	Generation	A	MU	3500.90	3468.60	3774.88
2	Heat Rate	B	kcal/kWh	2450	2450	2450
3	Specific oil consumption	C	ml/kwh	0.5	0.5	0.5
4	Calorific value of oil	D	kcal/litre	9857.06	9857.06	9857.06
5	Calorific value of coal	E	kcal/kg	4544.86	4544.86	4544.86
6	Overall heat	F = (A x B)	Gcal	8577205	8498070	9248456
7	Heat from oil	G = (A x C x D) / 1000	Gcal	17254	17095	18605
8	Heat from coal	H = (F-G)	Gcal	8559951	8480975	9229851
9	Oil consumption	I=(Gx1000)/D	KL	1750	1734	1887
10	Transit loss of coal	J	(%)	1	1	1
11	Total coal consumption excluding transit loss	K=(H*1000)/E	MT	1883436	1866059	2030833
12	Quantity of PANEM coal and Imported coal	L	MT	0	0	0
13	Quantity of coal other than PANEM coal and Imported coal	M=K-L	MT	1883436	1866059	2030833
14	Quantity of coal other than PANEM coal and Imported coal, including transit loss	N=M/(1-J/100)	MT	1902461	1884908	2051346
15	Total quantity of coal required	O=L+N	MT	1902461	1884908	2051346
16	Price of oil	P	₹/KL	23165.07	23165.07	23165.07
17	Price of coal	Q	₹/MT	5124.72	5124.72	5124.72
18	Total Cost of oil	R=P x I / 107	₹ crore	4.054	4.017	4.371
19	Total Cost of coal	S=O x Q/107	₹ crore	974.958	965.963	1051.257
20	**Total Fuel cost**	**T=R+S**	**₹ crore**	**979.012**	**969.980**	**1055.628**
21	**Per unit Cost (for gross generation)**	**U=T*10/A**	**₹/kWh**	**2.80**	**2.80**	**2.80**
22	**Per unit Cost (for net generation)**	**V**	**₹/kWh**	**3.06**	**3.06**	**3.06**

5.7.3 **For GHTP**

PSPCL has projected fuel cost as ₹714.73 crore for gross generation of 2093.20 MU, ₹718.15 crore for gross generation of 2103.23 MU and ₹815.09 crore for gross generation of 2387.12 MU for FY 2017-18, FY 2018-19 and FY 2019-20 respectively for GGSSTP. The operational and cost parameters submitted by PSPCL for FY 2017-18, FY 2018-19 and FY 2019-20 are detailed in Table 5.20.

Table 5.20: Operational and Cost Parameters projected by PSPCL for GHTP

Year	PLF (%)	Station heat rate (kCal/kWh)	Transit loss of coal (%)	Coal price excluding transit loss (₹/MT)	Calorific value of coal (kCal/Kg)	Price of oil (₹/kL)	Specific oil consumption (ml/kWh)	Calorific value of oil (kCal/lt)
I	II	III	IV	V	VI	VII	VIII	IX
FY 2017-18	29.13	2512.15	1.00	5495.00	4097.00	35825.00	0.50	9500
FY 2018-19	26.74	2512.15	1.00	5495.00	4097.00	35825.00	0.50	9500
FY 2019-20	31.86	2512.15	1.00	5495.00	4097.00	35825.00	0.50	9500

A. Plant Load Factor (PLF)

PSPCL has submitted that the normative Plant Load Factor for availing the incentive as per CERC Tariff Regulations 2014 is 85%. It has projected the power procurement from own thermal plants as per Merit Order principal excluding one unit each of GGSSTP and GHTP. On account of this, the plant load factor for control period has reduced. Further, keeping in view realistic scenario, PSPCL has projected PLF for GHTP as 29.13%, 26.74% and 31.86% for FY 2017-18, FY 2018-19 and FY 2019-20 respectively.

The Commission has considered the submissions of PSPCL and will revisit the issue while undertaking true up exercise.

B. Station Heat Rate (SHR)

PSPCL has achieved the SHR of 2512.15kCal/kWh during FY 2015-16 and same has been considered by PSPCL for the Control Period. Further, PSPCL has submitted similar submissions in respect of SHR as discussed in para 5.7.1 for GNDTP.

The Commission decides to allow SHR of 2450 kCal/kWh for GHTP units I & II and 2428kCal/kWh for GHTP units III & IV for FY 2017-18, FY 2018-19 and FY 2019-20, as per CERC Tariff Regulations, 2014. As far as the compensation is concerned, as submitted by PSPCL, the Commission may revisit the SHR norms as per the decision of the Commission regarding the petition No. 16 of 2017.

C. Secondary Oil Consumption

PSPCL has projected specific oil consumption for GHTP as 0.50 ml/kWh for FY 2017-18, FY 2018-19 and FY 2019-20, as per CERC norms, which the Commission approves.

D. Transit Loss

PSPCL has submitted the transit loss at 1.00% and has submitted similar submissions as discussed in para 5.7.1 for GNDTP.

As already discussed in para 5.7.1, the Commission approves transit loss (for domestic coal) for GHTP as per actual, subject to a maximum of 1.0% for FY 2017-18, FY 2018-19 and FY 2019-20. However, no such loss is permissible in case same is priced on FOR destination basis.

E. Price of Coal and Oil

PSPCL has submitted price of coal for GHTP as ₹5495.00 per MT for FY 2017-18, FY 2018-19 and FY 2019-20. Further, PSPCL has submitted price of oil for GNDTP as ₹35825.00 per KL for FY 2017-18, FY 2018-19 and FY 2019-20.

The Commission decided to get price of coal and oil validated being a major item of expense. Further, the Commission has decided to take the validated price of coal and oil of first half of FY 2016-17 for calculation of fuel cost for FY 2017-18, FY 2018-19 and FY 2019-20. The validated value for price of coal is ₹5324.00 per MT and of oil is ₹31945.00 per KL, which the Commission decides to take for further calculations.

F. GCV of Coal and Oil

PSPCL has submitted the GCV of coal as 4097.00KCal/Kg for FY 2017-18, FY 2018-19 and FY 2019-20 and GCV of oil for GHTP as 9500.00 KCal/Litre for FY 2017-18, FY 2018-19 and FY 2019-20.

The Commission decided to get the GCV of coal and oil validated and has decided to take the validated value of GCV of coal and oil of first half of FY 2016-17 for calculation of fuel cost for FY 2017-18, FY 2018-19 and FY 2019-20. The validated value of GCV of coal is 4277.62KCal/Kg and of oil is 9888.58KCal/Litre, which the Commission decides to take for further calculations.

Based on above, the fuel cost for GHTP for FY 2017-18, FY 2018-19 and FY 2019-20 has been worked out as detailed in Table 5.21.

Table 5.21: Fuel Cost for GHTP

Sr. No.	Item	Derivation	Unit	FY 2017-18			FY 2018-19			FY 2019-20		
				GHTP Unit I & II	GHTP Unit III & IV	Total	GHTP Unit I & II	GHTP Unit III & IV	Total	GHTP Unit I & II	GHTP Unit III & IV	Total
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII
1	Generation	A	MU	845.27	1247.93	2093.20	849.32	1253.91	2103.23	963.96	1423.16	2387.12
2	Heat Rate	B	kcal/kWh	2450	2428		2450	2428		2450	2428	
3	Specific oil consumption	C	ml/kwh	0.5	0.5		0.5	0.5		0.5	0.5	
4	Calorific value of oil	D	kcal/litre	9888.58	9888.58		9888.58	9888.58		9888.58	9888.58	
5	Calorific value of coal	E	kcal/kg	4277.62	4277.62		4277.62	4277.62		4277.62	4277.62	
6	Overall heat	F = (A x B)	Gcal	2070912	3029974		2080834	3044493		2361702	3455432	
7	Heat from oil	G = (A x C x D) / 1000	Gcal	4179	6170		4199	6200		4766	7037	
8	Heat from coal	H = (F-G)	Gcal	2066733	3023804		2076635	3038293		2356936	3448395	
9	Oil consumption	I=(Gx1000)/D	KL	423	624		425	627		482	712	
10	Transit loss of coal	J	(%)	1	1		1	1		1	1	
11	Total coal consumption excluding transit loss	K=(H*1000)/E	MT	483150	706889		485465	710277		550992	806148	
12	Quantity of PANEM coal and Imported coal	L	MT	0	0		0	0		0	0	
13	Quantity of coal other than PANEM coal and Imported coal	M=K-L	MT	483150	706889		485465	710277		550992	806148	
14	Quantity of coal other than PANEM coal and Imported coal, including transit loss	N=M/(1-J/100)	MT	488030	714029		490369	717452		556558	814291	
15	Total quantity of coal required	O=L+N	MT	488030	714029		490369	717452		556558	814291	
16	Price of oil	P	₹/KL	31945.00	31945.00		31945.00	31945.00		31945.00	31945.00	
17	Price of coal	Q	₹/MT	5324.00	5324.00		5324.00	5324.00		5324.00	5324.00	
18	Total Cost of oil	R=P x I / 107	₹.crore	1.351	1.993	3.344	1.358	2.003	3.361	1.54	2.274	3.814
19	Total Cost of coal	S=O x Q/107	₹ crore	259.827	380.149	639.976	261.072	381.971	643.043	296.311	433.529	729.84
20	**Total Fuel cost**	**T=R+S**	**₹ crore**	**261.178**	**382.142**	**643.320**	**262.43**	**383.974**	**646.404**	**297.851**	**435.803**	**733.654**
21	**Per unit Cost (for gross generation)**	**U=T*10/A**	**₹/kWh**	**3.09**	**3.06**	**3.07**	**3.09**	**3.06**	**3.07**	**3.09**	**3.06**	**3.07**
22	**Per unit Cost (for net generation)**	**V**				**3.36**			**3.36**			**3.36**

* Generation for Units I & II and Units III & IV has been calculated on pro-rata basis as per actual generation of H1 of FY 2016-17.

5.7.4 **Total Fuel Cost**

The total fuel cost is summarized in Table 5.22.

Table 5.22: Total Fuel Cost

(₹crore)

Station	FY 2017-18	FY 2018-19	FY 2019-20
I	II	III	IV
GNDTP	0.000	0.000	0.000
GGSSTP	979.012	969.980	1055.628
GHTP	643.320	646.404	733.654
Total	**1622.332**	**1616.384**	**1789.282**

5.8 Power Purchase

5.8.1 **Projection by PSPCL:** PSPCL has projected power purchase cost excluding intra state transmission charges payable to PSTCL as ₹17988.67 crore, ₹19159.52 crore and ₹19959.34 crore for FY 2017-18, FY 2018-19 and FY 2019-20 respectively.

PSPCL has submitted that demand of power is being met by procurement of power from Central Generating Stations and other external sources apart from State's own Generation. The major sources are Central Generating Stations (CGSs) viz. NTPC, NHPC, NPC, SJVNL & THDC, Independent Power Producers (IPPs), Co-Generation Plants, Banking Arrangements and through Traders. As per directions of the Commission, PSPCL has projected procurement of power from different sources including its own thermal generation plants on Merit Order Dispatch Principle. PSPCL has estimated the purchase of power for Control Period as per Merit Order Principle, wherein sources of power have been considered in ascending merit order of variable cost. Sources of power with the lowest variable per unit cost have been scheduled to be procured first (base load) and those with the highest per unit cost at last (peak load). Sources with equal merit order have been considered together in proportion to their available capacity. 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. PSPCL has further submitted that the energy availability from PSPCL's Own Thermal and Hydro Generating Stations has been considered based on Generation Plan prepared for the Control Period. PSPCL has projected the power procurement from own thermal plants as per Merit Order Principal, excluding one unit each for GGSSTP and GHTP. In addition to the availability from own Thermal and Hydro generation plants, PSPCL also procures power from CGSs, 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, State of Punjab also receives a quantum of power from the unallocated share in various CGSs at different intervals during a year. The projections for 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 control period. The projections for energy availability from all existing Central Thermal & Nuclear Generating stations has been taken same as the actual energy availability for FY 2016-17. The projections for Inter-State Transmission losses have been taken at same percentage of actual grid losses to the gross power import for March, 2016. Further, projected energy from New Hydro and Thermal projects has been calculated in accordance to the CEA regulations / Designed Energy as mentioned in the PPAs. Furthermore, State of Punjab is also purchasing power from Independent Power Producers (IPPs) including Talwandi Sabo TPS (TSPL), Rajpura TPS (NPL), Goindwal Sahib TPS (GVK) etc. The projections for energy availability from IPPs in the State of Punjab have been taken same as the actual energy availability for FY 2016-17. However, during the Control Period, PSPCL has projected to have surplus energy available from tied up sources. In order to manage demand and maintain energy balance, the surplus energy has been proposed to be surrendered. PSPCL has submitted that surrendering has been proposed as per Merit Order of power purchase from existing thermal and gas stations on monthly basis, and merit order is based upon the variable rates of September, 2016. After surrender of energy, only variable charges have been reduced and fixed/other charges have been assumed same. Accordingly, the surplus power available from thermal and gas stations has been surrendered as per merit order schedule.

Some new power plants (as given in Table 5.23) have also been considered by PSPCL for assessing energy availability during the Control Period. PSPCL has submitted that the 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 slippages in the commissioning, as no firm schedule is available.

Table 5.23: Details of New Power Plants

Name of the Plant	Plant Capacity (MW)	PSPCL Share (Gross) (MW)	Commissioning Schedule
New Projects in FY 2017-18			
Mukerian Hydel Project Stage-II	9x2 = 18 MW	18 MW	October, 2016 (Unit-1)
			March, 2017 (Unit-2)
Bokaro TPS -A (DVC)	1x500 MW	200 MW	November, 2016
Meja TPS	2x660 = 1320 MW	33 MW	March, 2017 (Unit-1)
			October, 2017 (Unit-2)
Tiesta 3-HEP	6x200 = 1200 MW	340MW	March, 2017 (All Units)
New Projects in FY 2018-19			
Tanda Stage-II TPS	2x660 = 1320 MW		October, 2018
Parbati-II HEP	800 MW	80 MW	December, 2018
Vishnugad Pipalkoti HEP	4x111 = 444 MW	44 MW	October, 2018
New Projects in FY 2019-20			
North Karanpura STP	3x660 = 1980 MW	70 MW	October, 2019
Tapovan Vishnugad HEP	4x130 = 520 MW	52 MW	October, 2019

PSPCL has further submitted that as per directions of the Commission regarding Short Term Power Purchase Plan, there is no deficit for short term procurement as per the current estimates being projected in ARR. In case, any requirement is assessed, it will be procured on day-to-day basis. The energy availability and estimated purchase for the Control Period as projected by PSPCL is shown in the following Table 5.24.

Table 5.24: Energy Availability and Net Purchase for Control Period

(MU)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20
Energy Availability from various sources(including from own generating stations)	80708	84337	85857
Estimated Net Purchase	55824	58300	60900
Surplus Power (including from own generating stations)	24884	26037	24957

PSPCL, in the ARR, has proposed to surrender excess energy available in FY 2017-18, FY 2018-19 and FY 2019-20 from CGSs and IPPs as 13404.44 MU, 14492.03 MU and 13931.37 MU respectively.

The projections made by PSPCL in the ARR, regarding energy availability, energy scheduled and energy to be surrendered from various CGSs and IPPs (from where surplus power has been proposed to be surrendered), are as given in Table 5.25.

Table 5.25: Details of projections of energy availability, energy scheduled and energy to be surrender as per ARR for Control Period

(MU)

Sr. No.	Source	FY 2017-18			FY 2018-19			FY 2019-20		
		Energy availability/ entitlement for purchase (gross)	Energy scheduled (gross)	Energy to be surrendered (gross)	Energy availability/ entitlement for purchase (gross)	Energy scheduled (gross)	Energy to be surrendered (gross)	Energy availability/ entitlement for purchase (gross)	Energy scheduled (gross)	Energy to be surrendered (gross)
I	II	III	IV	V	VI	VII	VIII	IX	X	XI
1	Anta (G/F)	119.23	89.50	29.73	119.23	79.38	39.85	119.23	89.50	29.73
2	Anta (R/F)	278.20	-	278.20	278.20	-	278.20	278.20	-	278.20
3	Auraiya (G/F)	202.06	67.54	134.52	202.06	67.54	134.52	202.06	67.54	134.52
4	Auraiya (R/F)	471.46	-	471.46	471.46	-	471.46	471.46	-	471.46
5	Dadri Gas (G/F)	321.24	107.37	213.87	321.24	107.37	213.87	321.24	107.37	213.87
6	Dadri Gas (R/F)	749.56	-	749.56	749.56	-	749.56	749.56	-	749.56
7	Unchahar-I	265.63	87.75	177.88	265.63	82.25	183.38	265.63	87.75	177.88
8	Unchahar-II	442.62	137.05	305.57	442.59	153.41	289.18	436.04	130.47	305.57
9	Unchahar-III	120.88	36.46	84.42	130.17	43.51	86.66	120.89	43.51	77.38
10	Farakka (ER)	151.24	50.55	100.69	151.24	50.55	100.69	151.24	50.55	100.69
11	Kahalgaon-I (ER)	337.36	253.25	84.11	337.36	213.63	123.73	337.36	253.25	84.11
12	Kahalgaon-II (ER)	921.82	709.88	211.94	899.13	661.41	237.72	917.23	730.62	186.61
13	NCTPS- 2C (DADRI II)	4.46	2.01	2.45	4.46	2.01	2.45	4.46	2.01	2.45
14	IGSTPS Jhajjar (NTPC JV)	9.06	7.26	1.80	9.06	7.26	1.80	9.06	7.26	1.80
15	Meja TPS	160.29	35.75	124.54	213.92	71.50	142.42	213.92	71.50	142.42
16	Tanda Stage-II TPS				426.67	-	426.67	855.68	286.01	569.67
17	North Karanpura							226.26	-	226.26
18	Durgapur TPS (DVC)	1320.89	979.86	341.03	1326.72	969.74	356.98	1334.05	993.02	341.03
19	Pragati-III Gas Plant Bawana (PPCL)	1021.00	341.26	679.74	1021.00	341.26	679.74	1021.00	341.26	679.74
20	Talwandi Sabo TPS (Sterlite)	12904.53	6094.76	6809.77	12904.53	5841.45	7063.08	12904.53	6390.57	6513.96
21	NPL Rajpura TPS (L&T)	8861.37	8694.17	167.20	8924.55	8450.44	474.11	8822.72	8620.90	201.82
22	Goindwal Sahib TPS (GVK)	3658.96	1223.00	2435.96	3658.96	1223.00	2435.96	3668.99	1226.35	2442.64
23	**Total**	**32321.86**	**18917.42**	**13404.44**	**32857.74**	**18365.71**	**14492.03**	**33430.81**	**19499.44**	**13931.37**

PSPCL has submitted that the power purchase cost for each station has been estimated as per the capacity charges and the variable charges for the respective stations. PSPCL has submitted the basis of fixation of Annual Fixed Charges, Variable Charges and Transmission Charges as under:

A. Basis of fixation of Annual Fixed Charges:

i) 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.

ii) 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 Charges (AFC) 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 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 as calculated by various central sector generators and charged in their bills have been considered. AFC for Control Period for various plants have been assumed same as applicable for FY 2015-16.

iii) For tariff block period from FY 2014-19, as regards NTPC Stations, CERC has issued final Tariff Orders for many plants, except for Rihand III and IGSTPS Jhajjar. Hence, the provisional Tariff Orders issued by CERC are applicable for these plants, which have been considered for projections.

iv) For other CGSs such as Nathpa Jhakeri HEP, Tehri HEP, Koteshwar HEP, final orders are yet to be issued by CERC. Therefore, generators are raising the bills as per provisional tariff. After award of final orders, generators shall claim the arrear amount. For Durgapur TPS, DVC is provisionally raising the bills, as final CERC Tariff Order is yet to be issued. Also, for Pragati-III Gas plant, PPCL is provisionally raising the bills, as final CERC Tariff Order is yet to be issued. Accordingly, the provisional Tariff Order has been considered for projections for Control period.

v) The tariff for NAPP/RAPP plants is governed by the guidelines of Department of Atomic Energy, which has been considered for projections for the Control Period.

B. Basis of fixation of Variable Charges:

i) PCPCL has not considered any upward rise in cost for the projection of energy charges for the control period. PSPCL has submitted that any change in cost from the level approved by the Commission shall be determined in accordance with the Fuel Cost Adjustment (FCA) formula specified by the Commission in the Conduct of Business Regulations, and recovered from the consumers after following the procedure detailed in the Conduct of Business Regulations.

ii) Variable charges (VC) for the month of September, 2016 for all thermal, gas and nuclear plants, already supplying power under long term contracts, have been assumed during the control period. For existing hydro plants, VC is based upon the applicable AFC. Moreover, for the projection of control period, rate of energy from Tala HEP and Mallana-II has been taken same during the control period as applicable for the month of September, 2016.

iii) The variable rates for FY 2017-18 to FY 2019-20 have been assumed same as that of second half (H2) of FY 2016-17 without any escalation.

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

v) The variable rates of new plants whose rates have not been quoted have been assumed maximum rates of Thermal & Hydro Plants i.e. Jhajhar and Tehri.

vi) For Sasan UMPP, tariff has been considered as per PPA. Fixed charges are calculated on the basis of normative availability of 80%. For Mundra UMPP, VC for control period have been taken equal to that for the month of September, 2016 and no further escalation has been assumed during the control period. Fixed charges have been calculated as per PPA on the basis of normative availability of 80%.

vii) For Pragati Bawana, VC for control period have been taken equal to that for the month of September, 2016 and no further escalation has been assumed during the control period. Fixed Cost has been considered on the basis of normative availability.

viii) VC for GVK TPS, TSPL TPS and NPLTPS have been assumed as 294 paise/unit, 264.05 paise/unit and 227.80 paise/unit during the Control Period on the basis of normative availability of 80%.

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

B. Basis of fixation of Transmission Charges:

i) Long term inter-state transmission charges recovered by PGCIL are being charged as per PoC (Point of connection) methodology w.e.f. June 01, 2011. The PGCIL charges for FY 2017-18 to FY 2019-20 have been escalated by 5%

every year from FY 2016-17.

ii) Intra-state transmission charges payable to PSTCL have been estimated as actual payable and approved for FY 2016-17 as per PSERC Tariff Order for FY 2016-17, and expenses for the Control Period have been considered by applying escalation of 5% to expenses approved for FY 2016-17.

Based on above, projections for Power Purchase Cost for the Control Period has been submitted by PSPCL as under:

Particulars	FY 2017-18	FY 2018-19	FY 2019-20
Power purchase cost (₹ crore)	17988.67	19159.52	19959.34
Intra-state transmission charges payable to PSTCL (₹ crore)	1208.56	1268.99	1332.44
Total Power Purchase Cost (₹ crore)	19197.23	20428.51	21291.78

5.8.2 **Requirement of Energy through Purchase:** As discussed in para 5.5, the energy requirement (net) of 42119.15 MU, 44299.54 MU and 46419.15 MU for FY 2017-18, FY 2018-19 and FY 2019-20 respectively, has to be met through purchase from Central Generating Stations and other sources. The transmission loss external to PSTCL system has to be added to arrive at the total quantum of energy to be purchased**.**

PSPCL has submitted the external loss for FY 2017-18, FY 2018-19 and FY 2019-20 as 1.98%, 2.06% and 2.08% respectively. PSPCL has quantified the total external loss for FY 2017-18, FY 2018-19 and FY 2019-20 as 476.12 MU, 520.25 MU and 543.97 MU. The Commission has also considered the external loss for FY 2017-18, FY 2018-19 and FY 2019-20 as projected by PSPCL. As such, the gross energy to be purchased, works out for FY 2017-18 as 42595.27 MU (42119.15MU + external transmission loss of 476.12 MU), for FY 2018-19 as 44819.79 MU (44299.54 MU + external transmission loss of 520.25 MU) and for FY 2019-20 as46963.12 MU (46419.15 MU + external transmission loss of 543.97 MU).

5.8.3 **Entitlement/Power Purchase from Central Generating Stations and Other Sources:**

PSPCL meets its demand of power by procurement from Central Generating Stations and other external sources, apart from State's own Generation. Major sources from which PSPCL procures power are Central Generating Stations viz NTPC, NHPC, NPC, SJVNL, THDC, DVC, Co-generation/NRSE Plants, Banking Arrangements, Traders and IPPs. PSPCL has submitted that in order to optimize the cost of power procured, PSPCL has scheduled its power procurement from various Central

Generating Stations (CGSs) and other sources on merit order principles. It has considered the load profile during various seasons, technical constraints and avoidable cost after giving due consideration to contractual obligations, for deciding the procurement/generation schedule. Source of power with the lowest per unit variable cost has been scheduled to be procured first (base load) and those with highest per unit cost at last (peak load). Sources with equal merit order have been considered together in proportion to their available capacity.

The quantum of power purchase projected by PSPCL from various plants (with surrender) for FY 2017-18, FY 2018-19 and FY 2019-20 is given under column III of Table 5.26, Table 5.27 and Table 5.28 respectively, which the Commission provisionally approves.

However, there may be increase in demand/consumption of various categories of consumers than as projected in the ARR on account of various steps taken by PSPCL. Further, for the purpose of energy/power purchase balance, the Commission has considered additional surrender of power. The actual impact of surrendering of power by PSPCL will be considered at the time of review/true up, for which PSPCL shall make detailed submissions along with reasons thereof, to the satisfaction of the Commission.

5.8.4 **Cost of Power Purchase for FY 2017-18, FY 2018-19 and FY 2019-20**

(a) Central Generating Stations (CGSs)

PSPCL in the ARR petition has submitted that since its power procurement plan is based on merit order principle, capacity charges payable on the basis of allocated share and contractual obligations have been considered inspite of the fact that power procurement from various sources has been regulated on the basis of load demand vis-a vis per unit variable cost from the generating sources. Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 for the period 2014-19 have been notified on 21.02.2014. CERC has issued Tariff Orders for Anta, Singrauli, Rihand-I, Kahalgoan-I, Bairasuil, Salal, Tanakpur, Chamera-I, Chamera-II, Uri, Dhauli Ganga and Dulhasti for the period 2014-19. As such, the capacity charges for CGSs have been considered for these stations as per Tariff Orders for the period 2014-19issued by CERC and for others capacity charges has been considered as per Tariff Orders for the period 2009-14 issued by CERC for the respective stations.

Thermal Stations of NTPC

Fixed Cost

As per CERC Tariff Regulations for the period 2014-19, fixed cost is payable in proportion to the share allocation of PSPCL in each of the Central Generating Stations and the Commission has accepted this principle.

CERC has not issued Tariff Orders for the period 2014-19 for all NTPC stations (except Anta, Singrauli, Rihand-I & Kahalgoan-I). As such, the Commission has considered the Annual Fixed Charges (AFC) in case of NTPC stations (including Koldam HEP)as per AFC shown in the bills for the month of September, 2016 and for stations Anta, Singrauli, Rihand-I & Kahalgoan-I, AFC have been considered as per Tariff Orders for the period 2014-19 for the respective stations.

For new plants i.e. Meja TPS, Tanda Stage-II, North Karanpura TPS & Tapovan Vishnugad HEP of NTPC, the Commission has provisionally approved fixed charges and variable charges as projected by PSPCL in the ARR.

Variable Cost

PSPCL has considered variable charges for existing NTPC plants as per energy bills for the month of September, 2016, which the Commission provisionally approves.

Hydel Stations of NHPC & NTPC

Fixed Cost

CERC Tariff Regulations for the period 2014-19 provide that fixed cost is payable in proportion to the share allocation of PSPCL in each of the Central Generating Stations and the Commission has accepted this principle. Further, as per CERC Tariff Regulations for the period 2014-19, the capacity charge is payable inclusive of incentive and Free Energy for Home State, and as such capacity charge is to be worked out in proportion to the actual Plant Availability Factor achieved and also after taking into consideration Free Energy for Home State (12% in case of Bairasuil, Salal, Tanakpur, Chamera-I, Chamera-II, Uri, Dhauli Ganga, Dulhasti& Parbati-III and 13% in case of Chamera-III, Sewa-II & Uri-II).

CERC has issued Tariff Orders for Bairasuil, Salal, Tanakpur, Chamera-I, Chamera-II, Uri, Dhauli Ganga and Dulhasti for the period 2014-19. As such, AFC has been considered as per Tariff Orders for the period 2014-19 for the respective stations and for other stations, AFC has been considered by the Commission as per NHPC bills for September, 2016.

For new plants i.e. Kishanganga and Parbati-II of NHPC, the Commission has provisionally approved fixed charges and variable charges as projected by PSPCL in the ARR.

Variable Cost

PSPCL has calculated fixed charges and variable charges for existing NHPC plants as per applicable Annual Fixed Charges.

The Commission has considered variable charges for different hydel stations of NHPC as projected by PSPCL in the ARR.

In case of Kishanganga and Parbati-II of NHPC (new stations), the Commission provisionally approves the energy charges as projected by PSPCL.

Under the title of 'other charges', PSPCL has submitted the water usage charges for NHPC stations, which the Commission provisionally approves.

NPC Stations

PSPCL has considered variable charges for existing NPC stations as per bills for September, 2016, which the Commission provisionally approves.

(b) Long-term Power Purchase from New and Renewable Sources of Energy (NRSE) within the State

Quantum and rate of Long-term power purchase from NRSE are provisionally approved as per PSPCL's projections in the ARR petition.

(c) Power Purchase from other Central Sector Power Plants

(i) Hydel Stations

For Nathpa Jhakri (SJVNL), Rampur (SJVNL), Tehri (THDC), Koteshwar (THDC) and Vishnugad Pipalkoti (THDC), the annual fixed charges and variable charges have been considered as projected by PSPCL in the ARR.

(ii) Thermal Stations

For Durgapur TPS (DVC) and Raghunathpura, PSPCL has considered the annual fixed charges and variable charges as per bills for the month of September, 2016, which the Commission provisionally approves.

For new plant i.e. Bokaro TPS (DVC), the Commission has provisionally approved fixed charges and variable charges as projected by PSPCL in the ARR.

(d) Power Purchase and Sale under Banking

PSPCL has submitted the net power sale under banking arrangements as 662.40 MU (gross) for each of FY 2017-18, FY 2018-19 and FY 2019-20 and has considered the rate/cost under banking as 367.32paise/unit, which the Commission provisionally approves. Further, PSPCL has also proposed the open access charges for Banked Energy as ₹19.28 crore for each year of the Control Period, which the Commission provisionally approves.

(e) Power Purchase from Traders and IPPs (Long Term Power)

(i) Hydel Stations

PSPCL in its ARR and MYT petition for FY 2017-18 to FY 2019-20 has projected the power purchase cost from Mallana-II HEP (PTC) for each year as ₹143.86 crore, comprising fixed cost as ₹64.22 crore and variable cost of ₹79.64 crore for purchase of 354.88 MU from the project. The Commission provisionally approves the aforementioned cost of power purchase from Malana-II HEP, subject to determination/approval of Annual Fixed Cost (AFC) for FY 2017-18, FY 2018-19 and FY 2019-20 in the petition(s) to be filed by Everest Power Private Limited for the respective years.

For Tala HEP (PTC), PSPCL has assumed variable charges as 202 paise/unit, as per bills for September, 2016, which the Commission provisionally approves.

For Tiesta HEP (PTC), the Commission has provisionally approved fixed charges and variable charges as projected by PSPCL in the ARR.

(ii) Thermal Stations

For Pragati-III Gas Plant Bawana (PPCL), Mundra UMPP (CGPL) and Sasan UMPP (RPL), PSPCL has assumed annual fixed charges and Variable Charges as per bills for September, 2016, which the Commission provisionally approves.

For NVVNL Bundled Power (NTPC Thermal Power + Solar Power), PSPCL has projected in the ARR the variable charges as per bill for September, 2016, which the Commission provisionally approves.

(iii) IPPs within the State

For FY 2017-18, PSPCL in ARR petition, has projected the availability of power from Talwandi Sabo TPS (TSPL), Rajpura TPS (NPL) and GVK (Goindwal Sahib) TPS (GVK) as 12904.53 MU, 8861.37 MU and 3658.96 MU respectively, against which PSPCL has projected the power purchase as 6094.76 MU, 8694.17 MU and 1223.00 MU respectively. Accordingly, the Commission provisionally approves the power purchase from Talwandi Sabo TPS, Rajpura TPS and GVK (Goindwal Sahib) TPS as 6094.76 MU, 8694.17 MU and 1223.00 MU respectively. In the ARR and MYT petition, PSPCL has projected the variable cost considering the variable charges as

265.05 paise per unit for Talwandi Sabo TPS, 227.80 paise per unit for Rajpura TPS and 294 paise per unit for GVK (Goindwal Sahib) TPS for FY 2017-18, which the Commission provisionally approves. The fixed cost for the Talwandi Sabo TPS and Rajpura TPS has been projected by PSPCL as ₹1677.59 crore and ₹1321.23 crore based on aforementioned availability of power from these projects and fixed charges of ₹1.491 per unit for Rajpura TPS and ₹1.300 per unit for Talwandi Sabo TPS as per Schedule 11 of the respective PPAs, which also the Commission provisionally approves. For GVK (Goindwal Sahib) TPS, the fixed cost has been projected by PSPCL as ₹704.72 crore, according to which the fixed charges work out to ₹1.926 per unit. Considering that GVK (Goindwal Sahib) is yet to file petition in the Commission for determination of capital cost/tariff, the Commission provisionally approves the fixed cost of GVK (Goindwal Sahib) as ₹704.72 crore.

For FY 2018-19, PSPCL in its ARR and MYT petition for FY 2017-18 to FY 2019-20, has projected the availability of power from Talwandi Sabo TPS (TSPL), Rajpura TPS (NPL) and GVK (Goindwal Sahib) TPS (GVK) as 12904.53 MU, 8924.55 MU and 3658.96 MU respectively, against which PSPCL has projected the power purchase as 5841.45 MU, 8450.44 MU and 1223.00 MU respectively. Accordingly, the Commission provisionally approves the power purchase from Talwandi Sabo TPS, Rajpura TPS and GVK (Goindwal Sahib) TPS as 5841.45 MU, 8450.44 MU and 1223.00 MU respectively. In the ARR and MYT petition, PSPCL has projected the variable cost considering the variable charges as 265.05 paise per unit for Talwandi Sabo TPS, 227.80 paise per unit for Rajpura TPS and 294 paise per unit for GVK (Goindwal Sahib) TPS for FY 2018-19, which the Commission provisionally approves. The fixed cost for the Talwandi Sabo TPS and Rajpura TPS has been projected by PSPCL as ₹1673.72 crore and ₹1272.64 crore based on aforementioned availability of power from these projects and fixed charges of ₹1.426 per unit for Rajpura TPS and ₹1.297 per unit for Talwandi Sabo TPS as per Schedule 11 of the respective PPAs, which also the Commission provisionally approves. For GVK (Goindwal Sahib) TPS, the fixed cost has been projected by PSPCL as ₹704.72 crore, according to which the fixed charges work out to ₹1.926 per unit. Considering that GVK (Goindwal Sahib) is yet to file petition in the Commission for determination of capital cost/tariff, the Commission provisionally approves the fixed cost of GVK (Goindwal Sahib) as ₹704.72 crore.

For FY 2019-20, PSPCL in its ARR and MYT petition for FY 2017-18 to FY 2019-20, has projected the availability of power from Talwandi Sabo TPS (TSPL), Rajpura TPS (NPL) and GVK (Goindwal Sahib) TPS (GVK) as 12904.53 MU, 8822.72 MU and 3668.99 MU respectively, against which PSPCL has projected the power purchase as 6390.57 MU, 8620.90 MU and 1226.35 MU respectively. Accordingly, the Commission provisionally approves the power purchase from Talwandi Sabo TPS, Rajpura TPS and GVK (Goindwal Sahib) TPS as 6390.57 MU, 8620.90 MU and 1226.35 MU respectively. In the ARR and MYT petition, PSPCL has projected the variable cost considering the variable charges as 265.05 paise per unit for Talwandi Sabo TPS, 227.80 paise per unit for Rajpura TPS and 294 paise per unit for GVK (Goindwal Sahib) TPS for FY 2019-20, which the Commission provisionally approves. The fixed cost for the Talwandi Sabo TPS and Rajpura TPS has been projected by PSPCL as ₹1658.23 crore and ₹1167.25 crore based on aforementioned availability of power from these projects and fixed charges of ₹1.323 per unit for Rajpura TPS and ₹1.285 per unit for Talwandi Sabo TPS as per Schedule 11 of the respective PPAs, which also the Commission provisionally approves. For GVK (Goindwal Sahib) TPS, the fixed cost has been projected by PSPCL as ₹706.65 crore, according to which the fixed charges work out to ₹1.926 per unit. Considering that GVK (Goindwal Sahib) is yet to file petition in the Commission for determination of capital cost/tariff, the Commission provisionally approves the fixed cost of GVK (Goindwal Sahib) Ltd. as ₹706.65 crore.

(f) Power Purchase and Sale from Traders (Short-Term)

PSPCL in the ARR has projected gross power purchase (without surrender) of 56616.16 MU, 59932.80 MU & 61522.86 MU and 43211.72 MU, 45440.77 MU& 47591.49 MU (with surrender) for FY 2017-18, FY 2018-19 and FY 2019-20 respectively, from Central Generating Stations and other sources. PSPCL has not projected any short-term power purchase in the ARR. PSPCL has rather submitted that it shall have surplus energy available from tied up sources from Central Generating Stations and other sources, during FY 2017-18, FY 2018-19 and FY 2019-20.

The gross power purchase requirement has been worked out under para 5.8.2as 42595.27 MU, 44819.79 MU and 46963.12 MU for FY 2017-18, FY 2018-19 and FY 2019-20 respectively. As such, PSPCL has to surrender excess power to the tune of 616.45 MU, 620.98 MU and 628.37 MU during FY 2017-18, FY 2018-19 and FY 2019-20 respectively, in addition to power already projected to be surrendered as discussed in Table 5.25. The Commission has worked out the cost of excess surrendered power to the tune of 616.45 MU, 620.98 MU and 628.37 MU during FY 2017-18, FY 2018-19 and FY 2019-20 respectively, at the average variable rate of surrendered power for the year as 308.74 paise/unit, 306.67 paise/unit and 311.55

paise/unit for FY 2017-18, FY 2018-19 and FY 2019-20 respectively, for power purchase balance purpose only, since fixed/capacity charges have to be paid for the allocated share in any case.

The quantum and rate of purchase of power approved by the Commission above is only for the purpose of power purchase and energy balance. **PSPCL need to carefully plan the best course available to deal with the surplus power i.e. whether it should or should not be scheduled or it should be sold in the market, after assessing its day to day requirement. The surrendering of power should be strictly as per merit order dispatch from all the thermal generating stations, including its own thermal generating station after giving consideration to compensation payable to CCL for less lifting of allotted quantity of coal. While considering merit order dispatch from IPPs within the State, PSPCL should consider the variable cost with domestic coal, if sufficient quantity of domestic coal is available with the IPPs for the power to be scheduled. The inter-state transmission losses be also kept in view while surrendering power as per merit order dispatch. Further, any sale of surplus power by PSPCL shall be done at the best possible rate. The endeavour of PSPCL should be to reduce the burden of fixed charges on the consumers of the State.**

PSPCL has not submitted any requirement of short term power purchase for FY 2017-18, FY 2018-19 and FY 2019-20. However, in case of any exigency, PSPCL may go for purchase of short-term power in a judicious and economical manner, after following procedure as specified in regulations notified by the Commission and also resort to Demand Side Management Practices to maintain its commercial viability. However, rate of purchase should not exceed the rate of power surrendered during the same period.

(g) Inter-State Transmission Charges

PSPCL has projected PGCIL charges as ₹1186.47 crore, 1245.79 crore and 1308.08 crore for FY 2017-18, FY 2018-19 and FY 2019-20 respectively, which the Commission provisionally approves.

Based on the above, the cost of power purchase for FY 2017-18, FY 2018-19 and FY 2019-20 has been worked out as detailed in Table 5.26, Table 5.27 and Table 5.28 respectively.

Table 5.26: Power Purchase cost for FY 2017-18

Sr. No.	Source	Power Purchase (After Surrender) (MU)	AFC (₹ crore)	PSPCL share (%)	Rate of VC (paise /unit)	FC (₹ crore)	VC (₹ crore)	Other Charges (₹ crore)	Total (₹ crore) (VII+VIII+IX)
I	II	III	IV	V	VI	VII	VIII	IX	X
I	**NTPC**								
1	Anta (G/F)	89.50	213.75	13.89	247.50	29.69	22.15		51.84
2	Anta (R/F)	0.00			448.80				0.00
3	Anta (L/F)	0.00			788.00				0.00
4	Auraiya (G/F)	67.54	240.54	14.04	300.80	33.77	20.32		54.09
5	Auraiya (R/F)	0.00			670.40				0.00
6	Auraiya (L/F)	0.00			770.80				0.00
7	Dadri Gas (G/F)	107.37	309.76	16.92	270.80	52.41	29.08		81.49
8	Dadri Gas (R/F)	0.00			627.40				0.00
9	Dadri Gas (L/F)	0.00			759.30				0.00
10	Singrauli	1,486.37	869.17	11.18	152.50	97.17	226.67		323.84
11	Rihand-I	810.71	567.81	12.17	170.70	69.10	138.39		207.49
12	Rihand-II	773.82	626.89	11.46	170.30	71.84	131.78		203.62
13	Rihand-III	627.19	1,015.58	9.63	169.40	97.80	106.25		204.05
14	Unchahar-I	87.75	233.86	9.00	274.90	21.05	24.12		45.17
15	Unchahar-II	137.05	243.32	15.64	274.30	38.06	37.59		75.65
16	Unchahar-III	36.46	189.90	9.44	274.30	17.93	10.00		27.93
17	Farakka (ER)	50.55	857.91	1.40	265.40	12.01	13.42		25.43
18	Kahalgaon-I (ER)	253.25	583.08	6.08	258.00	35.45	65.34		100.79
19	Kahalgaon-II (ER)	709.88	1,189.58	5.35	244.60	63.64	173.64		237.28
20	NCTPS- 2C (DADRI II)	2.01	1,060.31	0.82	303.70	0.70	0.61		1.31
21	IGSTPS Jhajjar (NTPC JV)	7.26	1,766.66	0.73	314.90	1.55	2.29		3.84
22	Meja TPS	35.75			277.00	22.77	9.90		32.67
23	Koldam HEP	431.66	1,142.41	9.59	217.10	57.88	93.71		151.59
	Sub Total (NTPC)	**5,714.12**				**722.82**	**1,105.26**		**1,828.08**
II	**NHPC**								
24	Bairasuil	320.85	130.75	46.50	96.30	36.71	30.90		67.61
25	Salal	883.12	312.86	26.60	58.26	54.24	51.45	98.57	204.26
26	Tanakpur	80.69	123.56	17.93	156.83	11.65	12.65		24.30
27	Chamera-I	237.66	321.08	10.20	110.93	20.23	26.36		46.59
28	Chamera-II	146.00	258.59	12.63	99.15	20.09	14.48		34.57
29	Chamera-III	81.17	404.52	10.05	212.34	25.93	17.24		43.17
30	Uri	387.75	363.60	13.75	80.82	35.09	31.34	17.74	84.17
31	Uri-II	91.57	466.47	9.25	241.45	30.71	22.11	7.93	60.75
32	Dhauli Ganga	110.00	298.21	11.40	151.14	12.43	16.63		29.06
33	Dulhasti	180.50	923.83	10.47	278.62	59.26	50.29	8.96	118.51
34	Sewa-II	43.32	198.90	10.52	216.42	13.95	9.38	0.86	24.19
35	Parbati-III	53.45	330.09	10.25	273.75	12.80	14.63		27.43

Sr. No.	Source	Power Purchase (After Surrender) (MU)	AFC (₹ crore)	PSPCL share (%)	Rate of VC (paise /unit)	FC (₹ crore)	VC (₹ crore)	Other Charges (₹ crore)	Total (₹ crore) (VII+VIII+IX)
I	II	III	IV	V	VI	VII	VIII	IX	X
36	Kishanganga (HEP)	59.10			331.72	9.10	19.60		28.70
	Sub Total (NHPC)	**2,675.18**				**342.19**	**317.06**	**134.06**	**793.31**
III	**NPCIL**								
37	NAPP	388.08			258.50		100.32		100.32
38	RAPP-3 &4	716.22			288.13		206.36		206.36
39	RAPP-5 & 6	245.99			353.64		86.99		86.99
	Sub Total (NPCIL)	**1,350.29**					**393.67**		**393.67**
IV	**Other Sources (Central Sector)**								
(i)	**Hydel Stations**								
40	Nathpa Jhakri HEP (SJVNL)	669.77	1,656.84	11.62	144.10	126.33	96.51		222.84
41	Rampur HEP (SJVNL)	103.97	521.71	6.77	161.26	22.76	16.77		39.53
42	Tehri HEP (THDC)	215.31	1,458.24	8.72	299.82	66.88	64.55		131.43
43	Koteshwer HEP (THDC)	73.45	393.33	7.38	195.48	19.21	14.36		33.57
(ii)	**Thermal Stations**								
44	Durgapur TPS (DVC)	979.86	1,259.98	20.00	246.70	252.00	241.73		493.73
45	Raghunathpur TPS (DVC)	870.28	1,135.30	25.00	221.70	283.83	192.94		476.77
46	Bokaro TPS (DVC)	377.77			205.40	108.89	77.59		186.48
	Sub Total Other Sources (Central Sector)	**3,290.41**				**879.90**	**704.45**		**1,584.35**
V	**NRSE Power (Punjab)**								
47	Long Term NRSE Power								
(i)	Non Solar	1,458.86			531.90		775.97		775.97
(ii)	Solar	1,712.28			590.00		1,010.25		1,010.25
48	Short Term NRSE Power	0.00							0.00
	Sub Total NRSE Power (Punjab)	**3,171.14**					**1,786.22**		**1,786.22**
VI	**Net Banking**								
49	Net Banking with HPSEB, UPCL, J&K & through Traders	662.40			367.32		243.31		243.31
50	Open Access Charges for Banking							19.28	19.28
	Sub Total (Net Banking)	**662.40**					**243.31**	**19.28**	**262.59**
VI	**Traders/IPPs**								
(i)	Hydel Stations								
51	Malana-II HEP (PTC)	354.88		100.00	224.41	64.22	79.64		143.86
52	Tala HEP (PTC)	95.86			202.00		19.36		19.36
53	Tiesta-3 HEP (PTC)	1,363.23			299.80	149.15	408.70		557.85
(ii)	**Thermal Stations**								
54	Pragati-III Gas Plant Bawana (PPCL)	341.26	1,083.03	10.00	274.09	108.30	93.54		201.84
55	Mundra UMPP (CGPL)	3,162.36	90.50 paise/kWh		129.24	286.19	408.70		694.89

Sr. No.	Source	Power Purchase (After Surrender) (MU)	AFC (₹ crore)	PSPCL share (%)	Rate of VC (paise /unit)	FC (₹ crore)	VC (₹ crore)	Other Charges (₹ crore)	Total (₹ crore) (VII+VIII+IX)
I	II	III	IV	V	VI	VII	VIII	IX	X
56	Sasan UMPP (RPL)	4,723.78	17.02 paise/kWh		114.96	80.40	543.05		623.45
57	NVVNL Bundled Power (NTPC Thermal Power + Solar power)	294.88			462.73		136.45		136.45
(iii)	**IPPs within the State**								
58	Talwandi Sabo TPS (Sterlite)	6,094.76		100.00	265.05	1,677.59	1,615.42		3,293.01
59	NPL Rajpura TPS (L&T)	8,694.17		100.00	227.80	1,321.23	1,980.53		3,301.76
60	Goindwal Sahib TPS (GVK)	1,223.00		100.00	294.00	704.72	359.56		1,064.28
	Sub Total (Traders/IPPs)	**26348.18**				**4,391.80**	**5,644.95**		**10036.75**
VIII	**Others**								
61	Excess power to be surrendered for energy balance	(-)616.45			308.74		(-)190.32		(-)190.32
	Sub Total (Others)	**(-)616.45**					**(-)190.32**		**(-)190.32**
IX	**Other Charges**								
62	PGCIL					1,186.47			1,186.47
	Sub Total (Other Charges)					**1,186.47**			**1,186.47**
	Total Power purchase	**42595.27**				**7,523.18**	**10,004.60**	**153.34**	**17681.12**

Table 5.27: Power Purchase cost for FY 2018-19

Sr. No.	Source	Power Purchase (After Surrender) (MU)	AFC (₹ crore)	PSPCL share (%)	Rate of VC (paise /unit)	FC (₹ crore)	VC (₹ crore)	Other Charges (₹ crore)	Total (₹ crore) (VII+VIII+IX)
I	II	III	IV	V	VI	VII	VIII	IX	X
I	**NTPC**								
1	Anta (G/F)	79.38	218.36	13.89	247.50	30.33	19.65		49.98
2	Anta (R/F)	0.00			448.80				0.00
3	Anta (L/F)	0.00			788.00				0.00
4	Auraiya (G/F)	67.54	240.54	14.04	300.80	33.77	20.32		54.09
5	Auraiya (R/F)	0.00			670.40				0.00
6	Auraiya (L/F)	0.00			770.80				0.00
7	Dadri Gas (G/F)	107.37	309.76	16.92	270.80	52.41	29.08		81.49
8	Dadri Gas (R/F)	0.00			627.40				0.00
9	Dadri Gas (L/F)	0.00			759.30				0.00
10	Singrauli	1,480.02	911.74	11.18	152.50	101.93	225.70		327.63
11	Rihand-I	810.75	586.39	12.17	170.70	71.36	138.40		209.76
12	Rihand-II	773.79	626.89	11.46	170.30	71.84	131.78		203.62
13	Rihand-III	622.55	1,015.58	9.63	169.40	97.80	105.46		203.26

Sr. No.	Source	Power Purchase (After Surrender) (MU)	AFC (₹ crore)	PSPCL share (%)	Rate of VC (paise /unit)	FC (₹ crore)	VC (₹ crore)	Other Charges (₹ crore)	Total (₹ crore) (VII+VIII+IX)
I	II	III	IV	V	VI	VII	VIII	IX	X
14	Unchahar-I	82.25	233.86	9.00	274.90	21.05	22.61		43.66
15	Unchahar-II	153.41	243.32	15.64	274.30	38.06	42.08		80.14
16	Unchahar-III	43.51	189.90	9.44	274.30	17.93	11.93		29.86
17	Farakka (ER)	50.55	857.91	1.40	265.40	12.01	13.42		25.43
18	Kahalgaon-I (ER)	213.63	603.63	6.08	258.00	36.70	55.12		91.82
19	Kahalgaon-II (ER)	661.41	1,189.58	5.35	244.60	63.64	161.78		225.42
20	NCTPS- 2C (DADRI II)	2.01	1,060.31	0.82	303.70	0.70	0.61		1.31
21	IGSTPS Jhajjar (NTPC JV)	7.26	1,766.66	0.73	314.90	1.55	2.29		3.84
22	Meja TPS	71.50			277.00	30.39	19.81		50.20
23	Tanda Stage-II TPS	0.00			335.48	79.35			79.35
24	Koldam HEP	431.66	1,142.41	9.59	217.10	57.88	93.71		151.59
	Sub Total (NTPC)	**5,658.59**				**818.70**	**1,093.75**		**1,912.45**
II	**NHPC**								
25	Bairasuil	245.99	138.25	46.50	96.30	36.71	23.69		60.40
26	Salal	883.12	330.62	26.60	58.26	54.24	51.45	98.57	204.26
27	Tanakpur	80.69	129.62	17.93	156.83	11.65	12.65		24.30
28	Chamera-I	237.66	330.30	10.20	110.93	20.23	26.36		46.59
29	Chamera-II	146.00	262.05	12.63	99.15	20.09	14.48		34.57
30	Chamera-III	81.17	404.52	10.05	212.34	25.93	17.24		43.17
31	Uri	387.75	369.92	13.75	80.82	35.09	31.34	17.74	84.17
32	Uri-II	91.57	458.45	9.25	241.45	30.71	22.11	7.93	60.75
33	Dhauli Ganga	110.00	239.76	11.40	151.14	12.43	16.63		29.06
34	Dulhasti	180.50	911.62	10.47	278.62	59.26	50.29	8.96	118.51
35	Sewa-II	43.32	198.90	10.52	216.42	13.95	9.38	0.86	24.19
36	Parbati-III	91.41	330.09	10.25	273.75	12.80	25.02		37.82
37	Parbati-II HEP	24.30			330.53	2.93	8.03		10.96
38	Kishanganga (HEP)	170.50			331.72	26.25	56.56		82.81
	Sub Total (NHPC)	**2,773.98**				**362.27**	**365.23**	**134.06**	**861.56**
III	**NPCIL**								
39	NAPP	388.08			258.50		100.32		100.32
40	RAPP-3 &4	716.22			288.13		206.36		206.36
41	RAPP-5 & 6	245.99			353.64		86.99		86.99
	Sub Total (NPCIL)	**1,350.29**					**393.67**		**393.67**
IV	**Other Sources (Central Sector)**								
(i)	**Hydel Stations**								
42	Nathpa Jhakri HEP (SJVNL)	669.77	1,656.84	11.62	144.10	126.33	96.51		222.84
43	Rampur HEP (SJVNL)	103.97	521.71	6.77	161.26	22.76	16.77		39.53
44	Tehri HEP (THDC)	215.31	1,458.24	8.72	299.82	66.88	64.55		131.43
45	Koteshwer HEP (THDC)	73.45	393.33	7.38	195.48	19.21	14.36		33.57

Sr. No.	Source	Power Purchase (After Surrender) (MU)	AFC (₹ crore)	PSPCL share (%)	Rate of VC (paise /unit)	FC (₹ crore)	VC (₹ crore)	Other Charges (₹ crore)	Total (₹ crore) (VII+VIII+IX)
I	II	III	IV	V	VI	VII	VIII	IX	X
46	Vishnugad Pipalkoti HEP (THDC)	43.92			330.53	5.30	14.52		19.82
(ii)	**Thermal Stations**								
47	Durgapur TPS (DVC)	969.74	1,259.98	20.00	246.70	252.00	239.23		491.23
48	Raghunathpur TPS (DVC)	1,991.41	1,135.30	25.00	221.70	283.83	441.50		725.33
49	Bokaro TPS (DVC)	432.53			205.40	124.67	88.84		213.51
	Sub Total Other Sources (Central Sector)	**4,500.10**				**900.98**	**976.28**		**1,877.26**
V	**NRSE Power (Punjab)**								
50	Long Term NRSE Power								
(i)	Non Solar	1,458.86			531.90		775.97		775.97
(ii)	Solar	3,151.99			590.00		1,859.67		1,859.67
51	Short Term NRSE Power	0.00							
	Sub Total NRSE Power (Punjab)	**4,610.85**					**2,635.64**		**2,635.64**
VI	**Net Banking**								
52	Net Banking with HPSEB, UPCL, J&K & through Traders	662.40			367.32		243.31		243.31
53	Open Access Charges for Banking							19.28	19.28
	Sub Total (Net Banking)	**662.40**					**243.31**	**19.28**	**262.59**
VII	**Traders/IPPs**								
(i)	**Hydel Stations**								
54	Malana-II HEP (PTC)	354.88		100.00	224.41	64.22	79.64		143.86
55	Tala HEP (PTC)	95.86			202.00		19.36		19.36
56	Tiesta-3 HEP (PTC)	1,363.23			299.80	149.15	408.70		557.85
(ii)	**Thermal Stations**								
57	Pragati-III Gas Plant Bawana (PPCL)	341.26	1,083.03	10.00	274.09	108.30	93.54		201.84
58	Mundra UMPP (CGPL)	3,162.36		90.50 Paise/kWh	129.24	286.19	408.70		694.89
59	Sasan UMPP (RPL)	4,757.20		17.02 Paise/kWh	114.96	80.97	546.89		627.86
60	NVVNL Bundled Power (NTPC Thermal Power + Solar power)	294.88			462.73		136.45		136.45
(iii)	**IPPs within the State**								
61	Talwandi Sabo TPS (Sterlite)	5,841.45		100.00	265.05	1,673.72	1,548.28		3,222.00
62	NPL Rajpura TPS (L&T)	8,450.44		100.00	227.80	1,272.64	1,925.01		3,197.65
63	Goindwal Sahib TPS (GVK)	1,223.00		100.00	294.00	704.72	359.56		1,064.28

Sr. No.	Source	Power Purchase (After Surrender) (MU)	AFC (₹ crore)	PSPCL share (%)	Rate of VC (paise /unit)	FC (₹ crore)	VC (₹ crore)	Other Charges (₹ crore)	Total (₹ crore) (VII+VIII+IX)
I	II	III	IV	V	VI	VII	VIII	IX	X
	Sub Total (Traders/IPPs)	**25,884.56**				**4,339.91**	**5,526.13**		**9,866.04**
VIII	**Others**								
64	Excess power to be surrendered for energy balance	(-)620.98			306.67		(-)190.44		(-)190.44
	Sub Total (Others)	**(-)256.46**					**(-)190.44**		**(-)190.44**
IX	**Other Charges**								
65	PGCIL					1,245.79			1,245.79
	Sub Total (Others Charges)					**1,245.79**			**1,245.79**
	Total Power purchase	**44819.79**				**7,667.65**	**11043.57**	**153.34**	**18864.56**

Table 5.28: Power Purchase cost for FY 2019-20

Sr. No.	Source	Power Purchase (After Surrender) (MU)	AFC (₹ crore)	PSPCL share (%)	Rate of VC (paise /unit)	FC (₹ crore)	VC (₹ crore)	Other Charges (₹ crore)	Total (₹ crore) (VII+VIII+IX)
I	II	III	IV	V	VI	VII	VIII	IX	X
I	**NTPC**								
1	Anta (G/F)	89.50	218.36	13.89	247.50	30.33	22.15		52.48
2	Anta (R/F)	0.00			448.80				0.00
3	Anta (L/F)	0.00			788.00				0.00
4	Auraiya (G/F)	67.54	240.54	14.04	300.80	33.77	20.32		54.09
5	Auraiya (R/F)	0.00			670.40				0.00
6	Auraiya (L/F)	0.00			770.80				0.00
7	Dadri Gas (G/F)	107.37	309.76	16.92	270.80	52.41	29.08		81.49
8	Dadri Gas (R/F)	0.00			627.40				0.00
9	Dadri Gas (L/F)	0.00			759.30				0.00
10	Singrauli	1,496.03	911.74	11.18	152.50	101.93	228.14		330.07
11	Rihand-I	810.72	586.39	12.17	170.70	71.36	138.39		209.75
12	Rihand-II	773.88	626.89	11.46	170.30	71.84	131.79		203.63
13	Rihand-III	622.49	1,015.58	9.63	169.40	97.80	105.45		203.25
14	Unchahar-I	87.75	233.86	9.00	274.90	21.05	24.12		45.17
15	Unchahar-II	130.47	243.32	15.64	274.30	38.06	35.79		73.85
16	Unchahar-III	43.51	189.90	9.44	274.30	17.93	11.93		29.86
17	Farakka (ER)	50.55	857.91	1.40	265.40	12.01	13.42		25.43
18	Kahalgaon-I (ER)	253.25	603.63	6.08	258.00	36.70	65.34		102.04
19	Kahalgaon-II (ER)	730.62	1,189.58	5.35	244.60	63.64	178.71		242.35
20	NCTPS- 2C (DADRI II)	2.01	1,060.31	0.82	303.70	0.70	0.61		1.31
21	IGSTPS Jhajjar (NTPC JV)	7.26	1,766.66	0.73	314.90	1.55	2.29		3.84
22	Meja TPS	71.50			277.00	30.39	19.81		50.20

Sr. No.	Source	Power Purchase (After Surrender) (MU)	AFC (₹ crore)	PSPCL share (%)	Rate of VC (paise /unit)	FC (₹ crore)	VC (₹ crore)	Other Charges (₹ crore)	Total (₹ crore) (VII+VIII+IX)
I	II	III	IV	V	VI	VII	VIII	IX	X
23	Tanda Stage-II TPS	286.01			335.48	159.13	95.95		255.08
24	North Karanpura	0.00			364.54	44.78			44.78
25	TapovanVishnugad HEP	51.91			121.00	6.23	6.28		12.51
26	Koldam HEP	431.66	1,142.41	9.59	217.10	57.88	93.71		151.59
	Sub Total (NTPC)	**6,114.03**				**949.49**	**1,223.28**		**2,172.77**
II	**NHPC**								
27	Bairasuil	230.18	138.25	46.50	96.30	36.71	22.17		58.88
28	Salal	883.12	330.62	26.60	58.26	54.24	51.45	98.57	204.26
29	Tanakpur	80.69	129.62	17.93	156.83	11.65	12.65		24.30
30	Chamera-I	237.66	330.30	10.20	110.93	20.23	26.36		46.59
31	Chamera-II	146.00	262.05	12.63	99.15	20.09	14.48		34.57
32	Chamera-III	81.17	404.52	10.05	212.34	25.93	17.24		43.17
33	Uri	387.75	369.92	13.75	80.82	35.09	31.34	17.74	84.17
34	Uri-II	91.57	458.45	9.25	241.45	30.71	22.11	7.93	60.75
35	Dhauli Ganga	110.00	239.76	11.40	151.14	12.43	16.63		29.06
36	Dulhasti	180.50	911.62	10.47	278.62	59.26	50.29	8.96	118.51
37	Sewa-II	43.32	198.90	10.52	216.42	13.95	9.38	0.86	24.19
38	Parbati-III	154.45	330.09	10.25	273.75	12.80	42.28		55.08
39	Parbati-II HEP	310.80			330.53	37.49	102.73		140.22
40	Kishanganga (HEP)	170.50			331.72	26.25	56.56		82.81
	Sub Total (NHPC)	**3,107.71**				**396.83**	**475.67**	**134.06**	**1,006.56**
III	**NPCIL**								
41	NAPP	388.08			258.50		100.32		100.32
42	RAPP-3 &4	716.22			288.13		206.36		206.36
43	RAPP-5 & 6	245.99			353.64		86.99		86.99
	Sub Total (NPCIL)	**1,350.29**					**393.67**		**393.67**
IV	**Other Sources (Central Sector)**								
(i)	**Hydel Stations**								
44	Nathpa Jhakri HEP (SJVNL)	669.77	1,656.84	11.62	144.10	126.33	96.51		222.84
45	Rampur HEP (SJVNL)	103.97	521.71	6.77	161.26	22.76	16.77		39.53
46	Tehri HEP (THDC)	215.31	1,458.24	8.72	299.82	66.88	64.55		131.43
47	Koteshwer HEP (THDC)	73.45	393.33	7.38	195.48	19.21	14.36		33.57
48	Vishnugad Pipalkoti HEP (THDC)	176.42			330.53	21.28	58.31		79.59
(ii)	**Thermal Stations**								
49	Durgapur TPS (DVC)	993.02	1,259.98	20.00	246.70	252.00	244.98		496.98
50	Raghunathpur TPS (DVC)	1,996.86	1,135.30	25.00	221.70	283.83	442.70		726.53
51	Bokaro TPS (DVC)	433.64			205.40	124.99	89.07		214.06
	Sub Total Other Sources (Central Sector)	**4,662.44**				**917.28**	**1,027.25**		**1,944.53**
V	**NRSE Power (Punjab)**								
52	Long Term NRSE Power								

Sr. No.	Source	Power Purchase (After Surrender) (MU)	AFC (₹ crore)	PSPCL share (%)	Rate of VC (paise /unit)	FC (₹ crore)	VC (₹ crore)	Other Charges (₹ crore)	Total (₹ crore) (VII+VIII+IX)
I	II	III	IV	V	VI	VII	VIII	IX	X
(i)	Non Solar	1,997.60			531.90		1,062.52		1,062.52
(ii)	Solar	3,151.99			590.00		1,859.67		1,859.67
53	Short Term NRSE Power	-							-
	Sub Total NRSE Power (Punjab)	**5,149.59**					**2,922.19**		**2,922.19**
VI	**Net Banking**								
54	Net Banking with HPSEB, UPCL, J&K & through Traders	662.40			367.32		243.31		243.31
55	Open Access Charges for Banking							19.28	19.28
	Sub Total (Net Banking)	**662.40**					**243.31**	**19.28**	**262.59**
VII	**Traders/IPPs**								
(i)	Hydel Stations								
56	Malana-II HEP (PTC)	354.88		100.00	224.41	64.22	79.64		143.86
57	Tala HEP (PTC)	95.86			202.00		19.36		19.36
58	Tiesta-3 HEP (PTC)	1,363.23			299.80	149.15	408.70		557.85
(ii)	**Thermal Stations**								
59	Pragati-III Gas Plant Bawana (PPCL)	341.26	1,083.03	10.00	274.09	108.30	93.54		201.84
60	Mundra UMPP (CGPL)	3,162.36	90.50 Paise/kWh		129.24	286.19	408.70		694.89
61	Sasan UMPP (RPL)	4,694.74	17.02 Paise/kWh	15.00	114.96	79.90	539.71		619.61
62	NVVNL Bundled Power (NTPC Thermal Power + Solar power)	294.88			462.73		136.45		136.45
(iii)	**IPPs within the State**								
63	Talwandi Sabo TPS (Sterlite)	6,390.57		100.00	265.05	1,658.23	1,693.82		3,352.05
64	NPL Rajpura TPS (L&T)	8,620.90		100.00	227.80	1,167.25	1,963.84		3,131.09
65	Goindwal Sahib TPS (GVK)	1,226.35		100.00	294.00	706.65	360.55		1,067.20
	Sub Total (Traders/IPPs)	**26,545.03**				**4,219.89**	**5,704.31**		**9,924.20**
VIII	**Others**								
66	Excess power to be surrendered for energy balance	(-)628.37			311.55		(-)195.77		(-)195.77
	Sub Total (Others)	**(-)628.37**			**311.55**		**(-)195.77**		**(-)195.77**
IX	**Other Charges**								
67	PGCIL					1,308.08			1,308.08
	Sub Total (Others Charges)					1,308.08			1,308.08
	Total Power purchase	**46963.12**				**7,791.57**	**11793.91**	**153.34**	**19738.82**

5.8.5 **Cost of purchase of RE power/RECs for RPO compliance**

<u>For FY 2017-18</u>

As per projections approved by the Commission for FY 2017-18, the input energy available to PSPCL for consumption in its area of distribution is 53403.50 MU. The

Commission notes that as per clause 6.4(1) of the revised Tariff Policy dated 28.01.2016 notified by the Central Government, Hydro Power is to be excluded for RPO compliance (Solar). The hydro power purchase/ generation works out to 13882.40 MU for FY 2017-18. Accordingly, the input energy for RPO compliance (Solar) would be 39521.10 MU. PSPCL has intimated the projections of power to be procured from renewable energy sources during FY 2017-18 as 3171.14 MU [1458.86 MU (Non-Solar) + 1712.28 MU (Solar)]. Further, taking into account PSPCL's own generation (Non-Solar) of 341.09 MU, the RE power projected to be procured/generated by PSPCL in FY 2017-18 works out to 3512.23 MU [1799.95 MU (Non-Solar) + 1712.28 MU (Solar)]. Accordingly, the RPO compliance for FY 2017-18 is projected as under:

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

PSPCL has proposed ₹1786.22 crore for long term purchase of power from renewable energy sources within the State and ₹120.72 crore, revised to ₹91.09 crore vide memo no.418/CC/DTR/Dy.CAO/245 Vol-1 dated 10.04.2017, for purchase of RECs for RPO compliance.

The Commission allows ₹1786.22 crore for purchase of power from renewable energy sources within the State. However, the Commission is not inclined to allow the amount of ₹91.09 crore demanded by PSPCL for purchasing RECs for compliance of RPO shortfall. The same shall be considered on actual basis at the time of review/true-up for FY 2017-18.

<u>For FY 2018-19</u>

As per projections approved by the Commission for FY 2018-19, the input energy available to PSPCL for consumption in its area of distribution is 55784.54 MU. The Commission notes that as per clause 6.4(1) of the revised Tariff Policy dated 28.01.2016 notified by the Central Government, Hydro Power is to be excluded for RPO compliance (Solar). The hydro power purchase/ generation works out to

14337.11 MU for FY 2018-19. Accordingly, the input energy for RPO compliance (Solar) would be 41447.43 MU. PSPCL has intimated the projections of power to be procured from renewable energy sources during FY 2018-19 as 4610.85 MU [1458.86 MU (Non-Solar) + 3151.99 MU (Solar)]. Further, taking into account PSPCL's own generation (Non-Solar) of 341.09 MU, the RE power projected to be procured/generated by PSPCL in FY 2018-19 works out to 4951.94 MU [1799.95 MU (Non-Solar) + 3151.99 MU (Solar)]. Accordingly, the RPO compliance for FY 2018-19 is projected as under:

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

PSPCL has proposed ₹2635.64 crore for long term purchase of power from renewable energy sources within the State and ₹108.02 crore, revised to ₹111.90 crore vide memo no. 418/CC/DTR/Dy.CAO/245 Vol-1 dated 10.04.2017, for purchase of RECs for RPO compliance.

The Commission allows ₹2635.64 crore for purchase of power from renewable energy sources within the State. However, the Commission is not inclined to allow the amount of ₹111.90 crore demanded by PSPCL for purchasing RECs for compliance of RPO shortfall. The same shall be considered on actual basis at the time of review/true-up for FY 2018-19.

For FY 2019-20

As per projections approved by the Commission for FY 2019-20, the input energy available to PSPCL for consumption in its area of distribution is 58321.82 MU. The Commission notes that as per clause 6.4(1) of the revised Tariff Policy dated 28.01.2016 notified by the Central Government, Hydro Power is to be excluded for RPO compliance (Solar). The hydro power purchase/ generation works out to 14738.08 MU for FY 2019-20. Accordingly, the input energy for RPO compliance (Solar) would be 43583.74 MU. PSPCL has intimated the projections of power to be procured from renewable energy sources during FY 2019-20 as 5149.59 MU

[1997.60 MU (Non-Solar) + 3151.99 MU (Solar)]. Further, taking into account PSPCL's own generation (Non-Solar) of 341.09 MU, the RE power projected to be procured/generated by PSPCL in FY 2019-20 works out to 5490.68 MU [2338.69 MU (Non-Solar) + 3151.99 MU (Solar)]. Accordingly, the RPO compliance for FY 2019-20 is projected as under:

Sr. No.	Description	FY 2019-20	
1.	Input Energy (MU)	58321.82 (for Non-Solar) 43583.74 (for Solar)	
		%	MU
2.	RPO specified i. Non-Solar ii. Solar	 4.5 % 2.5 %	 2624.48 1089.59
3.	RE generation/purchase (RPO compliance) i. Non-Solar ii. Solar	 4.01 % 7.23 %	 2338.69 3151.99
4.	Net RE shortfall / (surplus) (2-3) i. Non-Solar ii. Solar	 0.49 % (4.73%)	 285.79 (2062.40)

PSPCL has proposed ₹2922.19 crore for long term purchase of power from renewable energy sources within the State and ₹28.22 crore, revised to ₹66.12 crore vide memo no. 418/CC/DTR/Dy.CAO/245 Vol-1 dated 10.04.2017, for purchase of RECs for RPO compliance.

The Commission allows ₹2922.19 crore for purchase of power from renewable energy sources within the State. However, the Commission is not inclined to allow the amount of ₹66.12 crore demanded by PSPCL for purchasing RECs for compliance of RPO shortfall. The same shall be considered on actual basis at the time of review/true-up for FY 2019-20.

The Commission directs PSPCL to comply with the RPO specified in the RPO Regulations for FY 2017-18 to FY 2019-20.

Accordingly, the total power purchase amount for FY 2017-18 has been worked out as ₹17681.12 crore for purchase of 42595.27 MU. For FY 2018-19, the total power purchase amount has been worked out as ₹18864.56 crore for purchase of 44819.79 MU. For FY 2019-20, the total power purchase amount has been worked out as ₹19738.82 crore for purchase of 46963.12 MU.

5.9 Fuel Cost Adjustment (FCA)

Any change in the fuel cost from the level approved by the Commission is to be passed on to the consumers as FCA in line with FCA formula specified in Punjab State Electricity Regulatory Commission (Conduct of Business) Regulations, 2005.

According to this stipulation, any change in fuel cost would be passed on to the consumers on quarterly basis as per Punjab State Electricity Regulatory Commission (Conduct of Business) (Second Amendment) Regulations, 2012.

5.10 Employee Cost

5.10.1 In the ARR Petition for MYT Control Period, PSPCL has projected employee cost for its Generation and Distribution Business as per details in Table 5.29 and project wise details in Table 5.30.

Table 5.29: Employee Cost projected by PSPCL for the Control Period FY 2017-18 to FY 2019-20

(₹crore)

Particulars	FY 2017-18		FY 2018-19		FY 2019-20	
	Generation	Distribution	Generation	Distribution	Generation	Distribution
Terminal Benefits	344.90	1846.85	358.06	1917.64	376.76	2019.52
BBMB Expenses	258.23	-	271.14	-	284.70	-
Other Employee Cost	426.84	2491.72	440.14	2606.70	454.34	2742.90
Total Employee Cost	**1029.97**	**4338.57**	**1069.34**	**4524.34**	**1115.80**	**4762.42**

Table 5.30: Project wise Employee Cost for Hydro and Thermal (under Generation head) projected by PSPCL for the Control Period FY 2017-18 to FY 2019-20

(₹crore)

Projects	FY 2017-18	FY 2018-19	FY 2019-20
Shanan	23.44	24.33	25.39
UBDC	36.79	38.19	39.85
RSD	30.96	32.14	33.54
MHP	49.10	50.98	53.20
ASHP	33.89	35.19	36.72
Micro	-	-	-
Total (Hydro) (A)	**174.18**	**180.83**	**188.70**
GNDTP	270.10	280.43	292.61
GGSSTP	406.95	422.51	440.86
GHTP	178.74	185.57	193.63
Total (Thermal) (B)	**855.79**	**888.51**	**927.10**
Total Generation (A)+(B)	**1,029.97**	**1,069.34**	**1,115.80**

Petitioner's Submission:

5.10.2 PSPCL has claimed employee cost (net of capitalization) consisting of terminal benefits, BBMB share and other employee cost. It has submitted that the provisions, as specified in the PSERC MYT Regulations, 2014, have been considered in the petition for computing the inflation index. The utility has considered the increase of WPI from April to September 2016 and CPI for the period of April to August, 2016 for calculating the other Employee cost for FY 2017-18, FY 2018-19 and FY 2019-20.

PSPCL has briefly discussed and relied upon Hon'ble APTEL's judgments dated 18th October, 2016; dated September 11th, 2014 and dated March 30th, 2015 to claim employee expenses on actual basis. PSPCL prays that the Hon'ble Commission may approve the projected Employee Cost as claimed in Table 5.29 and Table 5.30 above.

PSPCL has further submitted that impact of wage revision due to 7th Pay Commission has not been considered during the Control Period since these expenses are allowed on actual basis as per Regulation 26 of PSERC MYT Regulations, 2014. Also, as regards share of BBMB expenses, PSPCL has submitted that tariff for Generation Stations and Transmission Assets of BBMB will be determined by CERC as per CERC tariff Regulations, 2014. BBMB is yet to file the Petition for determination of tariff for block period from FY 2014-15 to FY 2018-19. Hence, in the present petition, PSPCL has determined share of BBMB expenses by applying escalation of 5% to expenses estimated for FY 2016-17.

Commission's Analysis:

5.10.3 The Employee expenses, R&M expenses and A&G expenses are commonly considered as O&M expenses. Regulation 26 of Punjab State Electricity Regulatory Commission MYT Regulations, 2014 as amended on 3rd February, 2016, explains the methodology for computing the O&M expenses as:

"26. OPERATION AND MAINTENANCE (O&M) EXPENSES:

Clause 26.1 of regulation 26 shall be substituted as under:

26.1. The O&M expenses for the n^{th} year of the Control Period shall be approved based on the formula shown below:

$$O\&M_n = (R\&M_n + EMP_n + A\&G_n) \times (1-X_n)$$

Where,

- *R&Mn – Repair and Maintenance Costs of the Applicant for the nth year;*
- *EMPn – Employee Cost of the Applicant for the n^{th} year;*
- *A&Gn – Administrative and General Costs of the Applicant for the n^{th} year;*

The above components shall be computed in the manner specified below:

(i) $R\&M_n + A\&G_n = K*GFA*(WPI_n/WPI_{n-1})$

Where,

- ***"K"*** *is a constant (expressed in %) governing the relationship between R&M and A&G expenses and Gross Fixed Assets (GFA) for the n^{th} year. The value of 'K' will be specified by the Commission in the MYT order.*
- ***'GFA'*** *is the average value of the gross fixed assets of the n^{th} year*
- ***WPI_n*** *means the average rate (on monthly basis) of Wholesale Price Index (all commodities) over the year for the n^{th} year.*

(ii) $EMP_n = (EMP_{n-1})*(INDEX_n/INDEX_{n-1})$

- ***$INDEX_n$-*** *Inflation factor to be used for indexing the Employee Cost.*
- *This will be a combination of the Consumer Price Index (CPI) and Wholesale Price Index (WPI) of nth year and shall be calculated as under:-*

$INDEX_n = 0.50*CPI_n + 0.50*WPI_n$

'WPI_n' *means the average rate (on monthly basis) of Wholesale Price Index (all commodities) over the year for the nth year.*

'CPI_n' *means the average rate (on monthly basis) of Consumer Price Index (all commodities) over the year for the nth year.*

Note 1: *…….*

Note 2: *For the Purpose of estimation, the same WPI_n and CPI_n values shall be used for all used for all years of the Control Period. However, the Commission will consider the actual values of the WPI_n and CPI_n at the end of each year during the Annual Performance Review exercise and true up the employee cost on account of this variation. Further, the Commission will consider the actual values of the WPI_n at the end of each year during Annual Performance Review exercise and true up the R&M and A&G Expenses on account of this variation.*

Note 3: *O&M expenses shall be allowed on normative basis and shall not be trued up:*

Provided, if actual O&M expenses are less than 90% of the normative expenses, the Commission shall true up the O&M expenses during the Annual Performance Review for that year on Actual basis.

Note 4: *Terminal Liabilities such as death-cum-retirement gratuity, pension, commuted pension, leave encashment, LTC, medical reimbursement including fixed medical allowance in respect of pensioners will be approved as per the actuals paid by the applicant.*

***Note 5:**…….*

***Note 6:** Exceptional increase in employee cost on account of pay revision etc. will be considered separately by the Commission.*

***Note 7:** Any expenditure on account of license fee, initial or renewal, fee for determination of tariff and audit fee shall be allowed on actual basis, over and above the A&G expenses approved by the Commission.*

***Note 8:** O&M expenses of assets taken on lease/hire purchase and those created out of the consumer's contribution shall be considered in case of generating company or the licensee has the responsibility for its operation and maintenance and bears O&M expenses.*

***Note 9:**With regard to unfunded past liabilities of pension and gratuity, the Commission will follow the Principle of "Pay as you go". The Commission shall not allow any other amount towards creating fund for meeting unfunded past liability of pension and gratuity.*

***Note 10:**……"*

5.10.4 The Commission has considered figures of FY 2015-16 from the Audited Annual Accounts of PSPCL for FY 2015-16 as base for computing the allowable employee cost for the Control Period.

5.10.5 The WPI and CPI index for the MYT Control Period are not available, therefore the percentage increase in WPI and CPI index respectively of FY 2016-17 over FY 2015-16 has been considered for each year of the Control Period.

The terminal benefits of ₹2191.75 crore, ₹2275.69 crore & ₹2396.27 crore have been claimed by PSPCL for FY 2017-18, FY 2018-19 and FY 2019-20 respectively. As per the Regulation, terminal benefits are to be allowed on actual basis, thus the Commission considers terminal benefits of ₹2191.75 crore, ₹2275.69 crore & ₹2396.27 crore.

5.10.6 PSERC Tariff Regulations provide that inflation factor is to be used for indexing the 'Other Employee Cost' and will be a combination of the Consumer Price Index (CPI) and Wholesale Price Index (WPI) of nth year and shall be calculated as $0.50*CPI_n+0.50*WPI_n$. The WPI and CPI index for FY 2015-16 is at 109.70 and 265.00 respectively and the WPI and CPI index for FY 2016-17 are 111.60 and 275.92 respectively. Therefore, there was an increase in WPI index of 1.73% [((111.60-109.70)/109.70)*100] and increase in CPI index of 4.12% [((275.92-265)/265)*100] in FY 2016-17 over FY 2015-16. As discussed above, the 'Other

Employee Cost' will be combination of the Consumer Price Index (CPI) and Wholesale Price Index (WPI) of n^{th} year and shall be calculated as $0.50*CPI_n+0.50*WPI_n$. Therefore, increase of 2.93% {(1.73%+4.12%)/2} in 'other employee cost' is being allowed over the 'other employee cost' approved for the base year of FY 2015-16.

5.10.7 As per Note 2 to Regulation 26 of PSERC MYT Regulations, 2014 (Amended on 3rd Feb, 2016), for the purpose of estimation, the same WPI_n and CPI_n values shall be used for all years of Control Period. Therefore, WPI rate of 1.73% and 50% of WPI and CPI of 2.93% have been considered for all years of Control Period for calculation of 'Other Employee Cost'.

5.10.8 'Other Employee Cost' as per Audited Annual Accounts for FY 2015-16 is ₹2356.44 crore, which has been considered as base for computing 'Other Employee Cost' for subsequent years. The combination $(0.50*CPI_n+0.50*WPI_n)$ i.e., 2.93% is applied for FY 2017-18, FY 2018-19 and FY 2019-20 respectively taking the immediate preceding year as the base year for calculation of 'Other Employee Cost' for Control Period. Accordingly, 'Other Employee Cost' of FY 2016-17 works out to ₹2425.48 crore (₹2356.44 + 2.93% of ₹2356.44); for FY 2017-18 works out to ₹2496.55 crore (₹2425.48 + 2.93% of ₹2425.48); for FY 2018-19 works out to ₹2569.70 crore (₹2496.55 + 2.93% of ₹2496.55) and for FY 2019-20 works out to ₹2644.99 crore (₹2569.70 + 2.93% of ₹2569.70).

5.10.9 Further, the Commission has observed that PSPCL has claimed Employee Cost under its RSD Project of ₹30.96 crore in FY 2017-18, ₹32.14 crore in FY 2018-19 and ₹33.54 crore in FY 2019-20, which is on a higher side. The same has been claimed in addition to the claim of 'Royalty paid by RSD to GoP' of ₹9.19 crore in FY 2017-18, ₹9.07 crore in FY 2018-19 and ₹9.20 crore in FY 2019-20. The Commission vide Memo No.PSERC/M&F/218/7164 dated 14.03.2017 sought details / explanation from PSPCL on this issue. In reply, PSPCL vide Memo No. 378/CC/DTR/Dy.CAO/245/Vol-I/Deficiency dated 28.03.2017 submitted actual payments released to RSD in last five years, which were very less compared to the aforesaid claim figures of PSPCL. Accordingly, the Commission has not considered this claim under employee cost and has separately discussed PSPCL's claim of 'Royalty paid by RSD to GoP' is Para 5.17 of this Order.

5.10.10 The Commission has apportioned the Employee Cost for MYT years to Generation and Distribution Business based on the Allocation Statement provided by PSPCL for FY 2015-16 vide Memo No.1178/CC/DTR/Dy.CAO/245 Vol-I/ deficiency dated

23.12.2016. Project wise Employee Cost of Generation Business is also allocated based on the same Allocation Statement of FY 2015-16. However, in view of Commission's observations discussed in Para 5.10.9 above, cost allocated to RSD in Allocation Sheet of FY 2015-16 is kept as 'Nil'.

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.

Accordingly, 'Other Employee Cost' and 'Terminal benefits' allowed for MYT Control period from FY 2017-18 to FY 2019-20 are shown in Table 5.31. Also, BBMB expenses claimed by PSPCL have not been considered here and are separately discussed and allowed in Para 5.13 of this Tariff Order.

Table 5.31: Employee Expense

(₹crore)

Particulars	**FY 2017-18**	**FY 2018-19**	**FY 2019-20**
Terminal Benefits	2191.75	2275.69	2396.27
Other Employee Cost	2496.55	2569.70	2644.99
Total Employee Cost	**4688.30**	**4845.39**	**5041.26**
Allocated to Generation	722.01	746.20	776.37
Allocated to Distribution	3966.29	4099.19	4264.89

Thus, the Commission approves Employee Cost of ₹722.01 crore for FY 2017-18, ₹746.20 crore for FY 2018-19 & ₹776.37 crore for FY 2019-20 for Generation Business and ₹3966.29 crore for FY 2017-18, ₹4099.19 crore for FY 2018-19 and ₹4264.89 crore for FY 2019-20 for Distribution Business.

Also, Employee Cost of Generation Business further apportioned to different projects based on allocation statement is discussed in Table 5.32.

Table 5.32: Project wise Employee Cost - Hydro & Thermal (under Generation)

(₹crore)

Projects	FY 2017-18	FY 2018-19	FY 2019-20
Shanan	23.17	23.95	24.91
UBDC	36.36	37.58	39.10
RSD	-	-	-
MHP	48.54	50.17	52.19
ASHP	33.51	34.63	36.03
Micro	-	-	-
BBMB	-	-	-
Total (Hydro) (A)	**141.58**	**146.33**	**152.23**
GNDTP	183.20	189.33	196.99
GGSSTP	276.01	285.25	296.79
GHTP	121.22	125.29	130.36
Total (Thermal) (B)	**580.43**	**599.87**	**624.14**
Total Generation (A)+(B)	**722.01**	**746.20**	**776.37**
Total Distribution	**3966.29**	**4099.19**	**4264.89**

5.11 Capital Investment Plan

5.11.1 PSPCL filed Petition (No. 46 of 2016) for approval of Capital Investment Plan and Business Plan for MYT Control Period (FY 2017-18 to FY 2019-20) under Regulations 9 and 10 of PSERC (Terms and Conditions for Determination of Generation, Transmission, Wheeling and Retail Supply Tariff) Regulation, 2014 (MYT Regulations) on 30.05.2016. The Commission vide order dated 09.06.2016 admitted the Petition. PSPCL also filed additional submission vide its letter dated 12.07.2016.

5.11.2 The Commission in its order dated 16.08.2016 observed that the petition filed by PSPCL for approval of its Capital Investment Plan and Business Plan for MYT Control Period (FY 2017-18 to FY 2019-20) is deficient on various points and directed PSPCL to resubmit the Capital Investment Plan and Business Plan to the Commission by 26.08.2016, after attending to deficiencies/observations discussed in the ibid order. PSPCL was further directed to ensure that the filing of Capital Investment Plan and Business Plan is strictly as per Regulation 4, 5, 6, 9 and 10 of MYT Regulations. PSPCL submitted its revised Capital Investment Plan and Business Plan vide letter no. 1031/CC/DTR 245/Deficiency dated 30.09.2016.

5.11.3 PSPCL has also submitted that it would be required to revise the proposed works during the Control Period keeping in view the actual details witnessed during the current year (FY 2016-17). PSPCL also expressed difficulty in submission of technical specifications, capitalization schedule, cost benefit etc., as the detailed information was not available at that stage.

5.11.4 The Commission observed that the PSPCL has proposed exorbitant outlays which do not match with their spending capacities demonstrated in the past and considering the trend of capital expenditure incurred by utility in previous years, the Commission provisionally approves a total capital expenditure of ₹1310.67 crore for FY 2017-18, ₹1303.25 crore for FY 2018-19 and ₹966.72 crore for FY 2019-20.

5.11.5 PSPCL has provided plant wise details of GFA for FY 2015-16 vide Memo No.109/A44 dated 01.03.2017 and plant wise details of GFA of FY 2016-17 (GFA as on 31.03.2017) vide Memo No.758/ARR/Dy.CAO/245 Vol-2 dated 07.09.2017. The Commission, based on the said details submitted by PSPCL, has computed the project wise GFA and Depreciation for control period. The adjustments recorded in Review of FY 2016-17 have also been considered to work out opening balances of FY 2017-18. The capital investment sought in different projects has been considered as addition to fixed asset for the respective year. Accordingly, the balances of GFA and capitalization for each year of Control Period approved by the Commission are as shown in Table 5.33 to Table 5.34.

Table 5.33: Capital WIP

(₹crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20
Opening Capital WIP	1177.05	867.55	730.32
Add: Capital Exp. during the year	1310.67	1303.25	966.72
Total	2487.72	2170.80	1697.04
Less: Transferred to fixed assets during the year (Generation)	85.54	207.14	121.18
Less: Transferred to fixed assets during the year (Distribution)	1534.63	1233.33	1040.69
Closing Capital WIP	867.55	730.32	535.17

Table 5.34: Gross Fixed Assets

(₹crore)

Projects	Opening Balance FY 2017-18	Additions FY 2017-18	Additions FY 2018-19	Additions FY 2019-20	Closing Balance FY 2019-20
Shanan	125.57	33.08	10.17	4.77	173.59
UBDC	878.84	3.09	9.28	12.20	903.41
RSD	8068.66	2.63	29.07	16.38	8116.74
MHP	994.65	30.43	77.82	45.00	1147.90
ASHP	541.67	2.31	7.45	6.07	557.50
Micro	26.84	-	-	-	26.84
BBMB	595.74	-	-	-	595.74
Total (Hydro) (A)	**11231.97**	**71.54**	**133.79**	**84.42**	**11521.72**
GNDTP	4173.48	-	-	-	4173.48
GGSSTP	3802.85	13.07	73.05	33.69	3922.66
GHTP	4805.19	0.93	0.30	3.07	4809.49
Total (Thermal) (B)	**12781.52**	**14.00**	**73.35**	**36.76**	**12905.63**
Total Generation (A)+(B)	**24013.49**	**85.54**	**207.14**	**121.18**	**24427.35**
Distribution	**25336.59**	**1534.63**	**1233.33**	**1040.69**	**29145.24**

Therefore, the Commission provisionally approves the Capital Expenditure and capitalization as stated in the tables above.

5.12 Repair & Maintenance (R&M) and Administrative & General (A&G) Expenses

5.12.1 In the ARR Petition for MYT Control Period, PSPCL has projected R&M and A&G expenses for its Generation and Distribution Business as per details in Table 5.35 and further project wise allocated Generation expenses to Hydro and Thermal in Table 5.36.

Table 5.35: R&M and A&G Expenses projected by PSPCL

(₹crore)

Particulars	**FY 2017-18**	**FY 2018-19**	**FY 2019-20**
Generation	224.49	227.70	229.82
Distribution	466.59	507.31	540.72

(Inclusive of License and ARR fees of ₹12.68 crore for all three years)

Table 5.36: Project wise R&M and A&G Expenses in Hydro & Thermal (under Generation)

(₹crore)

Projects	**FY 2017-18**	**FY 2018-19**	**FY 2019-20**
Shanan	2.83	2.87	2.90
UBDC	1.84	1.86	1.88
RSD	3.99	4.05	4.08
MHP	13.51	13.71	13.83
ASHP	0.82	0.83	0.84
Micro	-	-	-
Total (Hydro) (A)	**22.99**	**23.32**	**23.53**
GNDTP	38.24	38.79	39.15
GGSSTP	89.52	90.80	91.65
GHTP	73.74	74.79	75.49
Total (Thermal) (B)	**201.50**	**204.38**	**206.29**
Total Generation (A)+(B)	**224.49**	**227.70**	**229.82**

Petitioner's Submission:

5.12.2 PSPCL has submitted that R&M and A&G expenses have been linked to "K factor" and WPI index, wherein, "K factor" is constant governing relationship between R&M and A&G expenses and Gross Fixed Assets. PSPCL has analyzed actual figures of R&M and A&G expenses and GFA for FY 2015-16 for computing "K factor" as shown below in Table 5.37.

Table 5.37: Computation of K factor for Control Period

(₹crore)

Sr. No.	Particulars	FY 2015-16 Generation	FY 2015-16 Distribution
1.	Opening GFA	23545.91	20896.20
2.	Closing GFA	23711.56	22703.00
3.	R&M Expenses	193.53	195.32
4.	A&G Expenses	21.44	165.15
5.	R&M and A&G expenses as % of Average GFA (K)	0.91%	1.65%
6.	K factor	0.91%	1.65%

Based on the above computed 'K' factor, PSPCL has claimed R&M and A&G expenses as projected in Table 5.37.

PSPCL has considered the escalation index of 2.53% on WPI, being average of increase in WPI from increase 2015-16 to 2016-17, as per latest data available.

Commission's Analysis:

5.12.3 As per Regulation 26 of PSERC MYT Regulations, 2014 (discussed in Para 5.10.3 of this Order), Repair and maintenance expenses are to be calculated as follows:

(i) $R\&M_n + A\&G_n = K*GFA*(WPI_n/WPIn\text{-}1)$

Where,

- ***"K"*** *is a constant (expressed in %) governing the relationship between R&M and A&G expenses and Gross Fixed Assets (GFA) for the nth year. The value of 'K' will be specified by the Commission in the MYT order.*
- ***'GFA'*** *is the average value of the gross fixed assets of the nth year*

  WPI_n *means the average rate (on monthly basis) of Wholesale Price Index (all commodities) over the year for the nth year*

5.12.4 Actual figures of GFA, R&M and A&G expenses have been taken from Audited Annual Accounts for FY 2015-16 for computation of "K factor" for FY 2015-16 as baseline and for calculation of allowable expenses for Control Period for Generation and Distribution Business. Calculation of computation of 'K' factor for FY 2015-16 is shown in Table 5.38.

Table 5.38: Calculation of K factor for FY 2015-16 & FY 2016-17 by the Commission

(₹crore)

Particulars	Generation	Distribution
GFA as on 01.04.2015	23384.95	21057.16
GFA as on 31.03.2016	23558.65	22897.10
Average GFA for FY 2015-16	23471.80	21977.13
R&M expenses for 2015-16	179.82	181.49
A&G expenses for 2015-16	19.75	152.14
Total R&M and A&G expenses	199.57	333.63
'K' factor (% of R&M expenses over average GFA)for FY 2015-16	0.85%	1.52%
WPI index	1.73%	1.73%
'K' factor (inflation adjusted) for FY 2016-17	**0.86%**	**1.55%**

5.12.5 For computation of 'K' factor for MYT Control Period, WPI increase (of FY 2016-17 over FY 2015-16) has been kept constant for FY 2017-18 to FY 2019-20 and same WPI values are used for each year of Control Period. Details of calculation are shown in Table 5.39.

Table 5.39: Calculation of 'K' factor for R&M and A&G expenses for MYT Control period FY 2017-18 to FY 2019-20 by the Commission

Particulars	FY 2017-18	FY 2018-19	FY 2019-20
Generation			
'K' factor	0.86%	0.87%	0.89%
WPI index	1.73%	1.73%	1.73%
'K' factor (inflation adjusted)	**0.87%**	**0.89%**	**0.91%**
Distribution			
'K' factor	1.55%	1.58%	1.61%
WPI index	1.73%	1.73%	1.73%
'K' factor (inflation adjusted)	**1.58%**	**1.61%**	**1.64%**

5.12.6 The Commission has arrived at the opening and closing balance of GFA for Control Period to be taken into consideration, while approving the Capital expenditure and capitalization for the Control Period in Para 5.11.8 of this Tariff order. R&M and A&G expenses for MYT Control Period to be approved are calculated by multiplying the inflation adjusted 'K' factor for FY 2017-18 to FY 2019-20 with the respective Average Gross Fixed Asset values.

5.12.7 The Commission has observed that PSPCL has claimed R&M and A&G expenses under its RSD Project of ₹3.99 crore in FY 2017-18, ₹4.05 crore in FY 2018-19 and ₹4.08 crore in FY 2019-20. The same has been claimed in addition to the claim of 'Royalty paid by RSD to GoP' of ₹9.19 crore in FY 2017-18, ₹9.07 crore in FY 2018-19 and ₹9.20 crore in FY 2019-20. As already discussed in Para 5.10.9 above, the

Commission has not considered this claim under R&M/A&G expenses and has separately discussed PSPCL's claim of 'Royalty paid by RSD to GoP' in Para 5.17 of this Order. Further, BBMB expenses claimed by PSPCL have not been considered and are separately discussed and allowed in Para 5.13 of this Tariff Order.

5.12.8 The Commission has allocated the R&M and A&G expenses in the ratio of Gross Fixed Asset of the respective project (as mentioned in table 5.43). Accordingly, the costs allocated to RSD project works out to ₹70.52 crore in FY 2017-18, ₹72.38 crore in FY 2018-19 and ₹74.07 crore in FY 2019-20. Similarly, costs allocated to BBMB project works out to ₹5.21 crore in FY 2017-18, ₹5.34 crore in FY 2018-19 and ₹5.45 crore in FY 2019-20. R&M and A&G expenses excluding RSD and BBMB share works out to ₹133.56 (209.29-70.52-5.21) crore for FY 2017-18, ₹137.68 (215.40-72.38-5.34) crore for FY 2018-19 & ₹142.22 (221.74-74.07-5.45) crore for FY 2019-20.

5.12.9 Further, in its petition, the utility has highlighted its intention to keep the thermal plant in Bhatinda (GNDTP) as a 'stand by' option during peak requirement. Also, it is pertinent to note that no fuel cost has been claimed by the utility in this plant during the Control Period. However, R&M and A&G expenses have been claimed in GNDTP of ₹38.24 crore in FY 2017-18, ₹38.79 crore in FY 2018-19 and ₹39.15 crore in FY 2019-20. Against this, the Commission has computed allowable expense (as discussed in Table 5.41) of ₹36.28 crore in FY 2017-18, ₹37.20 crore in FY 2018-19 and ₹37.99 crore in FY 2019-20. The Commission permits to keep the Bhatinda plant operational as a back-up / stand by option for FY 2017-18 only and not for FY 2018-19 and FY 2019-20. Further, for the inefficient plants of the utility, the Commission is also issuing specific Directives in Para 7.31 of this tariff Order. Accordingly, the Commission allows R&M and A&G expense for FY 2017-18, however, R&M expenses for FY 2018-19 and FY 2019-20 are not allowed and only A&G expense of ₹3.71 crore in FY 2018-19 and ₹3.79 crore in FY 2019-20 is allowed to PSPCL.

R&M and A&G expense finally allowed by the Commission for the Control Period FY 2017-18 to FY 2019-20 is shown in Table 5.40.

Table 5.40: Project wise R&M and A&G Expenses- Hydro & Thermal

(₹crore)

Projects	FY 2017-18	FY 2018-19	FY 2019-20
Shanan	1.10	1.42	1.54
UBDC	7.69	7.90	8.16
RSD	70.52	72.38	74.07
MHP	8.69	9.19	10.09
ASHP	4.73	4.88	5.04
Micro	0.23	0.24	0.25
BBMB	5.21	5.34	5.45
Total (Hydro) (A)	**98.17**	**101.35**	**104.60**
GNDTP	36.28	37.20	37.99
GGSSTP	33.06	34.01	35.40
GHTP	41.78	42.84	43.75
Total (Thermal) (B)	**111.12**	**114.05**	**117.14**
Total Generation (A)+(B)	**209.29**	**215.40**	**221.74**
Less: RSD, BBMB and GNDTP share (as discussed in para 5.12.7 to 5.12.9 above)	**75.73**	**111.21**	**113.72**
Generation (Net)	**133.56**	**104.19**	**108.02**
Distribution*	**425.12**	**455.23**	**482.13**

** Inclusive of ₹12.68 crore on account of License and ARR fees for all years of Control Period.*

Thus, the Commission approves R&M and A&G Expenses of ₹133.56 crore for FY 2017-18, ₹104.19 crore for FY 2018-19 & ₹108.02 crore for FY 2019-20 for Generation Business and ₹425.12 crore for FY 2017-18, ₹455.23 crore for FY 2018-19 and ₹482.13 crore for FY 2019-20 for Distribution Business.

5.13 O&M Expenses of BBMB

PSPCL has claimed O&M expenses on account of BBMB share of ₹258.23 crore in FY 2017-18, ₹271.14 crore in FY 2018-19 and ₹284.70 crore in FY 2019-20. **The Commission approves O&M expenses of BBMB in Generation Business for FY 2017-18, FY 2018-19 and FY 2019-20 as claimed by PSPCL.**

5.14 Depreciation

5.14.1 In the ARR Petition for MYT Control Period, PSPCL has projected depreciation charges for its Generation and Distribution business as per details in Table 5.41 and Table 5.42.

Table 5.41: Depreciation projected by PSPCL

(₹crore)

Particulars	FY 2017-18		FY 2018-19		FY 2019-20	
	Generation	Distribution	Generation	Distribution	Generation	Distribution
Opening GFA	23866.56	25466.20	24267.40	28079.80	24553.29	30270.89
Addition during year	400.84	2613.60	285.89	2191.09	168.75	1750.99
Closing GFA	24267.40	28079.80	24553.29	30270.89	24722.04	32021.88
Depreciation	**587.47**	**988.19**	**594.12**	**1076.86**	**599.65**	**1142.66**

Table 5.42: Project wise Depreciation claimed by PSPCL in Hydro & Thermal (under Generation)

(₹crore)

Projects	FY 2017-18	FY 2018-19	FY 2019-20
Shanan	3.85	3.90	3.93
UBDC	7.81	7.90	7.98
RSD	252.84	255.70	258.08
MHP	21.49	21.74	21.94
ASHP	14.61	14.78	14.92
Micro	-	-	-
Total (Hydro) (A)	**300.60**	**304.02**	**306.85**
GNDTP	60.48	61.17	61.74
GGSSTP	31.29	31.65	31.94
GHTP	195.08	197.29	199.12
Total (Thermal) (B)	**286.85**	**290.11**	**292.80**
Total Generation (A)+(B)	**587.45**	**594.13**	**599.65**

<u>Petitioner's Submission:</u>

5.14.2 PSPCL has computed depreciation using relevant depreciation rates specified in CERC Tariff Regulations, 2014. The rates are applied on opening GFA for full year and addition to GFA for half year period. The utility has also submitted that no depreciation is computed on land.

<u>Commission's Analysis:</u>

5.14.3 The Commission has arrived at the opening and closing balance of GFA for Control Period while approving the Capital expenditure and capitalization for the Control Period in Para 5.11.5 of this Tariff order.

For both Generation& Distribution Business, the Commission has considered the actual rate of depreciation from project wise asset and depreciation details furnished by PSPCL vide Memo No.109/A44 dated 01.03.2017 of FY 2015-16, taking into account the actual amount of depreciation and total GFA (excluding land) as on 31.03.2016, for the purpose of providing depreciation for the Control Period. The rate of depreciation is worked out from aforesaid details of FY 2015-16.

The depreciation to be allowed for the Control Period has been determined by applying the rate of depreciation on the opening balance of GFA for full year and same depreciation rate for half year (6 months) on the additions to assets made during the respective year of Control Period (FY 2017-18 to FY 2019-20). Accordingly, depreciation allowed in Generation and Distribution Business of PSPCL is shown in Table 5.43:

Table 5.43: Depreciation approved by the Commission

(₹crore)

Particulars	FY 2017-18		FY 2018-19		FY 2019-20	
	Generation	Distribution	Generation	Distribution	Generation	Distribution
Opening GFA	24013.49	25336.59	24099.03	26871.22	24306.17	28104.55
Addition during year	85.54	1534.63	207.14	1233.33	121.18	1040.69
Closing GFA	24099.03	26871.22	24306.17	28104.55	24427.35	29145.24
Depreciation	**458.75**	**770.07**	**461.36**	**810.89**	**463.57**	**844.43**

Thus, the Commission approves Depreciation charges of ₹458.75 crore for FY 2017-18, ₹461.36 crore for FY 2018-19 & ₹463.57 crore for FY 2019-20 for Generation Business and ₹770.07 crore for FY 2017-18, ₹810.89 crore for FY 2018-19 and ₹844.43 crore for FY 2019-20 for Distribution Business.

Project wise depreciation approved under Generation Business is apportioned in Table 5.44.

Table 5.44: Project wise Depreciation approved for Hydro & Thermal (under Generation)

(₹crore)

Projects	FY 2017-18	FY 2018-19	FY 2019-20
Shanan	7.99	9.20	9.62
UBDC	6.51	6.56	6.64
RSD	192.87	193.26	193.79
MHP	12.22	12.87	13.62
ASHP	2.93	2.96	2.99
Micro	-	-	-
BBMB	21.86	21.85	21.87
Total (Hydro) (A)	**244.38**	**246.70**	**248.53**
GNDTP	44.66	44.66	44.66
GGSSTP	23.62	23.89	24.22
GHTP	146.09	146.11	146.16
Total (Thermal) (B)	**214.37**	**214.66**	**215.04**
Total Generation (A)+(B)	**458.75**	**461.36**	**463.57**

5.15 Interest and Finance Charges

5.15.1 In the ARR Petition for MYT Control Period, PSPCL has claimed interest charges of ₹79.12 crore for FY 2017-18, ₹84.54 crore for FY 2018-19 and ₹84.48 crore for FY 2019-20, under its Generation Business. In its Distribution Business, PSPCL has claimed interest charges of ₹3462.61 crore for FY 2017-18, ₹3699.58 crore for FY 2018-19 and ₹3868.09 crore for FY 2019-20.The total interest and finance charges claimed by PSPCL for its Generation and Distribution business mentioned in Table 5.45 and Table 5.46.

Table 5.45: Interest expenses for Generation claimed by PSPCL

(₹crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20
Opening Balance	686.89	685.72	683.07
Loan Addition during the year	183.10	209.27	90.64
Repayment during the year	184.27	211.92	68.16
Closing Balance	685.72	683.07	705.55
Interest Rate	11.53%	12.35%	12.17%
Interest Charges	79.12	84.54	84.48

Table 5.46: Interest expenses for Distribution claimed by PSPCL

(₹crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20
Loans covered under UDAY	1796.64	1796.64	1796.64
GOP Loans (UDAY BONDS)	1306.95	1306.95	1306.95
DISCOM Bonds	489.69	489.69	489.69
Loans not covered under UDAY			
Long term Loans	95.98	92.82	87.19
PFC-R-APDRP	40.36	38.81	37.25
PFC-Sultanpur Lodhi Scheme	-	-	-
LTL-COMMERCIAL BANKS	51.32	50.41	47.04
CSS Loans-APDRP	4.30	3.60	2.90
WC Loan	1164.78	1408.75	1559.53
Liability for GPF	102.15	84.21	66.26
CC/OD Limits	74.78	76.22	70.22
NON-SLR Bonds	15.30	10.07	0.45
Interest on Consumer Security Deposit	357.15	385.93	416.08
Total	**3606.77**	**3854.64**	**3996.38**
Add: Finance Charges	44.83	20.38	18.26
Less: Interest Capitalised	183.09	169.06	140.18
Total	**3462.61**	**3699.58**	**3868.09**

Petitioner's Submission:

5.15.2 PSPCL has submitted that it has considered 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 Control Period. The interest expenses have been computed considering repayment of actual loans and applicable interest rate for loans. Further, PSPCL has projected an increase in consumer security deposit in Control period after taking into account the growth in energy sales and revenue.

Commission's Analysis:

5.15.3 PSPCL had furnished revised details of loan (and interest thereon) vide its Memo No.378/CC/DTR/Dy.CAO/245 Vol-I/Deficiency dated 28.03.2017;Memo No.224 dated 31.03.2017; Memo No. 398/ARR/Dy.CAO/245 dated 03.04.2017 and Memo No.742/ARR/Dy.CAO/245 dated 04.09.2017. The Commission relied on the revised details furnished by PSPCL to calculate the allowance figures. Capitalization approved during the year for each project has been treated as loan addition for the respective year. Repayment details provided by PSPCL have been considered as "actual loan repayment" for the control period.

5.15.4 The Commission vide letter no. PSERC/Tariff/198/4453 dated 16.08.2016, required PSPCL to explain the source of funding its capital expenditure for the Control Period. The utility in its reply vide Memo No1031/CC/DTR.245/Deficiency dated 30.09.2016, submitted that entire capital expenditure shall be funded from Debt. Accordingly, the Commission approves long term long for funding the capital expenditure. However, actual capital expenditure incurred and loan taken by the utility shall be re-examined for any variance in utilization of debt, based on the loan agreement(s) utilization details which the utility shall produce at the time of Annual Performance Review.

5.15.5 The details of Opening and Closing balances of Loan (Other than WCL) along with interest allowed by the Commission for Generation and Distribution Business are shown in Table 5.47 to Table 5.50.

Table 5.47: Project wise Loan details Hydro & Thermal (under Generation) for FY 2017-18

(₹crore)

Projects	Opening Loan	Loan Additions	Loan Repayment	Closing Loan	Interest on Loan
Shanan	-	33.08	8.41	24.67	2.32
UBDC	0.54	3.09	0.54	3.09	0.24
RSD	137.59	2.63	-	140.22	17.36
MHP	13.95	30.43	1.74	42.64	3.42
ASHP	-	2.31	-	2.31	0.13
Micro	-	-	-	-	-
BBMB	137.45	-	30.46	106.99	14.30
Total (Hydro)(A)	**289.53**	**71.54**	**41.15**	**319.92**	**37.77**
GNDTP	83.82	-	72.71	11.11	5.49
GGSSTP	83.50	13.08	19.05	77.53	10.47
GHTP	51.35	0.93	51.35	0.93	1.41
Total (Thermal) (B)	**218.67**	**14.01**	**143.11**	**89.57**	**17.37**
Total Generation (A)+(B)	**508.20**	**85.55**	**184.26**	**409.49**	**55.14**

Table 5.48: Project wise Loan details Hydro & Thermal (under Generation) for FY 2018-19

(₹crore)

Projects	Opening Loan	Loan Additions	Loan Repayment	Closing Loan	Interest on Loan
Shanan	24.67	10.17	-	34.84	3.50
UBDC	3.09	9.28	-	12.37	0.91
RSD	140.22	29.07	-	169.29	23.65
MHP	42.64	77.82	1.74	118.72	14.15
ASHP	2.31	7.45	-	9.76	0.71
Micro	-	-	-	-	-
BBMB	106.99	-	30.46	76.53	10.73
Total (Hydro) (A)	**319.92**	**133.79**	**32.20**	**421.51**	**53.65**
GNDTP	11.11	-	1.21	9.90	0.08
GGSSTP	77.53	73.06	15.74	134.85	16.79
GHTP	0.93	0.30	-	1.23	0.06
Total (Thermal) (B)	**89.57**	**73.36**	**16.95**	**145.98**	**16.93**
Total Generation (A)+(B)	**409.49**	**207.15**	**49.15**	**567.49**	**70.58**

Table 5.49: Project wise Loan details Hydro & Thermal (under Generation) for FY 2019-20

(₹crore)

Projects	Opening Loan	Loan Additions	Loan Repayment	Closing Loan	Interest on Loan
Shanan	34.84	4.77	-	39.61	4.37
UBDC	12.37	12.20	-	24.57	2.17
RSD	169.29	16.38	10.32	175.35	21.91
MHP	118.72	45.00	1.74	161.98	26.79
ASHP	9.76	6.07	-	15.83	1.51
Micro	-	-	-	-	-
BBMB	76.53	-	27.27	49.26	7.32
Total (Hydro) (A)	**421.51**	**84.42**	**39.33**	**466.60**	**64.07**
GNDTP	9.90	-	1.21	8.69	0.63
GGSSTP	134.85	33.69	14.68	153.86	25.01
GHTP	1.23	3.07	-	4.30	0.32
Total (Thermal) (B)	**145.98**	**36.76**	**15.89**	**166.85**	**25.96**
Total Generation (A)+(B)	**567.49**	**121.18**	**55.22**	**633.45**	**90.03**

Table 5.50: Interest on Loan (Other than WCL) for Generation and Distribution Business approved for Control Period FY 2017-18 to FY 2019-20

(₹crore)

Particulars	FY 2017-18		FY 2018-19		FY 2019-20	
	Generation	Distribution	Generation	Distribution	Generation	Distribution
Opening Loan	508.20	8290.78	409.49	9500.09	567.49	10498.03
Loan additions during the year	85.55	1225.12	207.15	1096.11	121.18	845.54
Repayment during the year	184.26	15.81	49.15	98.17	55.22	175.31
Closing Loan	409.49	9500.09	567.49	10498.03	633.45	11168.26
Average Loan	458.85	8895.43	488.49	9999.06	600.47	10833.16
Interest on Loan	**55.14**	**800.60**	**70.58**	**899.89**	**90.03**	**974.98**

The Commission, therefore, approves the loan balances and interest thereon for Generation Business as stated above in the tables.

5.15.6 **Interest on GPF**

PSPCL has claimed interest on GPF Liability in its Distribution Business, amounting to ₹102.15 crore for FY 2017-18, ₹84.21 crore for FY 2018-19 and ₹66.26 crore FY 2019-20. **The said interest on GPF Fund, being a statutory payment is allowed as claimed in all three years of control period in Distribution Business of PSPCL.**

5.15.7 **Interest on Consumer Security Deposits**

PSPCL has claimed ₹357.15 crore for FY 2017-18, ₹385.93 crore for FY 2018-19 and ₹416.08 crore FY 2019-20 as interest on Consumer Security Deposit in its Distribution Business.

The Commission, vide Notification No. PSERC/Secy/Regu.114 dated 22.06.2016, notified that the distribution licensee shall pay Interest on Security (consumption) and Security (meter) at the Bank Rate (as on 1st April of each year) as notified by RBI, which is 6.50% per annum. In the ARR Petition, PSPCL has submitted balance of consumer security deposit of ₹2983.37 crore for FY 2017-18, ₹3227.88 crore for FY 2018-19 and ₹3483.98 crore for FY 2019-20

Accordingly, the Commission allows interest @6.50% per annum on the aforesaid consumer security deposit, being ₹193.92 crore for FY 2017-18, ₹209.81 crore for FY 2018-19 and ₹226.46 crore FY 2019-20.

5.15.8 **Finance Charges**

PSPCL has claimed ₹44.83 crore for FY 2017-18, ₹20.38 crore for FY 2018-19 and ₹18.26 crore FY 2019-20 as Finance Charges. PSPCL,vide Memo No. 398/ARR/Dy.CAO/245 dated 03.04.2017, has claimed additional finance charges of ₹1.10 crore for FY 2017-18 and ₹1.26 crore for FY 2018-19.

Further, PSPCL, vide Memo No. 563 dated 17.08.2017 submitted that guarantee fees & stamp duty charges of ₹208.37 crore claimed in FY 2016-17, relating to DISCOM Bonds (of ₹5209.42 crore) which were proposed to be issued in FY 2016-17, shall be issued in FY 2017-18. The Bonds were not issued in FY 2016-17 as no response was received by PSPCL from existing lenders / key investors. PSPCL has withdrawn the claim of ₹208.37 crore from FY 2016-17 and has made it in FY 2017-18, resulting in total finance charges of 254.30 (44.83+1.10+208.37) crore in FY 2017-18.

The Commission accordingly approves finance charges of ₹254.30 crore for FY 2017-18, ₹21.64 crore for FY 2018-19 and ₹18.80 crore FY 2019-20 in Distribution Business of the utility.

5.15.9 **Capitalisation of interest Charges**

PSPCL has claimed ₹183.09 crore as capitalisation of interest for FY 2017-18, ₹169.07 crore for FY 2018-19 and ₹139.67 crore FY 2019-20. **These are allowed as claimed in all three years of control period in Distribution Business of PSPCL.**

In view of the above, the interest and finance charges for Distribution Business are approved as detailed in Table 5.51.

Table 5.51: Interest and finance charges for Distribution Business from FY 2017-18 to FY 2019-20

(₹crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20
Interest on Loan (Distribution) as approved in Table 5.53 above	800.60	899.89	974.98
Add: Interest for GPF Liability	102.15	84.21	66.26
Add: Interest on Consumer Security Deposits	193.92	209.81	226.46
Add: Finance Charges	254.30	21.64	18.80
Less: Capitalization of Interest Charges	183.09	169.07	139.67
Interest on Loan (Distribution)	**1167.88**	**1046.48**	**1146.83**

Accordingly, the Commission allows total interest and finance charges under Distribution Business of ₹1167.88 crore for FY 2017-18, ₹1046.48 crore for FY 2018-19 and ₹1146.83 crore for FY 2019-20.

5.15.10 **Interest on Working Capital**

In the ARR Petition for MYT Control Period, PSPCL has claimed interest on working capital of ₹152.91 crore for FY 2017-18, ₹159.07 crore for FY 2018-19 and ₹169.16 crore for FY 2019-20 for Generation Business.

Petitioner's Submission:

PSPCL has submitted that interest on working capital projected / claimed as per MYT Regulations, 2014 separately for Thermal and Hydro as per allocation matrix furnished. The details of working capital claimed and interest thereon are given in Table 5.52.

Table 5.52: Interest on Working Capital for Hydro and Thermal (under Generation)

(₹crore)

Particulars	FY 2017-18			FY 2018-19			FY 2019-20		
	Hydro	**Thermal**	**Total**	**Hydro**	**Thermal**	**Total**	**Hydro**	**Thermal**	**Total**
Working Capital	188.32	1163.69	1352.01	229.93	1176.55	1406.48	235.53	1260.12	1495.65
Interest on Working Capital	21.30	131.61	152.91	26.01	133.07	159.07	26.64	142.52	169.16

Commission's Analysis:

5.15.11 The Commission has determined the working capital and interest thereon in accordance with PSERC Tariff Regulations. The project wise details of working capital requirement and allowable interest thereon are in Table 5.53 to Table 5.55.

Table 5.53: Working Capital and interest thereon for Thermal (under Generation) allowed by the Commission

(₹crore)

Particulars	FY 2017-18			FY 2018-19			FY 2019-20		
	GNDTP	GGSSTP	GHTP	GNDTP	GGSSTP	GHTP	GNDTP	GGSSTP	GHTP
Maintenance Charges @ 15% of O&M	32.92	46.36	24.45	28.96	47.89	25.22	30.12	49.83	26.12
Fuel Cost for 2 months	-	163.17	107.22	-	161.66	107.73	-	175.94	122.28
O&M Exp for 1 month	18.29	25.76	13.58	16.09	26.61	14.01	16.73	27.68	14.51
Receivables for 2 months	59.54	239.50	178.85	53.75	240.60	179.70	54.87	258.94	195.43
Total Working Capital	**110.75**	**474.79**	**324.10**	**98.80**	**476.76**	**326.66**	**101.72**	**512.39**	**358.34**
Interest on Working Capital	**10.37**	**44.44**	**30.34**	**9.25**	**44.62**	**30.58**	**9.52**	**47.96**	**33.54**

Table 5.54(A): Working Capital and interest thereon for Hydro (under Generation) allowed by the Commission for FY 2017-18

(₹crore)

Particulars	Shanan	UBDC	RSD	MHP	ASHP	Micro	BBMB
Maintenance Charges @ 15% of O&M	3.64	6.61	-	8.58	5.74	0.04	-
O&M Exp for 1 month	2.02	3.67	-	4.77	3.19	0.02	-
Receivables for 2 months	6.34	11.54	62.58	15.68	8.84	0.13	51.72
Total Working Capital	**12.00**	**21.82**	**62.58**	**29.03**	**17.77**	**0.19**	**51.72**
Interest on Working Capital	**1.13**	**2.05**	**5.86**	**2.72**	**1.66**	**0.02**	**4.84**

Table 5.54(B): Working Capital and interest thereon for Hydro (under Generation) allowed by the Commission for FY 2018-19

(₹crore)

Particulars	Shanan	UBDC	RSD	MHP	ASHP	Micro	BBMB
Maintenance Charges @ 15% of O&M	3.81	6.82	-	8.90	5.93	0.04	-
O&M Exp for 1 month	2.11	3.79	-	4.95	3.29	0.02	-
Receivables for 2 months	7.03	11.85	63.13	18.00	9.13	0.13	53.26
Total Working Capital	**12.95**	**22.46**	**63.13**	**31.85**	**18.35**	**0.19**	**53.26**
Interest on Working Capital	**1.21**	**2.10**	**5.91**	**2.98**	**1.72**	**0.02**	**4.99**

Table 5.54(C): Working Capital and interest thereon for Hydro (under Generation) allowed by the Commission for FY 2019-20

(₹crore)

Particulars	Shanan	UBDC	RSD	MHP	ASHP	Micro	BBMB
Maintenance Charges @ 15% of O&M	3.97	7.09	-	9.34	6.16	0.04	-
O&M Exp for 1 month	2.20	3.94	-	5.19	3.42	0.02	-
Receivables for 2 months	7.45	12.34	62.39	20.93	9.52	0.12	54.93
Total Working Capital	**13.62**	**23.37**	**62.39**	**35.46**	**19.10**	**0.18**	**54.93**
Interest on Working Capital	**1.28**	**2.19**	**5.84**	**3.32**	**1.79**	**0.02**	**5.14**

Table 5.55: Working Capital and interest thereon for Distribution allowed by the Commission

(₹crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20
Maintenance Charges @ 15% of O&M	658.71	683.16	712.05
O&M Exp for 1 month	365.95	379.54	395.59
Receivables for 2 months	4183.67	4403.64	4613.00
Less: Consumer Security Deposit	2983.37	3227.88	3483.98
Total Working Capital	**2224.96**	**2238.46**	**2236.66**
Interest on Working Capital	**208.26**	**209.52**	**209.35**

Accordingly, the Commission approves Interest on Working Capital of ₹103.43 crore for FY 2017-18, ₹103.38 crore for FY 2018-19 & ₹110.60 crore for FY 2019-20 for Generation Business and ₹208.26 crore for FY 2017-18, ₹209.52 crore for FY 2018-19 & ₹209.35 crore for FY 2019-20 for Distribution Business.

5.16 Return on Equity

5.16.1 In the ARR Petition for MYT Control Period, PSPCL has claimed total RoE of ₹942.62 crore in all three years as per details given in Table 5.56 and Table 5.57.

Table 5.56: Return on Equity Claimed by PSPCL

(₹crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20
Generation	577.90	577.90	577.90
Distribution	364.72	364.72	364.72

Table 5.57: Project wise ROE in Hydro & Thermal (under Generation)

(₹crore)

Projects	FY 2017-18	FY 2018-19	FY 2019-20
Shanan	2.58	2.58	2.58
UBDC	22.54	22.54	22.54
RSD	197.12	197.12	197.12
MHP	23.20	23.20	23.20
ASHP	13.37	13.37	13.37
Micro	3.23	3.23	3.23
Total (Hydro) (A)	**262.04**	**262.04**	**262.04**
GNDTP	103.25	103.25	103.25
GGSSTP	92.45	92.45	92.45
GHTP	120.15	120.15	120.15
Total (Thermal) (B)	**315.85**	**315.85**	**315.85**
Total Generation (A)+(B)	**577.89**	**577.89**	**577.89**

Petitioner's Submission:

5.16.2 PSPCL has submitted that the Commission had approved a return on equity for FY 2015-16 at the rate of 15.50% worked out at ₹942.62 crore on an equity base of ₹6081.43 crore, which is also the claim for all three years of MYT. It is further submitted that PSPCL has assumed that no fresh equity will be added during the Control Period.

Commission's Analysis:

5.16.3 In accordance with PSERC Regulations for MYT, the Commission allows RoE of ₹942.62 crore (@ 15.50% on the equity of ₹6081.43 crore) to PSPCL for all three MYT years being FY 2017-18, FY 2018-19 and FY 2019-20. However, the Commission has apportioned the RoE to different projects based on the respective GFA of the project in Table 5.58.

Table 5.58: Project wise ROE allowed by the Commission

(₹crore)

Projects	FY 2017-18	FY 2018-19	FY 2019-20
Shanan	2.34	2.89	2.99
UBDC	16.36	16.05	15.80
RSD	150.16	146.88	143.58
MHP	18.51	18.65	19.55
ASHP	10.08	9.90	9.77
Micro	0.50	0.49	0.48
BBMB	11.09	10.84	10.56
Total (Hydro) (A)	**209.04**	**205.70**	**202.73**
GNDTP	77.27	75.49	73.64
GGSSTP	70.41	69.02	68.62
GHTP	88.96	86.94	84.81
Total (Thermal) (B)	**236.64**	**231.45**	**227.07**
Total Generation (A)+(B)	**445.68**	**437.15**	**429.80**
Distribution	**496.94**	**505.47**	**512.82**

Accordingly, the Commission allows RoE as stated in above tables to PSPCL for all three MYT years being FY 2017-18, FY 2018-19 and FY 2019-20.

5.17 Charges Payable to GoP on RSD

In the ARR Petition for MYT Control Period, PSPCL has claimed ₹9.19 for FY 2017-18, ₹9.07 crore for FY 2018-19 and ₹9.20 crore for FY 2019-20, as royalty charges payable to Government of Punjab on power from RSD (under generation Business), **which are allowed as claimed.**

5.18 Aggregate Revenue Requirement of Generation Projects (Hydro and Thermal) for FY 2018-18, FY 2018-19 and FY 2019-20

A summary of project wise Aggregate Revenue Requirement (ARR) of Generation Business of PSPCL (consisting of Hydro and Thermal Plants/Projects) from FY 2017-18 to FY 2019-20 has been given from Table 5.69 to Table 5.61.

Table 5.59: ARR for Thermal Plants (under Generation Business) from FY 2017-18 to FY 2019-20

(₹crore)

Particulars	FY 2017-18			FY 2018-19			FY 2019-20		
	GNDTP	GGSSTP	GHTP	GNDTP	GGSSTP	GHTP	GNDTP	GGSSTP	GHTP
Fuel Cost	-	979.01	643.32	-	969.98	646.40	-	1,055.63	733.65
Employee Cost	183.20	276.01	121.22	189.33	285.25	125.29	196.99	296.79	130.36
R&M and A&G Expenses	36.28	33.06	41.78	3.71	34.01	42.84	3.79	35.40	43.75
Depreciation	44.66	23.62	146.09	44.66	23.89	146.11	44.66	24.22	146.16
Interest Charges	5.49	10.47	1.41	0.08	16.79	0.06	0.63	25.01	0.32
Return on Equity	77.27	70.41	88.96	75.49	69.02	86.94	73.64	68.62	84.81
Interest on Working Capital	10.37	44.44	30.34	9.25	44.62	30.58	9.52	47.96	33.54
Revenue Requirement	**357.27**	**1437.02**	**1073.12**	**322.52**	**1443.56**	**1078.22**	**329.23**	**1553.63**	**1172.59**

Table 5.60(A): ARR for Hydro Plants (under Generation Business) for FY 2017-18

(₹crore)

Particulars	Shanan	UBDC	RSD	MHP	ASHP	Micro	BBMB	Total
Employee Cost	23.17	36.36	-	48.54	33.51	-	-	141.58
R&M and A&G Expenses	1.10	7.68	-	8.69	4.73	0.23	-	22.43
BBMB O&M Expenses	-	-	-	-	-	-	258.23	258.23
Depreciation	7.99	6.51	192.87	12.22	2.93	-	21.86	244.38
Interest Charges	2.32	0.24	17.36	3.42	0.13	-	14.30	37.77
Return on Equity	2.34	16.36	150.17	18.51	10.08	0.50	11.09	209.05
Interest on Working Capital	1.13	2.05	5.86	2.72	1.66	0.02	4.84	18.28
Maint. Charges payable to GoP for RSD	-	-	9.19	-	-	-	-	9.19
Revenue requirement	**38.05**	**69.20**	**375.45**	**94.10**	**53.04**	**0.75**	**310.32**	**940.91**

Table 5.60(B): ARR for Hydro Plants (under Generation Business) for FY 2018-19

(₹crore)

Particulars	Shanan	UBDC	RSD	MHP	ASHP	Micro	BBMB	Total
Employee Cost	23.95	37.58	-	50.17	34.63	-	-	146.33
R&M and A&G Expenses	1.42	7.90	-	9.19	4.88	0.24	-	23.63
BBMB O&M Expenses	-	-	-	-	-	-	271.14	271.14
Depreciation	9.20	6.56	193.26	12.87	2.96	-	21.85	246.70
Interest Charges	3.50	0.91	23.65	14.15	0.71	-	10.73	53.65
Return on Equity	2.89	16.05	146.88	18.65	9.90	0.49	10.84	205.70
Interest on Working Capital	1.21	2.10	5.91	2.98	1.72	0.02	4.99	18.93
Maint. Charges payable to GoP for RSD	-	-	9.07	-	-	-	-	9.07
Revenue requirement	**42.17**	**71.10**	**378.77**	**108.01**	**54.80**	**0.75**	**319.55**	**975.15**

Table 5.60(C): ARR for Hydro Plants (under Generation Business) for FY 2019-20

(₹crore)

Particulars	Shanan	UBDC	RSD	MHP	ASHP	Micro	BBMB	Total
Employee Cost	24.91	39.10	-	52.19	36.03	-	-	152.23
R&M and A&G Expenses	1.54	8.16	-	10.09	5.04	0.25	-	25.08
BBMB O&M Expenses	-	-	-	-	-	-	284.70	284.70
Depreciation	9.62	6.64	193.79	13.62	2.99	-	21.87	248.53
Interest Charges	4.37	2.17	21.91	26.79	1.51	-	7.32	64.07
Return on Equity	2.99	15.80	143.58	19.55	9.77	0.48	10.56	202.73
Interest on Working Capital	1.28	2.19	5.84	3.32	1.79	0.02	5.14	19.58
Maint. Charges payable to GoP for RSD	-	-	9.20	-	-	-	-	9.20
Revenue requirement	**44.71**	**74.06**	**374.32**	**125.56**	**57.13**	**0.75**	**329.59**	**1006.12**

Table 5.61: Total ARR for Generation Business from FY 2017-18 to FY 2019-20

(₹crore)

Projects	FY 2017-18	FY 2018-19	FY 2019-20
GNDTP	357.27	322.52	329.23
GGSSTP	1437.02	1443.56	1553.63
GHTP	1073.12	1078.22	1172.59
Total Thermal (A)	2867.41	2844.30	3055.45
Total Hydro (B)	940.91	975.15	1006.12
Total Generation (A)+(B)	**3808.32**	**3819.45**	**4061.57**

5.19 Transmission Charges Payable to PSTCL

In the ARR Petition for MYT Control Period, PSPCL has claimed Transmission charges payable to PSTCL of ₹1208.56 crore for FY 2017-18, ₹1268.99 crore for FY 2018-19 and ₹1332.44 crore for FY 2019-20 under its Distribution Business. **The Commission, in the Tariff Order of PSTCL for MYT period, has determined Transmission charges payable by PSPCL to PSTCL at ₹1234.87 crore for FY 2017-18, ₹1283.86 crore for FY 2018-19 and ₹1337.15 crore for FY 2019-20. The same is also being considered in the ARR of Distribution Business of PSPCL for MYT Period.**

5.20 Non-Tariff Income

5.20.1 In the ARR Petition for MYT Control Period, PSPCL has claimed Non-Tariff Income of ₹617.70 crore for FY 2017-18, ₹622.53 crore for FY 2018-19 and ₹627.59 crore for FY 2019-20 in its Distribution Business. The figures claimed by PSPCL, exclude income on account of late payment of surcharge and rebate for timely payment for power purchase. Non-Tariff Income claimed by PSPCL is discussed in Table 5.62.

Table 5.62: Non-Tariff Income claimed by PSPCL in Distribution Business

Particulars	Non - Tariff Income		
	FY 2017-18	FY 2018-19	FY 2019-20
Meter / Service Rent	101.81	106.64	111.70
Late Payment Surcharge	78.04	78.04	78.04
Misc. Receipts	402.94	402.94	402.94
Misc. Charges (Except PLEC)	24.20	24.20	24.20
Wheeling Charges	55.06	55.06	55.06
Interest on Staff Loan & Advance	55.32	55.32	55.32
Income from Staff Welfare Activities	0.05	0.05	0.05
Investments & Bank balances	11.64	11.64	11.64
Depreciation from Consumer Contributions	35.03	35.03	35.03
Total Non-Tariff Income	764.09	768.92	773.98
Less: Late Payment Surcharge	78.04	78.04	78.04
Less: Rebate for timely payment of Power Purchase	68.35	68.35	68.35
Net Non-Tariff Income	617.70	622.53	627.59

5.20.2 The Commission observes that receipts on account of late payment surcharge are to be treated as Non-Tariff Income as per Regulation 28 of PSERC (Terms and Conditions for Determination of Generation, Transmission, Wheeling and Retail Supply Tariff) Regulations, 2014. Similarly, PSPCL has also not included rebate for timely payment for power purchase in the Non-Tariff Income whereas these are to be taken as Non-Tariff Income.

5.20.3 Further, it is observed that Other Income from Consumer Contribution is ₹129.46 crore in FY 2016-17, as per the Provisional Accounts, however, this amount projected in Control Period is ₹35.03 crore only. Thus, the Commission adds ₹94.43 (129.46-35.03) crore to the Non-Tariff Income of Control Period. As such the Non-Tariff Income is worked out in Table 5.63.

Table 5.63: Non-Tariff Income allowed by the Commission

(₹crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20
Net Non-tariff Income claimed	617.70	622.53	627.59
Add: Late Payment Surcharge	78.04	78.04	78.04
Add: Rebate for timely payment of power purchase	68.35	68.35	68.35
Add: Differential amount of Other Income of Consumer Contribution	94.43	94.43	94.43
Non-Tariff Income allowed by the Commission	**858.52**	**863.35**	**868.41**

The Commission accordingly approves Non-Tariff Income of ₹858.52 crore for FY 2017-18, ₹863.35 for FY 2018-19 and ₹868.41 crore for FY 2019-20 in Distribution Business.

5.21 Demand Side management (DSM) Fund

PSPCL in the ARR, has proposed to create a DSM Fund for funding energy saving and Demand Side management activities for which an amount of ₹10.00 crore for each year has been claimed for FY 2017-18, FY 2018-19 and FY 2019-20. PSPCL has submitted that as per Regulation 1.8 of the DSM 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 Aggregate 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 the DSM Regulations states that 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 has further submitted that for implementation of demand side measures to manage demand efficiently, it requires to take measures from technical experts in this field and active participation of consumers. PSPCL has projected the contribution of ₹10.00 crore towards DSM fund in each year of the Control Period. Further, this expenditure is to be incurred to provide benefits to end consumers to reduce their bills by managing demand effectively.

The Commission has observed that although PSPCL is being provided sufficient funds for carrying out DSM measures during the last few years but the licensee has failed miserably to use any amount on energy efficiency and DSM measures. **However, the Commission provisionally approves an amount of ₹10.00 crore for each year of the Control Period i.e. FY 2017-18, FY 2018-19 and FY 2019-20, as claimed by PSPCL for implementation of DSM Programme. This amount shall be kept in a separate DSM Fund and used exclusively for DSM Programme as per the procedures laid down in the DSM Regulations.**

5.22 Revenue from Sale of Power

In the ARR Petition for MYT Control Period, PSPCL has projected revenue from sale of power at ₹27142.43 crore for FY 2017-18. **The Commission approves revenue from sale of power at ₹27026.74 crore in Distribution Business for FY 2017-18, the details of which are discussed in Table 5.64.**

Table 5.64: Revenue from Sale of Power for FY 2017-18

(₹crore)

Sr. No.	Description	Claimed by PSPCL		As approved by the Commission	
		Energy Sale (MU)	Revenue (₹crore)	Energy Sale (MU)	Revenue (₹crore)
I	II	III	IV	V	VI
1	Domestic	14387.66	7968.21	14387.66	7968.21
2	Commercial / Non-Residential Supply	4190.92	2811.38	4190.92	2811.38
3	Public Lighting	255.47	170.91	255.47	170.91
4	Industrial Consumers				
a)	Small Power	1005.93	501.96	1005.93	550.24
b)	Medium Supply	2310.47	1374.02	2310.47	1383.97
c)	Large Supply	12072.94	7599.96	12072.94	7666.32
5	Bulk Supply	744.99	478.60	744.99	478.60
6	Railway Traction	187.22	126.37	187.22	126.37
7	**Sub-Total**	**35155.60**	**21031.41**	**35155.60**	**21156.00**
8	AP Consumption	12336.54	5650.13	11811.90	5409.85
9	**Total within State**	**47492.14**	**26681.54**	**46967.50**	**26565.85**
10	Common Pool	311.68	145.40	311.68	145.40
11	Outside State	128.40	21.19	52.66	21.19
12	**Total Sales**	**47932.22**	**26848.13**	**47331.84**	**26732.44**
13	Add: PLEC, MMC, Theft and Other Charges	-	569.43	-	569.43
14	Less: HV Rebate, TOD Tariff and TOD Rebate for adjusting PLEC	-	-275.13	-	-275.13
15	**Grand Total**	**47932.22**	**27142.43**	**47331.84**	**27026.74**

5.23 Carrying Cost on Revenue Gap

True Up FY 2014-15

The Commission in Table 2.15 of this Tariff Order, has determined a Revenue (Deficit) of ₹113.17 crore in the True Up for FY 2014-15. Accordingly, the Commission determines carrying cost on the Revenue (Deficit) of ₹113.17 crore @11.30% for FY 2014-15 (six months), @11.31% for FY 2015-16 (full year), @9.36% for FY 2016-17 (full year) and @9.36% for FY 2017-18 (six months).

The carrying cost on revenue gap of ₹113.17 crore for FY 2014-15, amounting to ₹12.79 crore (₹6.39 crore for six months of FY 2014-15 and ₹6.40 crore for six months of FY 2015-16) is allocated to GoP.

Thus, carrying cost on revenue gap of ₹113.71 crore for FY 2014-15, amounting to ₹22.29 crore (₹6.4 crore for six months of FY 2015-16, ₹10.59 crore for FY 2016-17 and ₹5.30 crore for six months of FY 2017-18) is allocated to PSPCL.

True Up of FY 2015-16

The Commission in Table 3.14 of this Tariff Order, has determined a Revenue (Deficit) of ₹431.25 crore in the True Up for FY 2015-16. Accordingly, the Commission determines carrying cost on the Revenue (Deficit) of ₹431.25 crore @11.31% for FY 2015-16 (six months), @9.36% for FY 2016-17 (full year) and @9.36% for FY 2017-18 (six months).

The carrying cost on revenue gap of ₹431.25 crore for FY 2015-16, amounting to ₹84.92 crore (₹24.38 crore for six months of FY 2015-16; ₹40.36 crore for full year of FY 2016-17 and ₹20.18 crore for six months of FY 2017-18) is allowed to the utility.

5.24 Revenue Requirement for MYT Control Period from FY 2017-18 to FY 2019-20

A final summary of Net Revenue Requirement of Distribution Business of PSPCL from FY 2017-18 to FY 2019-20 has been given from Table 5.65.

Table 5.65: Net revenue Requirement of Distribution business of PSPCL from FY 2017-18 to FY 2019-20

(₹crore)

Particulars	Claimed by PSPCL			Allowed by the Commission		
	FY 2017-18	FY 2018-19	FY 2019-20	FY 2017-18	FY 2018-19	FY 2019-20
Cost of Power Purchase	17988.67	19159.52	19959.34	17681.12	18864.56	19738.82
Employee Cost	4338.57	4524.34	4762.42	3966.29	4099.19	4264.89
R&M and A&G Expenses	466.58	507.31	540.73	425.12	455.23	482.13
Depreciation	988.19	1,076.86	1142.66	770.07	810.89	844.43
Interest Charges	3462.61	3,699.58	3868.09	1167.88	1046.48	1146.83
Interest on Working Capital	-	-	-	208.26	209.52	209.35
Return on Equity	364.72	364.72	364.72	496.94	505.47	512.82
Cost of Generation Business (Allowed as per Table 5.61)	4508.44	4562.11	4822.40	3808.32	3819.45	4061.57
Transmission charges payable to PSTCL	1208.56	1,268.99	1332.44	1234.87	1283.86	1337.15
Provision for DSM fund	10.00	10.00	10.00	10.00	10.00	10.00
Total Revenue Requirement	**33336.34**	**35173.43**	**36802.80**	**29768.87**	**31104.65**	**32607.99**
Less: Non-Tariff Income	617.70	622.53	627.59	858.52	863.35	868.41
Net Revenue Requirement	**32718.64**	**34550.90**	**36175.21**	**28910.35**	**30241.30**	**31739.58**

Table 5.66: Cumulative Gap [(Surplus (+) / Deficit (-)] upto FY 2017-18 approved by the Commission

(₹crore)

Particulars	**Claimed by PSPCL**	**Allowed by the Commission**
	FY 2017-18	
Total Gap: Surplus (+) / Deficit (-) upto FY 2016-17 **(A)** (As per Table 4.25)	**(-) 5999.32**	**-531.81**
Net Revenue Requirement for FY 2017-18	32718.64	28910.35
Less: Revenue from existing Tariff for FY 2017-18	27142.43	27026.74
Gap: Surplus (+) / Deficit (-) for FY 2017-18 **(B)**	**(-) 5576.21**	**(-) 1883.61**
Carrying Cost of FY 2014-15 **(C)**	-	**(-) 22.29**
Carrying Cost of FY 2015-16 **(D)**	-	**(-) 84.92**
Total Cumulative Gap: Surplus (+) / Deficit (-) upto FY 2017-18 i.e. (A) + (B) + (C) + (D)	**(-) 11575.53**	**(-) 2522.62**

The Cumulative Gap (Deficit) upto FY 2017-18 is thus, determined at ₹2522.62 crore. The Annual Revenue Requirement for FY 2017-18 is assessed at ₹29768.87 crore with energy sales of 47331.84 MU. The average cost of supply with this revenue requirement comes to 633.05 paise per kWh (₹29768.87 crore/47331.84 MU). The combined average cost of supply works out to 642.45paise per kWh (₹30407.89 crore/47331.84 MU), after taking into account the ARR of ₹29768.87 crore for FY 2017-18, approved consolidated deficit of ₹531.81 crore upto FY 2016-17 and carrying cost of ₹22.29 crore for FY 2014-15 and carrying cost of ₹84.92 crore for FY 2015-16.

Chapter 6
Tariff Related Issues

6.1 Sale of Surplus Power

6.1.1 The Commission in the Tariff Order for FY 2016-17, approved the base tariff rate of ₹4.99 per kVAh for Large Supply industrial category consumers, who consume power above threshold limit (worked out as per para 7.4.3 of the Tariff Order for FY 2016-17). All other surcharges and rebates as approved by the Commission and Govt. levies as notified by the State Government were to be charged extra. This was done with a view to encourage consumption of surplus power in order to reduce the burden of fixed cost of the surrendered power on the consumers of the State.

6.1.2 Now, in the ARR for MYT Control Period from FY 2017-18 to FY 2019-20 PSPCL has projected surplus power of 24884 MU, 26037 MU and 24957 MU during FY 2017-18, FY 2018-19 and FY 2019-20. The surplus power has been proposed to be surrendered, as per merit order of power purchase from the thermal plants. But, PSPCL has not submitted any proposal to utilize/sell this power. Various consumers/ stakeholders in their objections/suggestions on the ARR have suggested continuing the system of reduced base rate for energy consumption above a threshold limit.

6.1.3 The Commission has also analyzed the energy sale figures of Large Supply industrial category during FY 2016-17 and observed that the energy sales of the utility for LS category has increased from 10087 MU in 2015-16 to 11115 MU in 2016-17, indicating that the incentive has indeed yielded result. **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 @₹4.45 per kWh for Small Power and ₹4.23 per kVAh for Large Supply/Medium Supply consumers, for all categories of 'Industrial Consumers' who consume power above the threshold limit i.e. for the consumption in excess of the maximum consumption recorded during the FY 2015-16 and FY 2016-17. However, in case, the period is less than two financial year i.e. if the connection has been released after 31.03.2015, the reduced energy charges shall not be permissible. All other terms and conditions, including determining of threshold limit, shall remain same as approved in the Tariff Order for FY 2016-17 read with order of the Commission dated 18.10.2016 in Petition No. 64 of 2016.**

6.2 Time of Day (ToD) Tariff

6.2.1 Time of Day (ToD) tariff is a tariff structure in which different rates are applicable for use of electricity at different times of the day. This is put in place to reduce demand/ consumption of electricity during peak hours and to increase demand/consumption during off peak hours. Thus restrictions on power supply during peak hours and rebate during off peak hours results in a flattening of the load curve and allows operation of the system within certain parameters to avoid cascade tripping.

6.2.2 The Commission, in the Tariff Order for FY 2016-17, decided as a policy:

i) To remove PLEC and approved the following ToD tariff:

a) ToD tariff comprising of normal tariff plus additional charge as approved by the Commission in the Tariff Order, applicable during peak hours from 06:00 PM to 10:00 PM from 1st June to 30th September for Large Supply industrial category consumers.

b) ToD tariff comprising of normal tariff minus rebate as approved by the Commission in the Tariff Order, applicable from 10:00 PM to 06:00 AM (next day) from 1st October to 31st May of next year, for Medium Supply & Large Supply industrial category consumers.

ii) In the Tariff Order for FY 2016-17, the Commission also approved to charge additional charge of ₹2.00 per kVAh to Large Supply industrial category consumers from 6.00 PM to 10.00 PM and allow rebate of ₹1.00 per kVAh to Large Supply industrial category consumers and Medium Supply industrial category consumers from 10.00 PM to 6.00 AM (next day).

6.2.3 IIM, Ahmedabad, engaged by the Commission for suggesting measures for addressing the issue of surplus energy available with PSPCL, has discussed and recommended as under, in the matter of ToD tariff:

"…. The data on Medium Supply and Large Supply industrial categories for FY 2016-17 and FY 2015-16 suggests that the MS industrial consumers have responded to off-peak rebate by shifting the consumption during non-peak hours. In case of LS industrial consumers, the evidence is weak even though their overall consumption has shown good growth post August, 2016. This suggests that there is some evidence even in this short period for the effect of the off-peak hour rebate. Hence, it may be worthwhile to persist with off-peak rebate. This will encourage the industry to respond once they are assured stability in the ToD tariff regime.

The rebate can be increased to ₹1.50/kVAh and the peak hour charges during peak season can also be increased by ₹3.00 (or even ₹4.00) /kVAh as compared to ₹2.00/kVAh at present. This ToD regime may be declared for at least 2 years for the industrial consumers to respond. Further, in no case, the marginal tariff after rebate should be lower than ₹4.50/ kVAh in peak season and ₹3.50/ kVAh in off-peak season.

…… to ensure that the consumers who opt for non-peak hours supply are not simply getting the benefit of rebate because even otherwise they would have been operating continuously (for example, continuous process industries), the rates for such consumers could be made disproportionately higher for peak hours. Further, the rebate can be given on any excess consumption compared to the past consumption. This rebate could also be available to any new unit being setup."

6.2.4 **In view of the above and to further flatten the demand curve, the Commission decides to extend the ToD tariffs also for NRS/BS consumers with sanctioned Contract Demand exceeding 100 kVA w.e.f. 01.11.2017. The Commission expects that all such NRS/BS consumers have already been provided with ToD meters. In case of any exception, the distribution licensee is directed to provide ToD meters to such consumers within a month of issue of this Tariff Order and ToD Tariff shall be applicable from the date ToD meter is installed. ToD tariffs applicable for the FY 2017-18 shall be as under:**

a) For the Period 1st April, 2017 to 31st October, 2017

i) For Large Supply Industrial Category Consumers

<table>
<tr><th>Period</th><th>Time period</th><th>ToD Tariff</th></tr>
<tr><td rowspan="3">1st April, 2017 to 31st May, 2017</td><td>06.00 AM to 06.00 PM</td><td rowspan="2">Normal Tariff*</td></tr>
<tr><td>06.00 PM to 10.00 PM</td></tr>
<tr><td>10.00 PM to 06.00 AM (next day)</td><td>Normal Tariff* minus ₹1.00/kVAh</td></tr>
<tr><td rowspan="3">1st June, 2017 to 30th September, 2017</td><td>06.00 AM to 06.00 PM</td><td>Normal Tariff*</td></tr>
<tr><td>06.00 PM to 10.00 PM</td><td>Normal Tariff* plus ₹2.00/kVAh</td></tr>
<tr><td>10.00 PM to 06.00 AM (next day)</td><td>Normal Tariff*</td></tr>
<tr><td rowspan="3">1st October, 2017 to 31st October, 2017</td><td>06.00 AM to 06.00 PM</td><td rowspan="2">Normal Tariff*</td></tr>
<tr><td>06.00 PM to 10.00 PM</td></tr>
<tr><td>10.00 PM to 06.00 AM (next day)</td><td>Normal Tariff* minus ₹1.00/kVAh</td></tr>
</table>

ii) For Medium Supply Industrial Category Consumers:

Period	Time period	ToD Tariff
1st April, 2017 to 31st May, 2017	06.00 AM to 06.00 PM	Normal Tariff*
	06.00 PM to 10.00 PM	
	10.00 PM to 06.00 AM (next day)	Normal Tariff* minus ₹1.00/kVAh
1st June, 2017 to 30th September, 2017	06.00 AM to 06.00 PM	Normal Tariff*
	06.00 PM to 10.00 PM	
	10.00 PM to 06.00 AM (next day)	
1st October, 2017 to 31st October, 2017	06.00 AM to 06.00 PM	Normal Tariff*
	06.00 PM to 10.00 PM	
	10.00 PM to 06.00 AM (next day)	Normal Tariff* minus ₹1.00/kVAh

b) For the Period 1st November, 2017 to 31st March, 2018

For Medium Supply/Large Supply Industrial Category and NRS/BS consumers with sanctioned Contract Demand exceeding 100 kVA:

Period	Time period	ToD Tariff
1st November to 31st March	06.00 AM to 06.00 PM	Normal Tariff*
	06.00 PM to 10.00 PM	
	10.00 PM to 06.00 AM (next day)	Normal Tariff* minus ₹1.25 per kVAh

***** As per Schedule of Tariff applicable for FY 2017-18.

6.2.5 **Cumulative effect of ToD rebate and reduced energy charges for consumption beyond threshold limit (as per para 6.1 above) shall be limited to the lowest Energy charges of ₹4.23 per kVAh.**

6.3 Two Part Tariff for Retail Supply

6.3.1 Section 45 (3) of the Act provides that, the charges for electricity supplied by a distribution licensee may include a fixed charge in addition to the charge for the actual electricity supplied. Moreover, the Tariff Policy, 2006 (and also Tariff Policy, 2016) also focuses on introduction of Two Part Tariff and Time of Day (ToD) tariffs. Clause 8.4 (1) of Tariff Policy defines the tariff components and its applicability as under:

"Two-part tariffs featuring separate fixed and variable charges and Time differentiated tariff shall be introduced on priority for large consumers (say, consumers with demand exceeding 1 MW) within one year…"

In view of the above provisions, the Commission in its various Tariff Orders directed the Utility (PSPCL) to submit a proposal for introduction Two Part Tariff in the State.

In compliance to thereof, PSPCL submitted the Two Part Tariff proposal to the

Commission with the ARR & Tariff petition for FY 2012-13. But, keeping in view the divergent views expressed by various stakeholders in the objections raised by them against the proposal, the Commission decided to more surely prepare the ground for its implementation and directed PSPCL to conduct mock trial/parallel run of the proposed Two Part Tariff system, at least in five selected Divisions of PSPCL for 6 months, and submit a detailed report along with a more refined proposal for introduction of Two Part Tariff, addressing the concerns of the consumers/consumer organizations. After conducting mock trial/parallel run, the PSPCL re-submitted the proposal ensuring revenue neutrality with the single part tariff, reiterating that the Two Part Tariff has characteristics that the low consumption consumers pay more and the consumers having higher consumption pay less. Again, several consumers/ consumer organizations raised objections to the proposal, apprehending fear that their bill amount will increase if the proposal submitted by PSPCL is introduced in the present form. PSPCL tried to allay the apprehensions of the objectors in its reply to the objections raised by the objectors. But, the Commission felt the need for consensus building amongst various stakeholders before introduction of Two Part Tariff in the State and directed the PSPCL to re-examine the issues/objections raised by the consumers/consumer associations and resubmit the proposal, after addressing the concerns of the majority of the consumers/consumer associations.

6.3.2 **PSPCL's Submission**: Now, PSPCL has made the Two Part Tariff proposal a part of the ARR Petition for the MYT Control Period from FY 2017-18 to FY 2019-20. The salient features of Two Part Tariff proposal submitted by the PSPCL are as under:

i) The tariff categories have been kept same but numbers of sub-categories under DS, NRS and LS have been increased based on sanctioned Load/Demand groups and their Utilization factor.

ii) In order to split the Single Part Tariff into Two Part Tariff, the Utilization Factor has been worked out based on the category wise energy consumption of total consumers of PSPCL for FY 2015-16 (being the latest FY for which actual data is available). However, with the change of pattern of Open Access consumption in the State and various incentives to Industrial consumers, 10% increase in Utilization Factor for LS Industry has been considered.

iii) PSPCL has submitted that, since Fixed Charges for full recovery of Fixed Charges of Distribution Licensee works out to be much higher than the existing Minimum Monthly Charges (MMC) applicable for the respective category, it has thus proposed Fixed Charges keeping in view the paying capacity of various categories of consumers as per the principle being followed in other States as well. So, with the levy of these proposed Fixed Charges only a small percentage of total Fixed Costs shall be recoverable & the balance automatically gets reflected in the rate of energy charges while designing Two Part Tariff of various categories of consumers.

iv) Fixed Charges have been proposed to be recovered as per Contract Demand in kVA for categories having kVAh Tariff and on the basis of Sanctioned Load in kW for consumers having kWh Tariff under the existing system. Further, Fixed Charges are proposed to be recovered at 80% of the Contract Demand or actual whichever is higher for all demand based categories except sub-categories under DS and NRS.

v) Keeping in view the MMC being recovered from various categories of consumers, PSPCL has submitted that it shall be at loss while recovering a fractional part of Fixed Charges and have assumed that only 50% of MMC shall be covered in the splitted Two Part Tariff at the Utilization factor and proposed to cover the remaining 50% by increasing the energy charges.

vi) While designing Two Part Tariff, the revenue from energy charges & MMC as available from various consumer categories under the existing Single Part Tariff approved by the Commission for the FY 2016-17 has been taken as the base and overall revenue neutrality of PSPCL has also been kept in view.

vii) In the Two Part Tariff structure, the monthly billing shall comprise Fixed Charges plus energy charges for energy consumed during the month and Monthly Minimum Charges (MMC) being levied currently shall be discontinued. However, billing shall continue on monthly basis for all categories of consumers except for DS & NRS consumers having sanctioned load < 10 KW.

viii) PSPCL has proposed that, there should be no seasonal category; it be considered under General Industrial category. Also, Cold Stores, Ice Factories and Ice Candies consumers have been proposed to be billed on rates as applicable to General Industrial categories.

ix) Surcharges (including Surcharge on Continuous Process industry and demand surcharge for exceeding the Contract Demand), rebates currently being levied/ given and other terms & conditions as per Schedule of Tariff & General Conditions of Tariff shall continue to be applicable.

x) Agriculture pump set & AP High-Technology consumers, Golden Temple & Durgiana Temple, Sri Amritsar Sahib and Temporary supply have been proposed to be continued to be charged Single Part Tariff.

6.3.3 **Objections and suggestions:** In response to the Public Notice inviting objections and suggestions from the general public and other stakeholders against the petition(s) filed by PSPCL for ARR of MYT Control Period from FY 2017-18 to FY 2019-20, various objections/suggestions were received from the public/stakeholders. Objections/suggestions received and responses of PSPCL have been incorporated in **Annexure-IV** of the Tariff Order. The issues raised by consumers/stakeholders relating to Two Part Tariff Proposal are summarized as under:

i) Implementation of Two Part Tariff Structure:

The present exercise is merely based on Revenue Neutrality using sanctioned Load/Demand and utilization factor for each category. If the aim is to keep the billing amount same, then why the present system of Single Part Tariff should not be continued. Single Part Tariff be continued for another one year in view of recession in industrial sector particularly Iron & Steel which is mostly operating during night hours only to avail rebate. Also, an open meeting with all associations is requested before applicability of Two Part Tariff.

ii) Fixed Charges:

a) The Fixed Charges worked out by PSPCL for full recovery are not understandable. Normally the cost of supply/cost to serve decreases with the increase in voltage level as usage of distribution system reduces with the increase in connectivity voltage. Fixing the Fixed Charges as per paying capacity of the consumer category purely on the discretion by PSPCL is violative of the Act. The Fixed Charges be worked out on the basis of charges for serving the fixed costs of assets being used for the category of the consumer and should not have such vide variation. Further, Fixed Charges be calculated on the basis of infrastructure and the fixed expenses incurred for distribution purpose only and not for trading business or generation business or any other business done by PSPCL.

b) PSPCL has proposed higher Fixed Charges for consumers having higher Contract Demand which is a deterrent to big industrial consumers.

c) There should be one common fixed charge for a particular category.

d) The study has allocated the fixed and a variable charge based on the consumption pattern, but does not highlight the Break Even Points of the quantum of sale to recover full Fixed Charges. If it comes below the claimed demand charges, then demand charges should be reduced. Punjab is a Power surplus state; there should be some incentive for higher energy consumption as prevailing in other states such as Madhya Pradesh.

e) Introduction of Two Part Tariff shall be beneficial to the DISCOM, as Fixed Charges shall be recoverable even if the DISCOM does not supply the Power. For levy of Fixed Charges, minimum 95% limit for power availability at the metering point must be specified & in case of lesser availability Fixed Charges for that month to be reduced proportionately.

f) When Two Part Tariff was earlier implemented in 1989, Fixed Charges were leviable on actual maximum demand recorded or 75% of SCD. Now, overall Utilization factor of the LS Power intensive industry is only 28.11% and only 19.57% for general industry. Therefore imposing Fixed Charges for 80% of Contract Demand is unjustified. The chargeable limit needs to be reduced to 50% or maximum demand recorded whichever is higher.

iii) Tariff categories /sub- categories:

a) PSPCL has proposed to earn higher revenue of from LS General Category through this exercise, further within the category, consumers having demand in excess of 2500 KVA are cross subsiding the lower slabs. Clubbing all LS consumers having more than 2500 KVA CD getting supply at 11/33/66/132/220 KV voltage level and proposing one uniform tariff for all amounts to injustice. It will be more appropriate if the segregation of the consumer categories into sub categories be made based on voltage levels on which the consumer gets the power rather than load//demand. This will also make the tariff in compliance with the provision of the Act and Policies which provide for determination of tariff on based on Cost to serve/cost of supply principle.

b) Power intensive category be merged with general category and fixing same tariff for both categories. And, consumers with flat load profile, requiring electricity on a continuous basis, may be considered separately.

iv) All categories of consumers including agriculture consumers are required to be covered under the Two Part Tariff.

v) Other issues:

a) The impact of the revision i.e. Two Part Tariff on cross subsidization has not been worked out in the proposal

b) Electricity Duty & IDF is presently chargeable on the ‘Sale Value of Power’ and is not on MMC amount which is fixed in nature and not dependent on actual usage. Since Fixed Charges does not depend on the actual usage of energy as such this should not form basis for calculation for ED etc.

c) CPPs/Co-Gen Plants will suffers financially as in addition to bearing the fixed cost of power plants, they will have to pay the Fixed Charges for the same to PSPCL for maintaining the CD. They be allowed to either maintain CD as per the requirement on payment of the nominal commitment charges or single part tariff with MMC be continued in their case. Moreover, these plants/consumers have helped PSPCL, when it was facing acute shortage of power and should not be penalized now when it is surplus in power.

d) The tariff has been worked out as per weighted average of energy consumption of three sub-categories and adding 4 paise per unit with respect to MMC recovery. This again is biased against the higher category consumers as they are being loaded with the loss of revenue of lower category. PSPCL smacks of helping the State Government by reducing the subsidy amount payable by GOP for the consumption of SC/BC/OBC/Weaker Sections of Society. Further, withdrawing of MMC and being replaced with fixed charge is putting the consumer in adverse situation as MMC is adjustable against the consumption during the cycle period while the Fixed Charges are in addition to the charges based on consumption.

6.3.4 **IIM Ahmedabad's Recommendations:**

IIM Ahmedabad, in its report submitted to the Commission, in the matter of designing the Two Part Tariff has recommended as under:

i) The first principle is that the variable charge should be no less than short-run marginal cost (or long-run marginal cost, if the system is operating at limits) of the utility.

ii) To incentivize uniform consumption, the fixed charges can be set on the basis of utilization factor. Recovery of fixed charge from consumers, other than AP consumers, requires charging approx. ₹557/kW/month as a fixed charge, which is quite high and infeasible to implement. Instead of recovering the fixed costs, if we take the fixed charges as risk-sharing mechanism and as a tool to increase utilization of the system, then one can peg the fixed charge based on a pre-determined fraction of utilization factor. A revenue neutral fixed charge will benefit all those whose utilization is higher than average.

iii) Those consumer segments which have higher utilization factor can have a higher fixed charge. This is also compatible with the fact that those whose demand is more responsive to marginal costs / energy charge will face lower effective tariff by increasing their utilization.

iv) To start with, the fixed charges may only be implemented for the consumers with large connected load and among large loads, the industry is likely to be more responsive and hence fixed charges should be higher and energy charges low for them.

v) In the case of large supply industrial consumers, given the fact that the utilization factors are very close, there is no strong case for having two separate slabs of 100-500 kVA and 500-1000 kVA. Similarly we would recommend having two (100-1000 kVA and above 1000 kVA) or three (100-1000, 1000-2500 and above 2500 kVA slabs).

vi) To determine two-part tariffs for any segment, first the overall single-part tariff need to be determined based on cross-subsidy burden before splitting it into two part tariff taking into account the existing utilization factor (so as to preserve utility revenue) and benchmarking fixed costs as a fraction of utilization factor after setting the energy charge keeping in mind the marginal cost of supply and expected demand response to energy charge. To prevent under declaration of contracted demand or load, penal fixed charges have to be imposed.

vii) The consumers can be offered two levels of fixed charges; standard and higher with energy charges being lower for the latter (calibrated so as to avoid any loss to the utility revenue). This will help the utility to understand the nature of demand and consumers from the point of demand management. The latter could be fixed at about 50% higher level and should be voluntary. This will also allow the regulator to subsequently judge the nature of growth in consumption within a consumer segment.

6.3.5 **Commission's Observations and Decision:**

The Commission has gone through the Two Part Tariff proposal submitted by the PSPCL, objections/suggestions received from the consumers/ stake-holders along with the comments thereupon by PSPCL and also the recommendations of IIM Ahmedabad, contained in its report submitted to the Commission. The Commission observes and decides as under:

i) Implementation of Two Part Tariff Structure:

While shifting from one tariff structure to another tariff structure, the revenue neutrality of the utility has to be kept in mind. In case, introduction of new tariff structure results in variation in the revenue collection of the utility, then the same would have to be again passed on to the consumers. Hence, the effort of the Commission is to ensure a revenue neutral situation both for the Utility and the consumers, as far as possible. Basically the proposed Two-Part Tariff structure is a breakup of the existing single part tariff structure/including MMC into Two Part Tariff comprising of fixed (Load/Demand) charges & Energy charges in order to ensure predictable recovery of fixed costs commitment of the Utility, which are to be incurred to meet the demand of its consumers on one hand, and to reduce the marginal cost of energy charges to the consumers, on other hand.

Further, the Commission also needs to be mindful of National Tariff Policy which enjoins an early introduction of the Two Part Tariff. Punjab is one of only a few states which have not yet introduced Two-Part Tariffs so far any category of consumers. The matter has been under consideration and in public domain since 2013-14, during which period, adequate opportunities have been provided to the stakeholders to express their views on the Two Part Tariff structure.

Thus, the Commission is of the view that Two Part Tariff structure should be introduced in the State without any further delay.

ii) Fixed Charges:

a) The Commission has observed that, PSPCL has worked out the per unit cost of its total fixed costs commitments and has indicated the Fixed Charges for full recovery of its fixed costs, calculated on the basis of energy consumption by the respective categories of consumers based on their utilization factor, which comes out to be higher than the existing MMC rates. PSPCL has proposed to recover a fraction of fixed costs, constituting its fixed costs and commitments towards fixed costs of power procurement to meet demand of its consumers through Fixed Charges. Further, the Commission observes that the Fixed Charges proposed by the Utility are quite comparable, in fact lower than those applicable in the neighboring States of Haryana and HP or even in Delhi.

   The Commission is of the view that, instead of recovering the full fixed costs through Fixed Charges initially, it needs to be pegged at a fractional level and to be considered as a risk-sharing mechanism and a tool to increase utilization of the system.

b) The Commission is in agreement with the view expressed by IIMA in its report, that the industry is likely to be more responsive to marginal costs/ energy charge and hence Fixed Charges needs to be little higher, resulting in lower energy charges for them.

c) The Commission is also of the view, that generally there should be common fixed charge for a particular category, which is possible only if all the sub-groups within a category have similar utilization factor. But, keeping in view the inherent characteristic of the Two Part Tariff structure wherein the low consumption consumers pay more and the consumers having higher consumption pay less, it would be logical to have different sub-groups for Fixed Charges, in case there is substantial variation in the utilization factor of different load/demand groups within a particular category, so that those having very low utilization as compared to the average utilization factor do not have to pay at excessively higher rates.

d) By the inherent nature of the Two Part Tariff, consumers having higher consumption i.e. who consumes more than the utilization factor at which the tariff has been designed, gets automatically benefitted by having over all lower rate of electricity as marginal costs/energy charges under two-part tariffs are lower, resulting in lower electricity bills under the Two Part Tariff as compared to the existing single part bills.

e) The Commission notes the suggestion made by the consumers/stakeholders to link the levy of Fixed Charges with the minimum power availability of 95% at the metering point. But is constrained by the fact that under the prevalent infrastructure it would not be possible to effectively monitor the power availability at the metering point of every consumer. However, provisions specifying penalties for delay in restoration of power supply to consumers already exists in the 'Standards of Performance' specified by the Commission.

f) The Commission is of the view that given the substantial increase in utilization factor of electricity since 1989, PSPCL's proposal in proposing to charge Fixed Charges at 80% of the sanctioned contract demand or actual whichever is higher, is rather conservative. **The Commission decides that Fixed Charges shall be charged as under:**

- **For consumers covered under Contract Demand system as per clause 10 of General Conditions of Tariff (GCoT), the Fixed Charges shall be levied on 80% of the sanctioned Contract Demand or Actual demand recorded during the billing cycle/month, (restricted to sanctioned maximum demand) whichever is higher. In case, the consumer exceeds its sanctioned Contract Demand during a billing cycle/month, he shall**

be liable to pay demand surcharge as provided in Schedule of Tariff for relevant category.

- **For other consumers (not covered under Contract Demand system as per clause 10 of GCoT, the Fixed Charges shall be levied on 80% of the sanctioned load.**

Further, in case of restoration of supply of electricity to a consumer, Fixed Charges shall be payable in place of MMC as specified in Regulation 34 of Supply Code Regulations.

iii) Tariff Categories/ Sub-categories:

a) The Commission observes that, PSPCL has proposed tariff for LS Industrial category for supply at 11 kV. Tariff at higher voltages shall continue to be at discounted rates as mentioned in para 8.3 [Note (ix) under Table 8.2] of this Tariff Order.

b) The Commission notes the suggestion made by various consumers to merge the Power intensive (PIU) category with the General Industrial Category and shall be deciding the issue after holding consultations with the concerned stakeholders.

c) The Commission approves the PSPCL's proposal regarding new sub-categories under DS/NRS Categories based on their utilization factor, with an amendment i.e. by replacing 7kW instead of 10kW in view of Supply Code Regulations, which provides for change in supply voltage from Single phase 230V to three phase 400V for DS/NRS loads exceeding 7 kW:

(i) Sub-categories of DS Consumers having loads; upto 2kW, exceeding 2kW & upto 7kW, and exceeding 7kW & upto 50kW, in place of the existing single sub-category of 0-50 kW.

(ii) Sub-categories of NRS Consumers having loads; upto 7kW and exceeding 7kW & upto 50kW, in place of the existing single sub-category of 0-50 kW.

d) The Commission also decides:

(i) To introduce a new tariff slab for consumption exceeding 500 units for DS and NRS consumers, having loads upto 50 kW.

(ii) To have a simplified single-slab tariffs for DS/NRS category consumers

having sanctioned Load/Demand in excess of 50kW.

(iii) To have three sub-categories under LS Industrial category (General) having Contract Demand (CD); exceeding 100kVA & upto 1000kVA, exceeding 1000kVA & upto 2500 kVA and exceeding 2500 kVA and two sub-categories under LS Industrial category (PIU/Arc Furnace) having CD; exceeding 100kVA & upto 1000kVA and exceeding 1000 kVA.

iv) Seasonal industry/ Ice factory & Ice candies and cold storage consumers: PSPCL in its Two Part Tariff proposal has proposed to consider the seasonal category under 'general industrial category' and to also charge Ice factory, Ice candies and cold storage industrial categories as per general industrial category rates. No objection from any consumer/stakeholder was received against the proposal. **Accordingly, Commission decides to charge Energy Charges from these categories, at the rates as applicable to the corresponding general industrial category consumers.**

However, the Commission feels that it would not be convenient for them to pay Fixed Charges during their non working/off seasonal period and decides to charge Fixed Charges from these categories of consumers as under:

a) Seasonal Industry shall pay Fixed Charges as specified in respective Schedule of Tariff for 6 months only during their seasonal period, no fixed charges shall be levied during the remaining part of the year.

b) Ice factory & Ice candies and cold storage consumers shall pay Fixed Charges as specified in respective Schedule of Tariff.

Further, detailed procedure for billing of Seasonal industries has been specified in condition 18 of General Conditions of Tariff, annexed with the this Tariff Order. The amended procedure for billing of seasonal industry shall be applicable for the season commencing w.e.f. 1st September/October, 2017, as the case may be.

v) Marriage Palaces: The Fixed Charges for marriage palaces (covered under NRS Category) shall be charged on 10% of Sanctioned Load/Contract Demand or Actual Load/Demand recorded during the billing cycle/month, whichever is higher (restricted to sanctioned Load/demand) In case, the consumer exceeds its Sanctioned Load/Contract Demand during a billing cycle/month, he shall be liable to pay load/demand surcharge as specified in Schedule of Tariff for NRS category.

vi) In view of the fact that no MMC is being charged under the existing Single Part Tariff from the consumers of ‘Agricultural Pumpset, AP High-Technology, Golden Temple and Durgiana Mandir categories, the Commission accepts the utility’s proposal to continue with Single Part Tariff for these categories**. However, the Commission decides to cover the following consumer categories under the Two Part Tariff structure:**

a) Compost/Solid Waste Management Plants for Municipalities/Urban Local bodies, as MMC (@ 47/kVA) is being charged from this category under the existing Single Part Tariff.

b) Temporary supply with Fixed Charges and Energy Charges @1.5 times the rate, applicable to the relevant permanent supply category consumers corresponding to the connected load/demand. Fixed Charges shall be payable on monthly basis. The revised rates for Temporary Supply shall be applicable from 1st November, 2017 onwards.

vii) Other issues:

The Commission’s view on following issues raised by consumers/stakeholders is as under:

a) **Cross-subsidy levels:** In order to determine two-part tariffs for any segment, first the overall single-part tariff is determined based on the approved cross-subsidy levels. It is then split into two-part tariff taking into account the existing utilization factor. So cross-subsidy levels of the two-part tariffs shall remain almost the same as that of single-part tariff.

b) **Electricity Duty**: Charging of Electricity Duty, IDF and other statutory levies/taxes falls under the domain of the State Govt.

c) CPPs/Co-Gen plants/consumers: The Commission recognizes the role played by CPPs/Co-Gen plants/consumers in helping the State when it was facing an acute shortage of power. But, is of the view that since the requirement of the load/contract demand for utilization by the CPPs/Co-Gen plants/consumers has to be met by the Utility, it has to tie up the power and keep its capacity reserved, for which it has to commit the fixed costs. Therefore, CPPs/Co-Gen plants/consumers are also liable to pay the Fixed Charges for the same to the Utility.

d) **MMC:** Discontinuation of MMC and imposition of Fixed Charges for recovery of fixed costs of the utility is the inherent character of the proposed structure.

Further, while shifting from one tariff structure to another tariff structure, the revenue neutrality of the utility has to be kept in mind. Thus, it is logical to load a part of revenue loss anticipated on account of non levy of existing MMC on Energy charges of the respective category, based upon the consumption worked out on the basis of designed utilization factor.

viii) **Accordingly, the Two Part Tariff rates approved by the Commission for FY 2017-18 are specified in Table 8.2 of this Tariff Order.**

6.3.6 **Regularization of load:** With the introduction of Two Part Tariff, information on the Load/Demand of the consumer becomes more important as Fixed Charges are linked to the Load/demand of the consumers. It is felt that the consumers while taking connection would have declared a load as per their installation at that time, but with the passage of time may have added more load without getting it regularized from the Utility. **Therefore, the Commission directs the Utility 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. The terms and conditions for VDS shall be as approved by the Commission in Petition Nos. 7 & 24 of 2014 except for the condition regarding rebate of 20% in Service Connection Charges, which shall be now chargeable at the normal rates. The Utility shall give wide publicity regarding the VDS scheme. Performa, free of charge, containing simple format for load declaration be sent to all consumers along with the electricity bills and special counters be setup in sub-divisions for guiding consumers in declaration of their load and accepting the load declaration forms. Load declaration shall be accepted without any charges and receipt properly acknowledged. Applicable Charges for load regularization, if any, shall be recoverable through separate bill cum notice. The load shall be deemed to be regularized from the date of submission of the self declaration proforma. Special teams at Circle, Division and sub-division level be constituted for helping consumers to get their load regularized without any hassle. After the expiry of VDS, consumers shall be liable for the payment of Load surcharge as specified in the relevant 'Schedule of Tariff' for the respective category, on detection of any unauthorized load. After the expiry of VDS, Utility shall furnish following information to the Commission:**

i) No. of consumers (separately under DS/NRS/SP categories) who availed the VDS.

ii) Total load declared under the scheme separately for DS/NRS/SP categories.

6.4 Cost of Supply

6.4.1 In view of the provisions of Electricity Act, 2003 and the National Electricity Policy, the Commission in its various Tariff Orders has been directing PSPCL to expedite the conducting of study on 'Cost of Supply' and submit its findings to the Commission at the earliest. PSPCL, at the time of processing of ARR and Determination of Tariff petition for FY 2013-14, submitted the cost of supply study report. The cost of supply study report containing detailed explanation on the approach and the methodology developed, results obtained from the two methodologies referred to as Methodology I and Methodology II. The report was made available for offering comments/suggestions by the stakeholders.

6.4.2 The Commission, after considering various comments/suggestions made by the stakeholders and the response of PSPCL, decided to adopt Methodology II for determination of cost of supply to various categories of consumers. Indicative voltage-wise, category-wise cost of supply for the respective years, on the basis of results obtained with Methodology-II was also made part of the Tariff Orders wef FY 2013-14. In the Tariff Order for FY 2013-14, the Commission also observed that, it would have been ideal to fix electricity tariff for all consumers on cost to serve basis. But, historically, there has been extensive cross subsidization in the electricity sector. The tariff for consumers, who pay less than the cost to serve, will need to be hiked significantly to cover the gap between the tariff of subsidized consumers and cost to serve these consumers. Further, the Commission is raising the tariff of subsidized consumers gradually to reduce this gap, and at the same time avoiding a tariff shock to subsidized consumers and bringing the tariffs of various consumers within reasonable levels of their cost to serve. Keeping this in view and in order to move in the direction of cost of supply, the Commission decided to give rebate in the Tariff Orders w.e.f. FY 2013-14, to the various categories of consumers getting supply at 11 kV/33 kV/66 kV/132 kV/220 kV (at 400 kV also w.e.f. Tariff Order for FY 2015-16).

6.4.3 **On the basis of data submitted by PSPCL in this Petition for FY 2017-18 to FY 2019-20, the Commission has determined the indicative voltage-wise, category-wise cost of supply for the year 2017-18, using Methodology II (Appendix II, Volume-I). Further, the Commission decides to continue with the rebates as mentioned in para 8.3 [Note (ix) under Table 8.2].**

6.5 kVAh Tariff and Contract Demand system

6.5.1 The Commission in the Tariff Order for FY 2014-15 approved the introduction of kVAh tariff for Large Supply, Bulk Supply, Railway Traction, Medium Supply, DS (load more than 100 kW) and NRS (load more than 100 kW) categories of consumers. The Commission also approved the extension of kVAh Tariff and Contract Demand system to DS and NRS categories of consumers having connected Load more than 50 kW (and upto 100 kW) in the Tariff Order for FY 2015-16.

6.5.2 The Commission intends to extend the kVAh Tariff and Contract Demand system further. This system is a win-win situation for the consumers as well as the utility and its implementation ensure better quality of power as improved power factor of the system translates into less voltage excursions beyond the prescribed limits, less system breakdowns. Further, if a consumer improves/maintains his power factor more than conversion factor fixed for that category of consumers, then his energy consumption gets reduced. For the utility, the prime benefit is maintenance of high power factor by the consumers of these categories, which in turn helps in improving the system parameters and reduced technical losses, interruptions etc. It also translates into direct monetary benefit to the utility through reduced cost incurred on installation of HT/LT capacitors at line/distribution transformers. In case, the power factor is not maintained at desired levels by the consumers, then licensee automatically recovers higher revenue from the consumers responsible for having lower power factor. The, kVAh Tariff and Contract Demand system is advantageous to the consumers also in the sense, that it give them flexibility in installation of additional electricity consuming equipments provided they keeps their demand within the sanctioned limits.

6.5.3 Since, introduction of kVAh Tariff and Contract Demand system requires readiness on the part of the Utility such as installation of compatible meters on such consumers; **PSPCL is directed to submit the roadmap for introduction of contract demand system for the SP Industrial category and other (remaining) consumers having load in excess of 20 kW, within 3 months from the issue of Tariff Order.**

6.6 Discontinuation of Additional Charge for Continuous Process Industry

6.6.1 The Commission in the Tariff Order for FY 2012-13 has approved the additional charge of 10 paise/unit over and above the normal tariff on the prorata consumption worked out on the basis of the contract demand sought by the consumer for running the industry on continuous basis during non peak load hours and total sanctioned Contract Demand with effect from November 01, 2012.

6.6.2 While approving the Additional Charge for Continuous Process Industry the Commission had noted that, the continuous process industry is always given preference while imposing power regulatory measures and such consumers are therefore not subjected to any power cut or weekly off days. During peak load hours, the continuous process industry is allowed to avail power by paying peak load exemption charges, whereas in shortage scenario, this facility is not available to general industry.

The scenario on power availability in Punjab has changed with PSPCL becoming surplus in power, the Commission, in the Tariff Order for FY 2016-17 as a policy, had already removed PLEC and approved ToD tariffs for Large Supply and Medium Supply industrial category consumers. The same policy is being continued in this Tariff Order for Large Supply and Medium Supply industrial category consumers and the Commission has also extended the ToD tariff for NRS/BS consumers with sanctioned Contract Demand exceeding 100 kVA. **As, PSPCL continues to remains surplus in power, moreover these industries are already subjected to ToD Tariffs for using power, the Commission decides to discontinue the levy of the additional charge (of 10 paise/unit over and above the normal tariff on the prorata consumption) for running the industry on continuous basis. The discontinuation of additional charge for continuous process industry shall be applicable w.e.f. 1st November, 2017 onwards.**

Chapter 7
Directives

Compliance of Directives

The Commission has been issuing various directions to PSPCL through Tariff Orders in order to bring efficiency, transparency in the operations of the distribution licensee and also to ensure availability of quality power at affordable rates to all sections of the society as envisaged in the Electricity Act, 2003. Various directions to reduce T&D losses, timely implementation of Central Govt. schemes, measures to improve quality of supply, energy audit, DSM measures, reduction in employee cost, adherence to Standard of Performance etc are being issued to achieve the above mentioned goals. However, it has been observed by the Commission that PSPCL has failed repeatedly to comply with the directions of the Commission. The Supreme Court of India in its judgment dated 14.08.2007 in Appeal (Civil) No. 2846 of 2006 has held that:

"---------------There can be no manner of doubt that the Commission has full powers to pull up any of its licensee or distribution company to see that the rules and regulations laid down by the Commission are properly complied with. After all, it is the duty of the Commission under section 45(5), 55(2), 57, 62, 86, 128, 129, 181 and other provisions of the Act to ensure that the Public is not harassed".

The Commission expects that PSPCL shall put its entire endeavour to comply with the directions issued in this Tariff Order within the time frame specified in this Order failing which Commission will initiate action under section 142 and 146 of the Electricity Act, 2003. The status of compliance of directives issued in the Tariff Order for FY 2016-17 along with the comments and further directives for compliance of PSPCL during FY 2017-18 of the Commission is summarized as under:

Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
7.1	**T&D Loss Reduction**	**(i) Shifting of meters outside consumer premises** 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	**(i) Shifting of meters outside consumer premises** Scheme wise detail of meter shifted and balance meters required to be shifted ending March, 2017, is as under:	**(i) Shifting of meters outside consumer premises** 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

<table>
<tr><th colspan="5">Progress/ status report of compliance of directives ending March, 2017.</th></tr>
<tr><th>Sr. No.</th><th>Issues</th><th>PSERC Comments & Directives for FY 2016-17</th><th>Progress of compliance of Directives ending March, 2017</th><th>PSERC Comments & Directives</th></tr>
<tr><td></td><td></td><td>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.

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.

<u>Third Party Audit:</u>
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</td><td><table>
<tr><th colspan="2">Scheme</th><th>Total Meters Covered Under The Scheme (In Lacs)</th><th>Total Meter Shifted Upto 03/ 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>
<tr><td rowspan="3">Non-APD RP</td><td>Phase -I</td><td>19.87</td><td>19.87</td><td>0</td><td>0</td></tr>
<tr><td>Phase -II</td><td>11.81</td><td>9.66</td><td>2.15</td><td>2.15</td></tr>
<tr><td>In-house</td><td>5.78</td><td>3.87</td><td>1.91</td><td>1.91</td></tr>
<tr><td>R-APD RP</td><td>(Part-B)</td><td>11.39</td><td>9.47</td><td>1.92</td><td>1.92</td></tr>
<tr><td>Total</td><td></td><td>48.85</td><td>42.87</td><td>5.98</td><td>5.98</td></tr>
</table>
Remarks
Out of the balance 2.15 lac connection under phase-II:-
1. 0.99 lac connections are disputed.
2. Work of 0.81 lac connections under DS circle Patiala is under dispute with M/s Jindal Traders Barnala & case is lying with Hon'ble Arbitrator.
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.

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 and work of evaluation is under progress.
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</td><td>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.
Under R-APDRP towns, PSPCL was directed to complete shifting of meters by March, 2017 which is the date fixed by MoP/GoI 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.

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</td></tr>
</table>

Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
		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 Commi-ssion 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 Commi-ssion 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.		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.
		(ii) Replacement of Electro-mechanical (E/M) meters **a) 3-ф meters: SP/DS/NRS** 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	**(ii) Replacement of Electro-mechanical (E/M) meters** **a) 3-ф meters: SP/DS/NRS** There are 223 No. electromechanical meters balance as on 31.3.2017. These will be replaced by 30.04.2017	**(ii) Replacement of Electro-mechanical (E/M) meters** **a) 3-ф meters: SP/DS/ NRS** During review meeting held on 14.10.2016, Director/ Distribution assured that all 3-ф electromechanical meters shall be replaced by Dec. 2016 but still 223 meters are pending. PSPCL has repeatedly failed to complete the job in a time bound manner.

<table>
<tr><th colspan="5">Progress/ status report of compliance of directives ending March, 2017.</th></tr>
<tr><th>Sr. No.</th><th>Issues</th><th>PSERC Comments & Directives for FY 2016-17</th><th>Progress of compliance of Directives ending March, 2017</th><th>PSERC Comments & Directives</th></tr>
<tr><td></td><td></td><td>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. 2016.

b) 1-ф meters (DS/NRS):
The Commission notes with serious concern that against a revised target of completion of replacing all 1-ф meters under R-APDRP areas by July 2015, there are still 2,83,538 meters pending for replacement. Only 42049 Nos. 1-ф meters of APDRP areas have been replaced in last one year.
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.
The Commission observes that PSPCL has not committed any time frame to complete the job and has rather left it to the contractors.
The Commission directs PSPCL to ensure replacement of all 1-ф electro-mechanical meters by March 2017.
PSPCL is directed to allocate a unique identification code for electro-mechanical</td><td>b) 1-ф meters (DS/NRS)
As on 31.03.2017, there are balance 7.03 Lac. single phase electro-mechanical meters pending to be replaced .

<table>
<tr><th>Detail</th><th>APDRP area</th><th>Non-APDRP area</th></tr>
<tr><td>1 phase electromechanical meters balance as on 31.12.2016</td><td>292661</td><td>420379</td></tr>
<tr><td>Meters replaced up to 31-03-2017 w.e.f. 01.01.2017.</td><td></td><td></td></tr>
<tr><td>Balance Target for 2017- 18</td><td>291648</td><td>411392</td></tr>
</table>
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.</td><td>b) 1-ф electromagnetic meters (DS/NRS)
The Commission notes with concern that 8.52 lac single phase electro-mechanical meters were pending for replacement ending March 2016 and PSPCL was directed in the T.O for FY 2016-17 to replace all by March 2017. However, ending March 2017, there are still over 7.00 lac meters pending for replacement.
PSPCL could replace only 1.49 lac meters during FY 2016-17. Thus the target for replacement of over 7.00 lac meter during FY 2017-18 appears to be unrealistic.
The consistent non-implementation of the directions of the Commission has resulted in failure of the distribution licensee to achieve T&D loss target fixed by the Commission. No further slippage of target date shall be allowed by the Commission. Failure to replace all meters as committed by PSPCL will result in penalty.</td></tr>
</table>

Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
		and electronic meters in order to monitor the progress of replacement of electro-mechanical meters in effective manner.		
		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 compilation".	Instructions had been issued to field offices to replace all burnt/defective meters as per timeframe given in SOP. Key exception report will be submitted at end of June 2017. After stabilization Real time reports are already available for 47 no. APDRP towns at BI portal. Management Information Report (MIR) for each quarter are being submitted to PSERC.	**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 of the data being generated by the agency. Failure to comply will result in penalty.
		(iii) Conversion of LVDS to HVDS 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 TO.	As per methodology duly approved by PSERC earlier the AP losses were being calculated division wise based upon sample meters. As such there is no system to calculate feeder wise AP losses. Now according to the existing practice, the commission has allowed fixed losses based upon feeder wise input so it is not possible to segregate AP feeders having losses more than 16%.	**iii) Conversion of LVDS to HVDS** The Commission is not satisfied with the reply of PSPCL. There has been no compliance of the directions of the Commission during FY 2016-17. In the review meeting held on 14.10.2016 with the management of PSPCL, the Commission expressed its concern regarding computation of T&D losses of AP feeders and directed PSPCL to cover at least 1% AP feeders under 100% metering and compute

Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
		However, PSPCL has not taken any action to implement the directions of the Commission 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 T.O. 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.	No. of AP connections as on 31.03.2017 = 12.43 lac No. of AP catered on HVDS = 4.79 lac	the losses by engaging an independent agency so as to complete the job within this year. However, PSPCL has failed to submit any status report on the directions of the Commission. PSPCL should identify high loss AP feeders and implement the scheme in a time bound manner. A separate direction on this count is also being issued.
		iv) 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 deloading of balance Distribution Transformers by July 2016 and ensure reduction in damage to DTs.	**iv) Reduction in Transformer damage rate:** PSPCL is consistently deloading overloaded DT's. However due to extension of load by AP consumers, about 8283 small capacity transformers and due to natural growth of general consumers 352 large capacity transformers have been found to be overloaded which are being deloaded. All overloaded DT's identified will be deloaded before onset of paddy 2017. .	**iv) Reduction in Transformer damage rate:** The Commission notes the action and directs PSPCL to ensure de-loading of all overloaded distribution transformers.

Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
7.2	**Impleme-ntation of R-APDRP Scheme:**	**R-APDRP (Part A):** 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. 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.	All the towns under R-APDRP Part-A has been declared GO-live on April 2015.	The scrutiny of on-line data for FY 2016-17 available on PSPCL website reveals that out of 47 towns, only 10 towns have losses below 15%. There are 6 towns with AT&C losses above 40%, 14 towns with losses between 30% to 40% and 17 towns with losses between 15% to 30%. There are 2 towns with collection efficiency below 60%. Malout town has AT&C loss of 60.11% with billing efficiency of 69.71% and collection efficiency of 57.22% for full year. PSPCL is directed to take action against delinquent officials/ officers for loss of revenue to the utility due to poor collection efficiency in these towns under intimation to the Commission. It is a matter of concern that huge investment made under R-APDRP scheme has failed to yield the desired results.
		Management Information System (MIS): Under UDAY scheme, PSPCL is required to implement MIS for tracking meter replac-ement, loss reduction & day to day progress. The Commission directs PSPCL to share these reports within one month of issue of TO for FY 2016-17.	**Management Information System (MIS):** Presently all the reports are available online on PSPCL website (www.pspcl.in) in the "Distribution" link under "IPDS" sub link.	**Management Information System (MIS):** The Commission observes that tracking meter replacements, key exceptions etc, are not available on PSPCL website and also the data for AT&C loss of various towns are not correct. PSPCL should ensure correct data on its website.
		R-APDRP (Part B): 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/GOI/ (PFC) so that 50% grant under	The execution of work awarded to various firms is in progress. The work orders of M/S A2Z and its Consortium partners have been cancelled and fresh tender for 22 nos. Towns' (including 6 nos. new towns) was floated on 15.05.2015. The same has been allocated to M/s Nucon Switchgear Pvt. Ltd. & its consortium partners M/s Shreem Electric Ltd for 16 no. towns and to M/s Shreem Electric Ltd for 6 no. towns on 4.1.2016. The details of progress is as under:- **Firm-wise progress of shifting of meters [R-APDRP (Urban Area)] is as under :**	**R-APDRP (Part B):** In the status report ending Dec. 2016, PSPCL reported 100% completion of work by L&T and Godrej. However, the status report ending March 2017 shows that some work is still pending. PSPCL is advised to submit the correct and verified data to the Commission. As per R-APDRP (Par B) scheme of MoP/GoI, if the distribution utility achieves 15% AT&C loss level on

<table>
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<tr>
<td></td>
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<td>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.</td>
<td>
<table>
<tr><th>Sr. No.</th><th>Name of Scheme</th><th>Total Scope</th><th>Shifted up to 31.03.17</th><th>Balance</th><th>Target Date during 2017-18</th></tr>
<tr><td>1.</td><td>L&T</td><td>254429</td><td>253178</td><td>1251</td><td>1251</td></tr>
<tr><td>2.</td><td>Godrej</td><td>202642</td><td>189908</td><td>12734</td><td>12734</td></tr>
<tr><td>3.</td><td>15 No. Towns</td><td>544046</td><td>461335</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>35710</td><td>29881</td><td>29881</td></tr>
<tr><td>5.</td><td>M/s Shreem Electric Ltd.
(6 No. Towns)</td><td>72538</td><td>7343</td><td>65195</td><td>65195</td></tr>
<tr><td></td><td>Total</td><td>1139246</td><td>947474</td><td>191772</td><td>191772</td></tr>
</table>
<table>
<tr><th colspan="2">Scope</th><th colspan="3">Strengthen sub-transmission and Distribution System of 46 towns of Punjab with DPRs cost of ₹1632.70 crore.</th></tr>
<tr><th rowspan="6">Work in Prog-ress</th><th>Name of Firm</th><th>No. of Package</th><th>No. of Towns</th><th>Status of work completed as on 31.12.2016.</th></tr>
<tr><td>L&T</td><td>4 No.</td><td>3 No.</td><td>93.97%</td></tr>
<tr><td>Godrej</td><td>2 No.</td><td>20 No.</td><td>80.76%</td></tr>
<tr><td>M/s Nucon switchgear Ltd.</td><td>1 No.</td><td>16 No.</td><td>40.56%</td></tr>
<tr><td>M/s Shreem Electric Ltd.</td><td>1 No.</td><td>6 No.</td><td>20.46%</td></tr>
<tr><td colspan="4">Work of Patiala town already completed departmentally.</td></tr>
</table>
</td>
<td>sustained basis for 5 years in the project area and project is completed within the time schedule then upto 50% loan is converted into grant every year starting from the year in which the base line data is verified by an independent agency. Now MoP/GoI has fixed the completion data as 31.3.2017, which has not been achieved by the utility. PSPCL is expecting extension in target date from GoI. The Commission reiterates its directions that R-APDRP schemes should be implemented by PSPCL in the time frame fixed by MOP/GOI/ 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.</td>
</tr>
</table>

Progress/ status report of compliance of directives ending March, 2017.				
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7.3	**Energy Audit**	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.	Reports are available online on PSPCL website (www.pspcl.in) in "Distribution" link under "IPDS" sub link. The reports are updated on last working day of each month.	In the TO for FY 2016-17, the Commission observed that 44 towns have AT&C losses more than 15% and expected PSPCL to take remedial measures to reduce losses. However, the scrutiny of on-line data for FY 2016-17 available on PSPCL website reveals that out of 47 towns, only 10 towns have losses below 15%. There are 6 towns with AT&C losses above 40%, 14 towns with losses between 30% to 40% and 17 towns with losses between 15% to 30%. There are 2 towns with collection efficiency below 60%. Malout town has AT&C loss of 60.11% with billing efficiency of 69.71% and collection efficiency of 57.22% for full year. It is a matter of concern that huge investment made under R-APDRP scheme has failed to yield the desired results.
		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. 2016.	Consumer indexing of all feeders of 47 towns has already been completed under R-APDRP Part-A scheme. Work of updation of feeder indexing of Non-APDRP shall be carried out in house by 31-3-2017.	One of the conditions for conversion of loan into grant under R-APDRP is achievement of AT&C loss level of 15% on sustained basis for 5 years. It is apprehended that unless immediate remedial measures are taken by PSPCL, the utility may not be able to fully utilise the grant under the scheme. PSPCL is directed to analyse the reasons for high AT&C losses in these towns and submit the same to the Commission within one month along with remedial measures proposed. Under UDAY scheme, PSPCL was required to complete consumer indexing upto 11 kV level in rural areas by Sept. 2016 but the utility has failed to achieve the target. PSPCL has now assured to complete the job by March 2017. PSPCL is directed to submit the certificate within 15 days of the issue of this TO that consumer indexing of all feeders has been updated.

<table>
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<tr><th>Sr. No.</th><th>Issues</th><th>PSERC Comments & Directives for FY 2016-17</th><th>Progress of compliance of Directives ending March, 2017</th><th>PSERC Comments & Directives</th></tr>
<tr><td></td><td></td><td><u>Energy Audit of Thermal Generating Stations</u>:
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.
Timely action on recommendations/ suggestions in Energy Audit reports be ensured.</td><td><u>GNDTP, Bathinda.</u>
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 March’2017 has been supplied. Energy Audit of unit-3&4 was not carried-out due to their Renovation & Modernization works.
COD (Commercial Operation Declaration) of Unit-3 after its R&M was made w.e.f. 07.12.2012 and the unit is running satisfactorily. The COD of unit#4 has also been made on 27 Sep, 2014 after its R&M works.
Further 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.
GGSSTP Ropar.
The status of implementation of recommendations of energy audit has been submitted.
GHTP Lehra Mohabbat.
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.</td><td>The Commission observes that despite claim of implementing the recommendations of Energy Audit Reports and R&M of all four units by PSPCL, the performance parameters of all the three plants are varying considerably from norms. The status of achievements of targets fixed under PAT-1 be shared with the Commission within one month of the issue of this Tariff order.
The proper implementation of the recommendations of Energy Audit Reports be ensured for all the three thermal plants and achievement of targets/ progress on energy savings under PAT-II scheme of GoI be shared with the Commission on quarterly basis.</td></tr>
<tr><td></td><td></td><td><u>Energy Audit of Hydro Generating Stations:</u>
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.</td><td>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 March, 2017 is tabulated below:
<table>
<tr><th>S. No.</th><th>Name of Plant</th><th>Aux. Cons. (%)</th><th></th></tr>
<tr><td>1</td><td>RSD</td><td>0.24</td><td>0.10</td></tr>
<tr><td>2</td><td>ASHP</td><td>0.093</td><td>0.246</td></tr>
<tr><td>3</td><td>UBDC</td><td>0.28</td><td>0.31</td></tr>
<tr><td>4</td><td>MHP</td><td>0.177</td><td>1.302</td></tr>
<tr><td>5</td><td>Shanan</td><td>0.04</td><td>1.26</td></tr>
</table>
Remarks for:
1. Above Sr. No.4 MHP:
Power generated in the generating unit is carried out to LV side of generated unit to step up T/F</td><td><u>Energy Audit of Hydro Generating Stations:</u>
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.</td></tr>
</table>

Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
			through the 11 KV Aluminium cables (size 500 mm^2at PH1&2 and 800 mm^2 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. Further, generator transformers of this plant (PH-1 to PH-4) are very old and were commissioned during 1983, 1988 & 1989. **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 action has been initiated for procurement of new T/Fs in a phased manner. **3. Above Sr. No.3 UBDC:** Auxiliaries of the project are being fed from 220 KV S/S, Sarna and 132 KV S/S, Gurdaspur i.e. other sources. **Latest Status of Procurement of Transformers:** 1. The purchase order cum contract agreement no 38/HPs/ED.III/M-53 dated11.01.2017 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). 2. The Purchase order cum contract agreement no 39/HPs/ED-I/S-343/Vol.II dt.12.01.2017 has been placed on M/s BBL, N. Delhi for 7 no. Single phase 12 MVA 11/132/√3 KV Generator Transformers for Shanan HEP, Joginder Nagar. 3. Fresh tender enquiries for replacement of 220kV/132kV/66kV CTs/PTs as required under grid code has been floated.	
7.4	**Demand Side Management Energy Conserva-tion**	**i) <u>Bachat Lamp Yojna:</u>** 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	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. In this context, M/s EESL has submitted a proposal regarding implementation of UJALA (unnat jyoti by affordable LEDs for all) formally known as DELP (domestic efficient lighting 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. PSPCL has few observation on the proposal submitted by M/s EESL and to clarify those observation & some financial terms, a meeting was held at PSPCL head office on 02-03-2017 between PSPCL management &	**I) 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 GoI. 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

Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
		submit its roadmap and implementation schedule to fulfil its obligation under UDAY.	Regional manager of EESL. After clarification of various terms & conditions, an agenda regarding implementation of UJALA scheme has been placed before the WTDs for according approval in the upcoming meeting.	priority and intimate the status within 15 days of the issue of this TO.
		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 29.06.2016, it was informed that a demonstrative pilot project for replacement of about 100 existing pumsets 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 to replace 1 lac more pumsets 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	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. 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 demonstrate the Pilot project at 11 KV Chatipeer 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 chattipeer 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.	**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.

Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
		inefficient air conditioners, air coolers, fans etc. under intimation to the Commission.		
		iii) DSM Plan / Capacity Building Programme: 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.	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.	**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.
7.5	**Agricultural consump-tion & Metering Plan**	**Agriculture Consumption** The Commission notes the action **a) Implementation of DDUGJY** 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	**a) Implementation of DDUGJY** b) The matter has been 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 RGGVY XIth plan project for segregation of feeders/AP Consumers metering in Kandi area under DDUGJY. Now PSPCL has submitted a new petition before the Hon'ble PSERC for approval of the 20 no.	**Agriculture Consumption** **a) Implementation of DDUGJY** The Commission has taken a serious view of PSPCL's action to get the DPRs approved under DDUGJY by excluding Kandi Area feeders separation despite clear directions of the Commission. PSPCL is directed to ensure strict compliance of the Order of the Commission dated 24.04.2017 in Petition No. 5 of 2017 for segregation and metering of all kandi area feeders in a time bound

Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
		deliberately ignored the directions of the Commission and did not include these works in the DPRs submitted to REC. 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.	DPRs already sanctioned by the MoP regarding the investment approval for capital works to be under taken under the DDGUJY scheme and of Kandi area projects for segregation of mixed load feeders/metering of AP consumers under DDUGJY scheme. After getting approval from PSERC, project shall be implemented on full turnkey basis, work is to be completed within a period of 24 months from the date of placement of Work Orders.	manner. PSPCL shall submit quarterly status report of the works to the Commission.
		b) AMR of AP feeders 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 (ending 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. 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	**b)** The data of AP feeders of 402 Substation are being received under AMR project and 192 Substation are being received RAPDRP Part A scheme. The data for the 109 no substation out of balance 305 substations is proposed to be covered under IT implementation for non-RAPDRP area under IPDS scheme and 199 no S/Station are to be covered under 11kV rural feeder monitoring scheme of Rural Electrification Corporation ltd. DPRs under IPDS scheme are under approval with ministry of power. Sample feeder details (50 no.) has been forwarded to REC (under 11 kV rural feeder monitoring scheme) for conducting proof of concept (POC). Data of AMR feeders w.e.f. DEC 2016 will be submitted to PSERC. Due to certain technical problems the data of all AMR feeders is presently not being received. The problem is being fixed and data will be made available soon.	**b**) **AMR of AP feeders** The introduction of AMR system of 11 kV feeders, particularly AP feeders, in year 2012-13 was projected by the utility as a major achievement in bringing transparency in the operations of PSPCL. The Commission was assured that real time data for 11 kV feeders shall be made available for which access to the data shall be provided. Though, AMR data of over 2000 feeders was submitted during FY 2013-14 but PSPCL failed to provide correct data to the Commission as there was large number of discrepancies in the AMR data. Despite repeated assurances from the management of PSPCL, no AMR data has been submitted to the Commission since March 2014. In the review meeting held on 14.10.2016, Director/D admitted that data of 2604 AP feeders is being captured at the data centre and the same will be supplied to the Commission within a week but no data has been supplied to the Commission for obvious reasons. PSPCL is directed to explain the reasons for non-submission of the data and also how PSPCL has benefitted with the investment on setting up and maintaining AMR system within one month of issue of this TO. PSPCL shall ensure

Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
		introduction. of DLMS protocol meters to avoid unnecessary delay to the already delayed AMR project. The Commission directs PSPCL to submit the AMR data of the AP feeders without any further delay and also ensure that all AP feeders are covered under AMR.		supply of monthly AMR data regularly to the Commission failing which cut will be imposed on AP consumption.
		c) 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	c) 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.	
		d) Refer to comments & directive of the Commission against (c) above	d) As (c) above.	
		e) 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.	e) Directions have already been given to field offices for providing 100% metering on AP motors running of urban feeders.1439 AP connections on urban feeders are left and will be provided meters shortly.	**e) 100% metering on A.P. consumers fed from urban feeders** The Commission in the TO for FY 2013-14 directed PSPCL to ensure compliance of already standing instruction to meter all AP motors fed from urban feeders. The direction has been reiterated in all subsequent TOs but the only achievement of PSPCL in the last more than 4 years is that instructions to the field officers have been issued. In the review meeting of 14.10.2016, CMD/PSPCL assured that needful shall be done within a week. However

Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
				still 1439 number AP connections fed from urban feeders are unmetered. The Commission directs PSPCL to ensure 100% metering of all such AP consumers failing which unmetered load fed from urban feeders shall not be considered for calculating AP consumption.
		ii) Metering Plan: 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, GoI launched DDUGJY for this purpose but PSPCL preferred to ignore the directions of the Commission and the GoI scheme. The Commission reiterates its directions to PSPCL to submit the Action Plan within one month of issue this Tariff Order to achieve 100% metering.	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 so as to assess the AP consumption as PSPCL has already segregated AP consumption.	**ii) Metering Plan:** The directions of the Commission to provide 100% metering on 1% AP feeders was to assess the T&D losses of AP feeders. However, 100% metering of all consumers is the mandate of the Act and the above direction was not in lieu of the strict compliance of section 55 of the Electricity Act. PSPCL should have utilised funds for this purpose available under DDUGJY. PSPCL is directed to achieve 100% consumer metering within 5 years staring from April 2018. Twenty percent of the AP feeders shall be covered in one year so as to achieve 100% metering in 5 years i.e by March 2023. The Commission directs PSPCL to share the roadmap of 100% metering of AP consumers within one month of issue of Tariff Order. Failure to achieve yearly target shall invite punitive action as per the Act.
7.6	**Employee Cost**	**(i) Implementation of PwC report** i) The Commission notes the action taken by PSPCL. 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	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	The Commission directs PSPCL to plan the redeployment of existing manpower for achieving more efficiency and better performance indices with proper implementation of IT. The roadmap for redeployment of manpower be shared with the Commission. In view of the closure of thermal units, PSPCL is directed to initiate fresh study for optimum utilisation of existing manpower and to reduce employee cost.

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<tr><td></td><td></td><td>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 roadmap for the reduction of employee cost. This exercise must be completed within six months of the issue of this Tariff Order.</td><td>health of the organization in the short as well as long term.
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::
<table>
<tr><th>Productivity Parameter</th><th>Year 2001-02</th><th>Year 2015-16</th><th>Improve-ment (%ge)</th></tr>
<tr><td>Employees per MU of energy sold</td><td>4.39</td><td>0.97</td><td>352 %</td></tr>
<tr><td>Employees per 1000 consumers</td><td>16.32</td><td>4.69</td><td>248 %</td></tr>
<tr><td>Employee per circuit km of LT line</td><td>0.55</td><td>0.26</td><td>111 %</td></tr>
<tr><td>Employee per circuit km of 11 kV line</td><td>0.88</td><td>0.18</td><td>389 %</td></tr>
<tr><td>Employees per D/T</td><td>0.47</td><td>0.05</td><td>840 %</td></tr>
<tr><td>Employees per MUs generated</td><td>3.94</td><td>0.83</td><td>374 %</td></tr>
</table>
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 carrying 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.
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.
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.</td><td>PSPCL is also directed to outsource its meter reading, bill collection, compliant handling & other consumer related services to save employee cost.</td></tr>
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Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
		ii) Reorganization of DS on functional lines: 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.	BOD approved the revised DS functional model by discarding the earlier model on the basis of feedback received from stakeholders regarding difficulties faced by them. Revised model has been implemented in 1. City Circle Amritsar, 2. DS Circle Jalandhar, 3. DS Circle Patiala In addition to above following circles are already organized on functional basis 1. East circle Ludhiana 2. West Circle Ludhiana in rest of circles same will be implemented in phased manner soon.	**ii) Reorganization of DS on functional lines:** In the review meeting held on 14.10.2016, the Commission directed PSPCL that detailed impact assessment report of re-organisation of DS system on functional lines must be supplied to the Commission. PSPCL must submit report within one month of issue of this Tariff Order.
		iii) AMR of H.T. consumers: 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. 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.	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. Work under IPDS scheme has started. DPRs have been completed and control center equipment's have been installed and commission successfully by M/s. Siemens Ltd. 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 modems on existing meters alongwith end to end infrastructure for integration with PSPCL existing MDAS or by providing separated MDAS, Expression of interest has been floated for inviting the firms regarding submission of their offer for end to end infrastructure for integration with PSPCL existing MDAS or by providing separated MDAS and WO will be placed in 3 months.	**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 be shared with the Commission within one month of issue of this Tariff Order.
		iv) Distribution SCADA/ DMS The Commission notes the action taken by PSPCL. PSPCL is directed to ensure completion of the Project as per schedule.	All the DRS/FDS/FAT (Data Required Sheet/Functional Design Specifications/Factory Acceptance test) documents submitted to PSPCL have been approved. All the three SCADA/DMS control center buildings have been further extended for this project up to March 2018 and a D.O letter by Principle-Secretary/Power to joint Secretary/Distribution (MoP) has already been sent by concerned office in this regards.	**iv) Distribution SCADA/ DMS** The Commission notes the progress for implementation of SCADA for three towns. The progress of the SCADA system installation & commissioning be shared with the Commission on quarterly basis. The Commission directs PSPCL to ensure timely commissioning of SCADA.
7.7	**Receivables**	The total receivables have increased from ₹84494.53 lac in 03/	Status of Defaulting Amount (Rs in lacs.) ending 03/2016 viz-a-vis 03/2017 is as under:	**Receivables:** The Commission observes that there is huge difference

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<tr><td></td><td></td><td>2015 to ₹108356.31 lac ending 03/2016. The detailed scrutiny of the defaulting amount data shows that receivables from Govt. Deptts. have increased from ₹34061.41 lac in 03/ 2015 to ₹53013.76 lac in 03/2016.
The reply given for not adopting prepaid meters on Govt. and Temporary connections is not convincing as many progressive utilities are using these meters.
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.</td><td><table><tr><th>Category</th><th>Ending 3/16 (audited)</th><th>Ending 03/17 (un-audited)</th></tr><tr><td>Ind.</td><td>74233.20</td><td>94743.31</td></tr><tr><td>AP</td><td>345.25</td><td>304.53</td></tr><tr><td>GSC</td><td>68196.41</td><td>62977.24</td></tr><tr><td>Others</td><td>1750.37</td><td>1890.64</td></tr><tr><td>Total</td><td>144525.23</td><td>159915.72</td></tr></table>
Defaulting amount statement ending 03/2017 and break up of receivables outstanding against Govt. department are enclosed.

NIT for tender enquiry no MQP-116/2017-18PO(M) has been floated to procure prepaid meter as a pilot project</td><td>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. 68196.41 lac i.e a difference of over 31700 lac, which needs to be explained.
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.</td></tr>
<tr><td>7.8</td><td>Mtc. of category wise details of Fixed Assets</td><td>The Commission notes the action taken by PSPCL.
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.</td><td>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 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</td><td>Mtc. of category wise details of Fixed Assets
Commission is not convinced with the reply of PSPCL and further directs PSPCL to complete the task of preparing the Fixed Assets Cards & Record and submit its Report within a month of the issue of this Tariff Order.</td></tr>
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Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
			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	
7.9	**Loading status of sub-transmission system (66 kV & 33 kV)**	The Commission notes the action taken and directs PSPCL to submit its plan to deload all grid sub-stations and lines having loading above 70% of its capacity.	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 May/June-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. 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%. List of overloaded substation is regularly updated on PSPCL website.	The Commission notes the action taken and directs PSPCL to ensure deloading of all overloaded 33/66 kV lines and grid sub-stations as per the criteria fixed by the utility.
7.10	**Cost Audit of generating stations**	The Commission notes the action taken and directs PSPCL to regularly and timely supply Cost Audit Reports to the Commission.	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 prepared and sent to audit committee & BOD for approval. The same shall be submitted after approval. For cost audit report of FY 2015-16 M/s SDM & Associate has been appointed as cost auditor.	**Cost Audit of generating stations** The Commission notes the action taken by PSPCL. The Commission directs PSPCL to submit the copy of the cost audit report for FY 2014-15 within one month of the issue of this Tariff Order. PSPCL is further directed to ensure timely submission of audit report for FY 2015-16.
7.11	**AMR of DS/ NRS**	The Commission notes the action being taken.	As per the WO, the implementation of smart grid pilot project is to be completed within 18 calendar months, from the date of award of	**AMR of DS/ NRS consumers** The Commission notes the

<table>
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<tr><td></td><td>consumers</td><td>The Commission directs PSPCL to share the progress of the work order on quarterly basis.</td><td>contract i.e. upto Oct/2016
• M/s Kalkitech has completed the site survey. All the design documents submitted by M/s Kallitech have already been approved.
• First FAT for single phase (DS & CS) and three phase (DS & CS) smart meters has failed. 2nd FAT call still awaited from M/s kalki.
• FAT of LTCT (industrial) and HT with CTPT unit (industrial) energy meters has been successfully completed.
FAT for integration of LTCT and CTPT meters software has failed. Firm has given the repeated FAT call for integration of LTCT & CTPT meets with software on 08.05.2017</td><td>action taken and observes with concern that smart grid pilot project is behind schedule. The Commission directs PSPCL to submit the status along with completion timelines of Mohali project immediately. PSPCL should also submit progress of installing smart meters under UDAY scheme within one month of issue of this Tariff Order.</td></tr>
<tr><td>7.12</td><td>Improvement in quality of service</td><td>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 break down/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.</td><td>Instructions have already been issued for implementation of SOP notified by Commission.
Key exception report will be submitted shortly.
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.</td><td>Improvement in quality of service
The Commission notes with serious concern that despite reminders to PSPCL, key exception reports are not being supplied to the Commission.
Despite assurance to adhere to the SoP specified by the Commission, the reports of 47 towns still show some serious violations of SoP.
The Commission directs PSPCL to immediately supply key exception reports.</td></tr>
<tr><td>7.13</td><td>Fuel Audit of various Thermal Plants of PSPCL</td><td>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.
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</td><td>The implementation ending March, 2017 of the directives in Orders dated 27.02.13 in annotated form is attached and the status of implementation of recommendations given by CPRI has also been attached.
The Comparison of GCV of received and bunkered coal is as follow:
<table>
<tr><th colspan="4">GGSSTP, Rupnagar</th></tr>
<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>
<tr><td>Jan-17</td><td>4398</td><td>4035</td><td>363</td></tr>
<tr><td>Feb-17</td><td>4378</td><td>0</td><td>----</td></tr>
<tr><td>Mar-17</td><td>4467</td><td>4176</td><td>291</td></tr>
<tr><th colspan="4">GHTP, Lehra Mohabat</th></tr>
<tr><td>Jan-17</td><td>4190</td><td>4091</td><td>99</td></tr>
<tr><td>Feb-17</td><td>4105</td><td>0</td><td>---</td></tr>
<tr><td>Mar-17</td><td>4078</td><td>4029</td><td>49</td></tr>
<tr><th colspan="4">GNDTP, Bathinda</th></tr>
<tr><td>Jan-17</td><td>4379</td><td>0</td><td>-------</td></tr>
<tr><td>Feb-17</td><td>4379</td><td>0</td><td>-------</td></tr>
<tr><td>Mar-17</td><td>4342</td><td>0</td><td>-------</td></tr>
</table>
PSPCL has already executed Tripartite</td><td>Fuel Audit of various Thermal Plants of PSPCL
The Commission notes that the difference of receipted and bunkered GCV of coal is excessively high w.r.t. the norms fixed by the Commission. The Commission reiterates its directions to adhere to the norms fixed by the Commission.
The Commission notes the action taken to sign tripartite agreement with CIMFR & CIL on 19.09.2016 for third party sampling and analysis at loading end, but the work has not yet started by CIMFR as per tripartite agreement. The Commission directs PSPCL to follow up vigorously with CIMFR for early</td></tr>
</table>

Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
		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.	agreements with CIMFR and CIL subsidiaries on 19.09.2016	implementation of tripartite agreement. As directed by the Commission during meeting on 14.10.2016 the monitoring of GCV at both ends be ensured and compliance be shared with the Commission.
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.	PSPCL presently scheduling about 4000 MW power under Long Term PPA's/ BPSA's signed with Central Sectors 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-economical 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, Dadri , Jhajar, 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 i.e. PSPCL & NTPC/NHPC.	**Review of PPAs with Generators / Traders for purchase of power from outside the State of Punjab.** 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	**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.	Accounts of PSPCL have been audited by statutory Auditors & CAG upto FY 2015-16 and audit certificate of CAG has been received. The management reply will be placed before BOD in its next meeting & thereafter accounts will be submitted to AGM for adoption by the members.	**Audited Annual Accounts** Audited Annual Report for FY 2015-16 has been supplied to Commission. PSPCL is directed to ensure timely submission of audited accounts.
7.16	**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	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	**Per Unit Fuel Cost** 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

Progress/ status report of compliance of directives ending March, 2017.				
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		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.	scheduling energy from them. The latest status regarding Pachhwara Central Coal Mine is briefed here under: It is submitted that Ministry of Coal, Govt. of India has allotted Pachhwara Central Coal Mine to PSPCL vide Allotment Order No. 103/11/2015/NA 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 Pachhwara 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. Against the TE floated by PSPCL for appointment of MDO, the Technical and Commercial bids were opened on 15.12.2015 for five bidders but the price bids of successful bidders could not be opened due to stay granted by Hon'ble Punjab & Haryana High Court against various CWPs filed by bidders.	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.	Analysis wing has been 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. 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. The Agenda to get the work done by engaging an external expert agency has been scrutinized by the higher officers to put before BOD for floating open tender enquiry to carry out work of load flow analysis, contingency analysis, short circuit analysis, dynamic analysis etc with software tool. In light of the discussions carried out by CE/Planning with higher officers on the draft agenda, certain observations regarding re-checking the adequacy of scope of work for aspects like facilities of Load Flow Analysis for Solar Power Projects were found. Afterwards, the matter was taken up with the consultant M/s. PRDC, Bangalore by conducting a meeting in the chamber of CE/Planning on 20th October, 2016. Now, the budgetary offer has been obtained from M/s PRDC regarding load flow studies, short circuit studies, GPS mapping & feasibility studies. On scrutiny of the offer, it has been decided to invite expression of interest from those engaged in similar business.	**System Analysis wings** The Commission notes that no tangible progress has been made except creation of System Analysis Wing on 02.01.2015 in compliance to the Order of the Commission in Petition No.54 of 2014. The Commission reiterates the directions to PSPCL to make the system analysis wing duly functional to generate Load Flow studies, Short Ckt analysis, stability studies etc to make proposal based on technical analysis. The timelines to make system analysis wing duly equipped and functional be shared with the Commission within one month of issue of T.O.
7.18	**Updating of consumer's Security Registers, payment of**	It is a matter of serious concern that interest on Security (Consumption) and Security (Meter) is not	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	**Updating of consumer's Security Registers, payment of interest on Security Consumption and Security Meter**

Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
	interest on Security Consump-tion and Security Meter	being paid to all consumers despite repeated directions from the Commission. PSPCL was directed to certify on affidavit that interest to all consumers along with penal interest up to 2014-15 has been paid because the General Public was feeling extremely harassed on this account. PSPCL has failed to collect information from all 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	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. 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. .	The Commission notes with serious concern that ACD record of about 5 lac consumers are yet to be updated by PSPCL. It is the duty of the distribution licensee to maintain the record and consumers cannot be deprived of their dues due to laxity on the part of PSPCL. PSPCL should find a way out and ensure that provisions of the Act and the Supply Code are implemented.
7.19	**Calculation of depreciation as per straight line method**	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	The provision regarding calculation of differential depreciation is in accordance with the Punjab State Electricity Regulatory Commission Regulation-2014 issued by PSERC 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. To implement this policy, life of the assets held by PSPCL is required, which is not available	**Calculation of depreciation as per straight line method** Necessary clarification regarding the useful life of the Assets has already been supplied to PSPCL vide Commission's letter dated 26.05.2017. The Commission directs PSPCL to take useful

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<tr><td></td><td></td><td>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.</td><td>in CERC/PSERC Regulations. Therefore, office of Secretary, PSERC has been requested vide CE/ARR&TR office memo no 2039/CC/DTR-104/Vol.43 dated 11.1.17 & 2119/CC/DTR-104/Vol.43 dated 27.03.2017 to intimate the life of the assets held by PSPCL. The reply of which is awaited please.</td><td>life of the Assets in accordance with the already given clarification.</td></tr>
<tr><td>7.20</td><td>Proper sealing/ locking of pillar boxes/ MCBs</td><td>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.</td><td>Copy of Instruction No.08/2016 and references have been supplied to the Commission.</td><td>Proper sealing/ locking of pillar boxes/ MCBs
Despite instructions issued by the PSPCL, the compliance by field officers needs to be ensured. It has generally been seen that there is no sealing of MCBs fixed on poles or outer wall of the premises.</td></tr>
<tr><td>7.21</td><td>Periodic Checking of meters</td><td>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.
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</td><td>The EHT meters checked and detail of checking of EHT meters by MMTS units of CE/Enf. during 4th quarter ending March, 2017 is as under :-
<table>
<tr><th>Sr. No.</th><th>Enf. Circle</th><th>No. of EHT Meters</th><th>No. of Conns. checked during 4th 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>
<tr><td>1</td><td>Amritsar</td><td>15</td><td>0</td><td>0</td><td>2</td><td>O K</td><td>NIL</td></tr>
<tr><td>2</td><td>Bathinda</td><td>17</td><td>8</td><td>8</td><td>---</td><td>O K</td><td>NIL</td></tr>
<tr><td>3</td><td>Jalandhar</td><td>18</td><td>13</td><td>9</td><td>5</td><td>O K</td><td>NIL</td></tr>
<tr><td>4</td><td>Ludhiana</td><td>68</td><td>68</td><td>67</td><td>-----</td><td>O K</td><td>NIL</td></tr>
<tr><td>5</td><td>Patiala</td><td>65</td><td>47</td><td>47</td><td>----</td><td>O K</td><td>NIL</td></tr>
<tr><td></td><td>Total</td><td>183</td><td>136</td><td>131</td><td>7</td><td></td><td></td></tr>
</table>
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 DMRI for scrutinizing any discrepancy. The accuracy of meter/ CTs/ PTs as the case be, is to be got checked from ME lab/ other Test Labs.</td><td>Periodic Checking of meters
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.</td></tr>
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Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
		equipments must be ensured.		
7.22	**Replacement of defective energy meters at Grid Sub-station**	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. The MMTS must carry out DDL of meters during checking and supply the same to the Commission with its report.	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 consumption 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.	**Replacement of defective energy meters at Grid Sub-station** The Commission notes the action being taken and reiterates that defective grid meters must be replaced within maximum of 10 days as directed repeatedly by the Commission and the real time data of defects should invariably be supplied to the Commission.
7.23	**Power Regulatory Measures**	The Commission notes the action being taken and directs PSPCL for meticulous implementation of the directions.	The directions issued by PSERC in this regard are already being implemented meticulously.	**Power Regulatory Measures** PSPCL is directed to plan its maintenance schedule well in advance and give at least one week notice of power shutdown to consumers.
7.24	**Assessm-ent of T&D losses on AP feeders**	The Commission notes that no efforts have been made by PSPCL to provide 100% metering on 5% pure AP feeders, spread all over the State and engaging an independent agency to record metered energy and pumped energy of these AP feeders to calculate T&D losses. The Commission observes that PSPCL is always reluctant to implement measures for true computation of AP consumption for obvious reasons. 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.	As decided by commission the work of installing 100% meters on AP consumers on 1 % AP feeders identified by Commission is in progress. Same will be completed soon.	**Assessment of T&D losses on AP feeders** While approving a list of 55 number (1%) AP feeders for energy audit, PSPCL was directed to ensure installation of 100% meters on these feeders by March 2017. No compliance has been reported by PSPCL. The Commission directs PSPCL to ensure completion of the work of providing 100% meters on at least 1% AP feeders and computation of T&D losses by engaging an independent agency within time period allotted by the Commission. In case of delay in completing the job in the allotted time, the Commission shall assess the losses of AP sector for calculating AP consumption as the basis of data/information available with the Commission.

Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
7.25	**Sale of Surplus Power**	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.	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. PSPCL has also constituted 2 no. empowered committees for evaluating technical, commercial and other aspects of cases/tenders related to sale of power. One committee is "Standing Committee" consisting of CEs and CAO. This committee examines the various technical, commercial parameters of tenders for sale of power and gives its recommendations to short term Power Purchase/Sale and Banking Committee (STPPC) consisting of 4 no. Directors of PSPCL and CE/PP&R. STPPC based upon the recommendation of Standing Committee takes the decision regarding price and quantum of power to be quoted against tender enquiries. 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 Hydrabad. PSPCL has also arranged a training program on sale of surplus power and marketing of surplus power on 15.11.2016, which was attended by 63 no. Senior and middle level executives of PSPCL conducted by one of the trading firms with whom PSPCL has entered into MOU for sale of surplus power (M/s. Tata Power Trading Company Limited) at Patiala. Ii) From the dates of creation of dedicated cell till March 17 PSPCL has considered 88 No. tenders for sale of power to other utilities/discoms till March 17. Out of 88, PSPCL has participated in 35 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 then discovered L-1 price. Iii) PSPCL has also signed MOUs wih power trading companies viz M/s. Tata Power Trading Company Limited (TPTCL) for short term, M/s. JSW Power Trading Company (JSWPTC) for short medium and long term, M/s. Power Trading Corporation (M/s. PTC) for short term sale of surplus power. Iv) PSPCL had recently floated a tender enquiry No. PPR 05/2016 for sale of surplus power from 01.10.2016 to 31.03.2017. The due date of opening was 31.08.2016 but no bid was received. The due date was extended to 19.09.2016 but again no one participated. The due date was once again extended to 18.10.2016 but again no one participated. The due date was further extended to 21.11.2016 again no bid was received and tender was dropped finally. V) Ministry of Power Govt. of India has launched	**Sale of Surplus Power** The Commission notes the status of compliance. PSPCL is directed to follow the matter more vigorously. PSPCL is directed to identify the sectors with potential for more consumption and encourage/facilitate such consumers to increase consumption to reduce fixed cost liability.

Progress/ status report of compliance of directives ending March, 2017.				
Sr. No.	**Issues**	**PSERC Comments & Directives for FY 2016-17**	**Progress of compliance of Directives ending March, 2017**	**PSERC Comments & Directives**
			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. vi) PSPCL has sold 210.01 MUS of Energy in India Energy Exchange (IEX) during the period Jan-March'17 by participating in Day-Ahead market and through short term tenders.	

New Directives in the Tariff Order for MYT Control Period

Sr. No	Issue	Directive
7.26	**On line registration of applications for release of load/demand**	The Commission notes that PSPCL has implemented the single window system & online registration of applications for release of demand for consumers with load/demand more than 100 kVA and has made provision for the same for all consumers in 47 R-APDRP towns. PSPCL is directed to extend this feature to all consumers of the State in a time bound manner. PSPCL should submit the roadmap within one month of the issue of this tariff order. PSPCL is further directed to upload on its website the circle wise status of pending applications for new/extension in load cases.
7.27	**De-commissioning of old inefficient plants.**	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.
7.28	**Preventive maintenance of transmission lines**	PSPCL is directed to adopt hot line washing system for insulators to prevent tripping o transmission lines during foggy months.
7.29	**Customer Satisfaction**	During the public hearings, a large number of consumers expressed their total dis-satisfaction with the quality of services being rendered by PSPCL. The general complaint of the consumers was with respect to delay in release of connections, wrong billing, excessive interruptions, delay in restoration of supply, delay in replacing the defective meters etc. Uninterrupted quality supply is the most important indicator of economic growth of the State. Immediate attention is required to address the key areas of consumer's dissatisfaction. The Commission has specified the minimum Standards of Performance (SoP), time frame for release of connections and for availing other services from the licensee in the Supply Code. However, the same are not being followed resulting in undue harassment to the consumers and also loss of revenue to the utility. The Commission directs PSPCL to initiate a study regarding customer satisfaction towards power supply service provided by PSPCL and identify areas of consumer's dissatisfaction. PSPCL should regularly submit quarterly circle wise compliance report regarding adherence to Standards of Performance (SoP) and other timelines on the format, which will be issued separately. The non-compliance of the Standards of Performance and other timelines shall invite punitive action as per provisions of the Act.
7.30	**Achievement of 100% Metering:**	Section 55 of the Electricity Act, 2003, mandates that no licensee shall supply electricity except through the installation of a correct meter. In Punjab, all consumers, except AP are metered. The Commission has been issuing directions to PSPCL to ensure 100% metering in a phased manner but no action has been taken by the licensee to fulfill the mandate of the Act. The State Government has been paying meter rental of AP consumers as part of the subsidy claimed by PSPCL in the ARR. Thus, there is no financial burden on the distribution licensee for implementing the directions of the Commission. PSPCL is directed to complete 100% metering of all the consumers including the AP consumers, in a phased manner within a maximum period of five years staring from April 2018. PSPCL shall install meters on all AP consumers fed from at least 20% of the AP feeders spread across the State in each year so as to complete the job in 5 years i.e by March 2023. In view of Punjab Government policy guidelines dated 04.09.2017, all new AP connections are to be metered. It flows from this that all extensions of load should also be metered. Failure to achieve the yearly target of AP metering, as directed above, shall invite a minimum progressive cut of 1% on AP consumption

<table>
<tr><th>Sr. No</th><th>Issue</th><th>Directive</th></tr>
<tr><td></td><td></td><td>over and above any other disallowance which the Commission may impose while calculating the AP consumption.</td></tr>
<tr><td>7.31</td><td>Calculation of AT&C losses</td><td>The Ministry of Power (MoP), GoI, has specified targets for reduction of AT & C losses under UDAY Scheme as under;
<table>
<tr><td>Year</td><td>FY 2015-16</td><td>FY 2016-17</td><td>FY 2017-18</td><td>FY 2018-19</td></tr>
<tr><td>AT&C loss</td><td>16.16%</td><td>15.30%</td><td>14.50%</td><td>14.00%</td></tr>
</table>

PSPCL and the Punjab Government are signatories to MoU under UDAY scheme and are responsible to achieve the targets of AT&C losses fixed therein.
The AT&C loss data for 47 towns covered under R-APDRP for FY 2016-17 has been examined and it is observed that the AT&C losses for 29 towns are more than 25%. The highest AT&C loss is that of Malout town at 60.11%. The collection efficiency of two towns i.e Malout and Faridkot is even below 60%. In view of the increase in the amount of receivables from consumers and the State Govt./ State Govt. Departments, the claim of PSPCL of having a collection efficiency of more than 99% appears to be exaggerated. PSPCL is directed to regularly supply the circle-wise monthly data of AT&C losses to the Commission. The AT&C loss trajectory will be considered in the performance review. Failure to achieve AT&C loss target will be penalized.</td></tr>
<tr><td>7.32</td><td>Segregation of Financial Statements of Distribution and Generation Business:</td><td>The Commission directs PSPCL to segregate the Financial Statements and Cost Accounts for Distribution and Generation (project wise) business for determination of tariff as per Regulation 5.1 of MYT Tariff Regulations. The Commission has taken the cost of each element as per the Allocation Statement provided by PSPCL for Distribution and Generation. The Allocation Statement shall not be accepted during true up of FY 2017-18 onwards without audited Financial Statements of project-wise Generating Projects and Distribution Business in accordance with Regulation 5.3 of PSERC MYT Regulations.</td></tr>
<tr><td>7.33</td><td>Review of Performance Parameters:</td><td>The Commission shall be reviewing the status of implementation of Directives along with following performance parameters on quarterly basis with the management of PSPCL:
i) Operating performance of each Generation Project
ii) Generation cost of each Thermal plant
iii) Category wise energy sale, revenue assessed and collected.
iv) Defaulting Amount
v) T&D/AT&C losses
vi) Detection of theft cases and recovery of charges by PSPCL.
vii) Key Exception Reports.
viii) Reliability Indices
ix) Resolution of consumers’ grievances by Dispute Settlement Committees
x) Resolution of consumers’ complaints received at 1912 and other billing complaints received directly in the office.
xi) Release of connections and age analysis of pending test reports.
xii) Revenue Account (format MR-36).
The formats of the above mentioned performance parameters shall be prescribed separately</td></tr>
<tr><td>7.34</td><td>Balancing of load/ Earthing of Distribution Transformers</td><td>In compliance to earlier directions of the Commission to PSPCL for carrying out the exercise of balancing of loads and earthing on its distribution transformers, the utility reported its compliance in ARR for FY 2015-16.
The Commission reiterates its direction to PSPCL to recheck load balancing of its distribution transformers & earthing of distribution transformers as per the standards laid down in IEEE Guide 80 and take remedial measures, wherever required.</td></tr>
<tr><td>7.35</td><td>Plan to meet future load growth</td><td>As per the Demand-Supply scenario submitted by PSPCL in petition no. 41 of 2016 (Suo-moto) to the Commission, PSPCL is surplus in terms of Peak Demand (MW) up to FY 2019-20 & in terms of Energy (MU) up to FY 2020-21. It is expected to become deficit in Peak Demand from FY 2020-21 onwards & in energy from FY 2021-22 onwards. PSPCL is directed to submit its action plan for the next 15-20 years.</td></tr>
<tr><td>7.36</td><td>Voluntarily Disclosure Scheme (VDS) for DS, NRS and SP Category of Consumers</td><td>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.</td></tr>
</table>

Sr. No.	Issue	Directive
7.37	**Introduction of kVAh Tariff and Contract Demand system for SP Category and other (remaining) consumers having load in excess of 20 kW**	The Commission intends to introduce kVAh Tariff and Contract Demand system for SP Category and other (remaining) consumers having load in excess of 20 kW. It requires readiness on the part of PSPCL such as, installation of compatible meters on such consumers etc. PSPCL is directed to submit the roadmap for introduction of contract demand system for the SP Industrial category and other (remaining) consumers having load in excess of 20 kW, within 3 months from the issue of Tariff Order.

Chapter 8
Determination of Tariff

8.1 Annual Revenue Requirement

The Commission has determined the ARR of PSPCL for FY 2017-18, FY 2018-19 and FY 2019-20 at ₹29768.87 crore, ₹31104.64 crore and ₹32607.99 crore respectively. In the ARR petition, PSPCL has submitted Annual Audit Accounts for FY 2014-15. Subsequently, PSPCL filed the Petition No. 33 of 2017 for truing up of FY 2015-16 along with the Annual Accounts for FY 2015-16. The Commission decided to carry out the True up of FY 2014-15 and also decided to include the decision in respect of Petition No. 33 of 2017 in the Tariff Order. The review for FY 2016-17 indicates deficit of ₹531.80 crore up to FY 2016-17, including surplus of ₹748.62 crore up to FY 2014-15, deficit of ₹431.25 crore for FY 2015-16 and deficit of ₹849.17 crore for FY 2016-17. The Commission has determined the revenue gap (deficit) of ₹1883.61 crore for FY 2017-18 and consolidated gap (deficit) of ₹2522.62 crore up to FY 2017-18, including deficit of ₹531.80 crore up to FY 2016-17 carrying costs of (-)₹107.21 crore on revenue gaps for FY 2014-15 and FY 2015-16.

8.2 Determination of Tariff

8.2.1 In determining tariff, the Commission is guided by the principles laid down in Section 61 of the Act as well as its own Regulations, which provide the framework for working out the ARR of a power utility and tariff for different categories of consumers. The Commission has also kept in view the relevant aspects of the National Electricity Policy, Tariff Policy, the norms adopted by it in earlier Tariff Orders and inputs received from consumers/ consumer organizations/ stakeholders in their objections/ suggestions and during the process of public hearings.

Income from tariff at existing rates taken into account for working out the percentage increase in tariff required to cover the gap (deficit), does not include income from sales to Common Pool consumers and Outside State sale.

8.2.2 To cover the revenue gap of ₹2522.62 crore for FY 2017-18, an increase of 9.33% is required over the existing tariff, including MMC (in case single part tariff is to be continued) but excluding sales to Common Pool consumers and Outside State sales.

8.2.3 The Commission decides to increase the tariff by 9.33% over the existing tariff. However, in view of regulatory and socio-economic requirements, the %age of increase in tariff for different categories of consumers varies. The combined average cost of supply works out to be 642.45 paise per kWh in FY 2017-18. The Commission also decides to add new sub-categories under Domestic Supply, Non-Residential Supply and Large Supply categories. The Commission decides to revise tariff (in kWh) of various categories of consumers as given in Table 8.1. As discussed in Para 6.3 of this Tariff Order, the Commission also decided to adopt Two Part Tariff instead of Single Part Tariff, which is further discussed in para 8.3.

Table 8.1: Existing and Revised Tariff (in kWh) for FY 2017-18

Sr. No.	Category of Consumers	Existing Tariff		Revised Tariff	
		Energy Rate (paise/kWh)	MMC (₹)	Energy Rate (paise/kWh)	MMC (₹)
1	**Domestic**				
a)	Upto 100 units	452	52/kW	498	57/kW
b)	Above 100 units and upto 300 units	614		655	
c)	Above 300 units and upto 500 units	656		715	
d)	Above 500 units			736	
2	**Non-Residential Supply**				
a)	Upto 100 units	653	190/kW	710	208/kW
b)	Above 100 units and upto 500 units	675		735	
c)	Above 500 units			747	
3.	**Public Lighting**	669	As per 8 hrs/Day	739	As per 8 hrs/Day
4.	**Industrial Consumers**				
a)	Small Power	547	157/kW	612	172/kW
b)	Medium Supply	599	188/kVA	657	206/kVA
c)	Large Supply	635	188/kVA	689	206/kVA
5.	**Bulk Supply (including MES)**				
a)	HT	641	307/kVA	712	336/kVA
b)	LT	668		739	
6.	**Railway Traction**	675	314/kVA	746	336/kVA
7.	**Agricultural Pumpsets (AP)**	458	Not Applicable	506	Not Applicable

8.3 Revised Tariff / Two Part Tariff

8.3.1 The Commission in the Para 6.3 of this Tariff Order has decided to implement the Two Part Tariff structure. The Two Part Tariff rates for different category of consumers, based on the revised Tariff (kWh), as shown in Table 8.1, has been reflected in Table 8.2. The Commission has decided to make the revised rates applicable from 1^{st} April, 2017 and up to 31^{st} March, 2018. PSPCL shall recover the arrears of the revised tariff from the consumers in equal instalments from October, 2017 to June, 2018. The applicable revised tariff (Two Part) for FY 2017-18 is indicated in Table 8.2.

Table 8.2: Revised Tariff (Two Part) for FY 2017-18

Sr. No.	Category			Fixed Charges (₹)	Energy Charges (₹)
A	**PERMANENT SUPPLY**				
1	**Domestic Supply**	Up to 2 kW	Up to 100 kWh	**20/kW**	**4.81/kWh**
			Above 100 kWh & upto 300 kWh		**6.38/kWh**
			Above 300 kWh & upto 500 kWh		**6.98/kWh**
			Above 500 kWh		**7.19/kWh**
		Above 2 kW & upto 7 kW	Up to 100 kWh	**25/kW**	**4.81/kWh**
			Above 100 kWh & upto 300 kWh		**6.38/kWh**
			Above 300 kWh & upto 500 kWh		**6.98/kWh**
			Above 500 kWh		**7.19/kWh**
		Above 7 kW & upto 50 kW	Up to 100 kWh	**30/kW**	**4.81/kWh**
			Above 100 kWh & upto 300 kWh		**6.38/kWh**
			Above 300 kWh & upto 500 kWh		**6.98/kWh**
			Above 500 kWh		**7.19/kWh**
		Above 50 kW & upto 100 kVA	All Units	**60/kVA**	**6.11/kVAh**
		Above 100 kVA	All Units	**60/kVA**	**6.31/kVAh**
2	**Non-Residential Supply**	Up to 7 kW	Up to 100 kWh	**50/kW**	**6.84/kWh**
			Above 100 kWh & upto 500 kWh		**7.09/kWh**
			Above 500 kWh		**7.21/kWh**
		Above 7 kW & upto 50 kW	Up to 100 kWh	**70/kW**	**6.84/kWh**
			Above 100 kWh & upto 500 kWh		**7.09/kWh**
			Above 500 kWh		**7.21/kWh**
		Above 50 kW & upto 100 kVA	All Units	**100/kVA**	**6.15/kVAh**
		Above 100 kVA	All Units	**100/kVA**	**6.35kVAh**
3	**Small Power**	Up to 20 kW	All Units	**85/kW**	**5.48/kWh**
4	**Medium Supply**	Above 20 kW & upto 100 kVA	All Units	**100/kVA**	**5.60/kVAh**
5	**Large Supply**				
a)	**General Industry**	Above 100 kVA & upto 1000 kVA	All Units	**140/kVA**	**5.70/kVAh**
		Above 1000 KVA & upto 2500 kVA	All Units	**195/kVA**	**5.74/kVAh**
		Above 2500 KVA	All Units	**230/kVA**	**5.78/kVAh**
b)	**PIU / ARC Furnace**	Above 100 kVA & upto 1000 kVA	All Units	**160/kVA**	**5.74/kVAh**
		Above 1000 KVA	All Units	**295/kVA**	**5.98/kVAh**
6	**Bulk Supply**	LT	All Units	**155/kVA**	**6.25/kVAh**
		HT	All Units	**195/kVA**	**5.85/kVAh**

<table>
<tr><th>Sr. No.</th><th colspan="3">Category</th><th>Fixed Charges (₹)</th><th>Energy Charges (₹)</th></tr>
<tr><td>7</td><td colspan="2">Railway Traction</td><td>All Units</td><td>200/kVA</td><td>6.66/kVAh</td></tr>
<tr><td>8</td><td colspan="2">Public Lighting</td><td>All Units</td><td>80/kW</td><td>7.21/kWh</td></tr>
<tr><td rowspan="2">9</td><td colspan="2" rowspan="2">Agricultural Pumpset (AP)</td><td rowspan="2">All Units</td><td rowspan="2">NA</td><td>5.06/kWh (without GoP subsidy) or ₹403/BHP/month</td></tr>
<tr><td>Nil (with GoP subsidy)</td></tr>
<tr><td>10</td><td colspan="2">AP High Technology/ High Density Farming</td><td>All Units</td><td>NA</td><td>5.06/kWh</td></tr>
<tr><td>11</td><td colspan="2">Compost Plants/ Solid Waste Management Plants for Municipalities/ Urban Local Bodies</td><td>All Units</td><td>18/kVA</td><td>5.06/kWh</td></tr>
<tr><td rowspan="2">12</td><td rowspan="2">Charitable Hospitals set-up under Persons with Disability Act, 1955</td><td>Up to 100 kW</td><td>All Units</td><td>20/kW</td><td>4.81/kWh</td></tr>
<tr><td>Above 100 KW/kVA</td><td>All Units</td><td>18/kVA</td><td>4.43/kVAh</td></tr>
<tr><td>13</td><td colspan="2">Start-up Power for Generators/ CPPs</td><td>All Units</td><td>NA</td><td>6.55/kVAh</td></tr>
<tr><td>B</td><td colspan="5">SEASONAL INDUSTRY: COTTON GINNING, PRESSING AND BAILING PLANTS, RICE SHELLERS, KINN0W GRADING AND WAXING CENTRES, RICE BRAN STABILISATION UNITS (WITHOUT T.G. SETS) (SP, MS, LS)</td></tr>
<tr><td>a)</td><td colspan="5">During Season</td></tr>
<tr><td>(i)</td><td colspan="2">Small Power</td><td>All Units</td><td>170/kW (for six months)</td><td rowspan="7">Same as applicable to corresponding General Industry</td></tr>
<tr><td>(ii)</td><td colspan="2">Medium Supply</td><td>All Units</td><td>200/kVA (for six months)</td></tr>
<tr><td>(iii)</td><td colspan="2">Large Supply</td><td>All Units</td><td>280/kVA (for six months)</td></tr>
<tr><td>a)</td><td colspan="4">During Off Season</td></tr>
<tr><td>(i)</td><td colspan="2">Small Power</td><td>All Units</td><td rowspan="3">Nil</td></tr>
<tr><td>(ii)</td><td colspan="2">Medium Supply</td><td>All Units</td></tr>
<tr><td>(iii)</td><td colspan="2">Large Supply</td><td>All Units</td></tr>
<tr><td>C</td><td colspan="5">ICE FACTORIES & CANDIES AND COLD STORAGES</td></tr>
<tr><td>a)</td><td colspan="5">During April to July</td></tr>
<tr><td>(i)</td><td colspan="2">Small Power</td><td>All Units</td><td>170/kW</td><td rowspan="7">Same as applicable to corresponding General Industry</td></tr>
<tr><td>(ii)</td><td colspan="2">Medium Supply</td><td>All Units</td><td>200/kVA</td></tr>
<tr><td>(iii)</td><td colspan="2">Large Supply</td><td>All Units</td><td>280/kVA</td></tr>
<tr><td>b)</td><td colspan="4">During August to March</td></tr>
<tr><td>(i)</td><td colspan="2">Small Power</td><td>All Units</td><td>43/kW</td></tr>
<tr><td>(ii)</td><td colspan="2">Medium Supply</td><td>All Units</td><td>50/kVA</td></tr>
<tr><td>(iii)</td><td colspan="2">Large Supply</td><td>All Units</td><td>70/kVA</td></tr>
<tr><td rowspan="2">D</td><td colspan="2" rowspan="2">GOLDEN TEMPLE AMRITSAR AND DURGIANA TEMPLE AMRITSAR</td><td>First 2000 Units</td><td>NA</td><td>Free</td></tr>
<tr><td>Above 2000 Units</td><td>NA</td><td>5.82/kWh</td></tr>
<tr><td>E</td><td colspan="5">TEMPORARY SUPPLY</td></tr>
<tr><td>(i)</td><td colspan="2">Domestic & NRS</td><td>All Units</td><td colspan="2" rowspan="5">1.5 times the charges (highest slab in case of slab rates) specified under the relevant schedule for permanent supply corresponding to the connected load /demand</td></tr>
<tr><td>(ii)</td><td colspan="2">Industrial (SP/MS/LS)</td><td>All Units</td></tr>
<tr><td>(iii)</td><td colspan="2">Wheat Threshers (SP/MS/LS)</td><td>All Units</td></tr>
<tr><td>(iv)</td><td colspan="2">Fairs, Exhibitions, Melas and congregations (BS)</td><td>All Units</td></tr>
<tr><td>(v)</td><td colspan="2">Touring Cinemas, theatres, circuses etc
i) Lights & Fans (NRS)
ii) Motive Load(SP/MS/LS)</td><td>All Units</td></tr>
</table>

Notes:

(i) The Schedules of Tariff with revised rates of tariff for various categories of consumers as approved by the Commission are as per Annexure II, Volume-II of this Tariff Order. These Schedules shall be read with the updated provisions of General Conditions of Tariff approved by the Commission as per Annexure I, Volume-II of this Tariff Order;

(ii) Free power/subsidized tariff shall be applicable to various categories of consumers as per GoP letter no.11/24/2013-PE2(PF-1)/3382 dated 17.10.2017 read with letter no.2/5/2015-PE2/6161 dated 17.10.2017 (Appendix-IV).

(iii) Cooperative Group Housing Societies/ Employers availing single point supply under PSERC (Single Point Supply to Co-operative Group Housing Societies/Employers) Regulations will be levied fixed charges as applicable to Domestic Supply consumers with load exceeding 100 kVA i.e. @₹60 per kVA.

(iv) Consumers getting single point supply for providing electricity to ultimate users shall continue to be eligible for rebate @12% on electricity charges, comprising of fixed and energy charges, in case of the Residential Colonies/Co-operative Group Housing Societies/Employers Colonies and @10% on electricity charges, comprising of fixed and energy charges, in case of Commercial Complexes/ Shopping Malls/Industrial Estates etc., in addition to other voltage rebates as may be applicable;

(v) The additional charge/levy @10 paise/kVAh on pro-rata basis, on continuous process industries, shall be leviable as here-to-fore, only for the period from 1st April, 2017 to 31st October, 2017. The additional charge for continuous process industry shall be discontinued w.e.f. 1st November, 2017 onwards.

(vi) Rebate of 30 paise/kVAh to all consumers getting supply at 400/220/132 kV, 25 paise/kVAh to all consumers getting supply at 66/33 kV, 20 paise/kVAh to DS, NRS & MS consumers getting supply at 11 kV and 20 paise/kWh to AP/AP High-Technology/High Density Farming Compost Plants/Solid Waste Management Plants for Municipalities/ Urban Local Bodies consumers getting supply at 11 kV shall be continued.

(vii) NRS consumers running Marriage Palaces shall pay Fixed Charges on 10% of Load/Contract Demand or Actual Load/Demand recorded during the billing cycle/month, whichever is higher (restricted to sanctioned Load/Contract Demand). In case, the consumer exceeds its sanctioned Load/Contract Demand during a billing cycle/month, he shall be liable to pay Load/Demand Surcharge as provided in relevant Schedule of Tariff.

(viii) The amended procedure for billing of seasonal industry as per General Conditions of Tariff (Annexure I, Volume-II of this Tariff Order) shall be applicable for the season commencing w.e.f. 1st September/October, 2017, as the case may be.

(ix) In case of Temporary Supply, the revised rates are applicable from 1st November, 2017 onwards.

8.4 Effect of revised tariff on cross subsidy

8.4.1 The Commission in its MYT Regulations, 2014, Tariff Regulations has defined cross subsidy for a consumer category as the difference between the average realization per unit from that category and the combined average cost of supply per unit, expressed in percentage terms as a proportion of the combined average cost of supply. The cross-subsidy levels for different categories of consumers as worked out for energy sales for FY 2017-18 at revised tariff are depicted in Table 8.3.

8.4.2 Category-wise income has been taken as per revised rates as discussed in para 8.2.3. High Voltage Rebate and impact of ToD tariff have been taken as projected by PSPCL in the ARR. Non-tariff income has been apportioned in the ratio of energy sale to different categories, except Outside State sale.

Table 8.3: Cross Subsidy Levels for Energy Sales of FY 2017-18 at Revised Tariff (Combined average cost of supply = 642.45 paise/kWh)

Sr. No.	Consumer Category	Total Energy Sales (MU)	Revised Tariff (paise/ unit)	Revenue with Tariff (₹crore)	Impact of ToD Tariff etc. (₹crore)	Non-Tariff Income (₹crore)	Impact of High Voltage Rebate (₹ crore)	Total Revenue (₹ crore) (V+VI+VII-VIII)	Realisa-tion (Paise per unit)	Cross Subsidy Levels (%)
I	II	III	IV	V	VI	VII	VIII	IX	X	XI
1.	**Domestic**									
a)	Upto 100 Units	6277.24	498	3126.07	77.72	113.99		3317.78	528.54	-17.73%
b)	Above 100 & upto 300 Units	4512.89	655	2955.94	55.88	81.95		3093.77	685.54	6.71%
c)	Above 300 & upto 500 Units	2158.15	715	1543.08	26.72	39.19		1608.99	745.54	16.05%
d)	Above 500 Units	1439.38	736	1059.38	17.82	26.14	1.68	1101.66	765.37	19.13%
	Total	**14387.66**		**8684.47**	**178.14**	**261.27**	**1.68**	**9122.20**		
2.	**NRS**									
a)	Upto 100 Units	795.12	710	564.54	9.85	14.44		588.83	740.55	15.27%
b)	Above 100 & upto 500 Units	1885.91	735	1386.14	23.35	34.25		1443.74	765.54	19.16%
c)	Above 500 Units	1509.89	747	1127.89	18.70	27.42	11.00	1163.01	770.26	19.89%
	Total	**4190.92**		**3078.57**	**51.90**	**76.11**	**11.00**	**3195.58**		
3.	**Public Lighting**	255.47	739	188.79	3.16	4.64		196.59	769.52	19.78%
4.	**Industrial**									
a)	Small Power	1005.93	612	615.63	12.46	18.27		646.36	642.55	0.02%
b)	Medium Supply	2310.47	657	1517.98	28.61	41.95		1588.54	687.54	7.02%
c)	Large Supply	12072.94	689	8318.26	320.77	219.23	248.05	8610.21	713.18	11.01%
	Total	**15389.34**		**10451.87**	**361.84**	**279.45**	**248.05**	**10845.11**		
5.	**Bulk Supply**									
a)	HT	705.52	712	502.33	8.74	12.81	6.77	517.11	732.95	14.09%
b)	LT	39.47	739	29.17	0.49	0.72		30.38	769.70	19.81%
	Total	**744.99**		**531.50**	**9.23**	**13.53**	**6.77**	**547.49**		
6.	**Railway Traction**	187.22	746	139.67	2.32	3.40	7.63	137.76	735.82	14.53%
7.	**Common Pool**	311.68		145.40		5.66		151.06		
8.	**Outside State**	52.66		21.19		0.00		21.19		
9.	**AP**	11811.90	506	5976.82		214.49		6191.31	524.16	-18.41%
10.	**Total**	**47331.84**		**29218.28**	**606.59**	**858.55**	**275.13**	**30408.29**	**642.45**	

8.4.3 The cross-subsidy levels based on the energy sales determined for FY 2017-18 at revised tariffs, in percentage terms, are brought out in Column XI of Table 8.3 and are within ± 20% as mandated in Tariff Policy.

8.4.4 The Hon'ble APTEL in its judgement dated 17.12.2014 in Appeal No. 142 of 2013 and 168 of 2013 has directed the Commission to show the cross-subsidy for each category of consumer with respect to voltage wise cost of supply in the next tariff order. In compliance to the judgement of the Hon'ble APTEL, the cross-subsidy level for each category of consumer with respect to voltage wise cost of supply is shown in **Appendix-II** of this Tariff Order.

8.5 GoP Subsidies as estimated by PSERC

After determining the Tariff for FY 2017-18, the Commission vide its D.O. No. PSERC/Secy./1033-34 dated 20.09.2017 (Appendix-III) solicited the views of GoP regarding its intention to extend subsidy to any consumer or class of consumers under Section 65 of the Act.

8.5.1 The letter indicated the implications if GoP continued its present policy of subsidizing AP consumers, SC/Non-SC BPL/BC DS consumers, Freedom Fighter Consumers and Industries under Progressive Punjab summit as under:

	AP	**SC DS**	**Non-SC BPL DS**	**Backward DS**	**Freedom Fighter**	**Industry (MS+LS) Progressive Punjab**	**Total**
Subsidy payable for FY 2017-18 for AP, SC DS, Non-SC BPL DS consumers and Industry (MS+LS)	**5976.82**	**1121.80**	**87.24**	**707.98**	**0.83**	**113.31**	**8007.98**

8.5.2 **Balance Subsidy of previous years:**

(i) **Amount of Subsidy upto FY 2013-14:**

As per para 9.4.2 of Tariff Order of FY 2014-15, there was a surplus of subsidy of ₹655.55 crore upto FY 2011-12. There was a shortfall of subsidy of ₹11.25 crore for FY 2012-13 and ₹73.39 crore for FY 2013-14 as per para 9.4.2 (ii) of Tariff Order of FY 2016-17.

As such, total surplus upto FY 2013-14 works out to ₹570.91 (655.55-11.25-73.39) crore.

(ii) **Amount of Subsidy for FY 2014-15 and FY 2015-16:**

Besides, as discussed in Chapter 2 and Chapter 3 of this Tariff Order, there is a shortfall of subsidy ₹830.97 crore for FY 2014-15 and ₹1343.11 crore for FY 2015-16 payable by GoP. As such, the total shortfall for these two years works out to ₹2174.08 (830.97+1343.11) crore.

(iii) **Amount of Subsidy for FY 2016-17:**

As discussed in Chapter 4 of this Tariff Order there is a shortfall of subsidy of ₹1306.25 crore for FY 2016-17 (Review).

Therefore, the total amount of balance subsidy of previous years works out to ₹2909.42 (830.97+1343.11+1306.25-570.91) crore.

8.5.3 On the above basis, total estimated subsidy payable by GoP during FY 2017-18 is detailed in Table 8.4.

Table: 8.4 Subsidy payable by GoP to PSPCL for FY 2017-18

₹crore)

	AP	SC DS	Non-SC BPL DS	Backward DS	Freedom Fighter	Industry (MS+LS) Progressive Punjab	Total
Subsidy payable for FY 2017-18 for AP, SC DS, Non-SC BPL DS consumers and Industry (MS+LS)	**5976.82**	**1121.80**	**87.24**	**707.98**	**0.83**	**113.31**	**8007.98**
Balance subsidy payable for previous years							2909.42
Total subsidy payable by GoP during FY 2017-18							**10917.40**

Change in subsidy for the respective year, if any, will be determined at the time of true-up of that year, when Audited Annual Accounts for the year is submitted by PSPCL.

8.6 Decision of Govt. of Punjab on subsidies payable

8.6.1 GoP vide its letter no.11/24/2013-PE2(PF-1)/3382 dated 17.10.2017 **(Appendix- IV)** has conveyed its decision regarding the payment of subsidy as under:

i) To continue to provide free power to the agriculture sector and therefore agrees to support PSPCL to the extent of ₹5976.82 Crore as subsidy on account of agricultural supply.

ii) To pay subsidy on account of free supply up to 200 units per month to SC DS, Non-SC BPL DS and BC DS consumers with a connected load up to 1 kW subject to the condition that subsidy on account of free supply of 200 units per month with a connected load up to 1 kW shall be provided only to BPL SC DS, BPL Non-SC DS and BPL Backward classes consumers only provided that their total consumption in the preceding years has not been more than 3000 units per annum, meaning thereby that, household shall be entitled to the subsidy in the current year only if its total consumption in the preceding year has been less than 3000 units per annum. This will be effective from November 1st, 2017.

iii) To pay subsidy for consumers under Freedom Fighters category of 300 Units per month with sanctioned load of 1 kW.

iv) Further, the state shall continue to provide power at the rate of ₹4.99 per unit to all new/prospective industries that have applied to Invest Punjab after 31st October, 2015 and to that extent the state shall provide ₹16.22 crore for Medium Supply and ₹97.09 crore for Large Supply industries.

v) Further, the Council of Ministers in its meeting held on 16.10.2017 has approved to provide power at a variable tariff of ₹5.00 per kVAh for five years with no increase in the existing fixed electricity tariff. The variable electricity tariff shall be applicable to all manufacturing and IT & ITES industries. The State shall provide the necessary budgetary support to PSPCL for providing power at this subsidized rate to the industry.

8.6.2 In continuation to above GoP vide its letter no. 2/5/2015-PE2/6161 dated 17.10.2017 **(Appendix-IV)** has conveyed as under:

i) In this regard, it is intimated that in the above letter inter-alia it is written "To pay subsidy on account of free supply up to 200 units per month to SC DS, Non-SC BPL DS and BC DS Consumers with a connected load up to 1 kW subject to the condition that subsidy on account of free supply of 200 units per month with a connected load up to 1 kW shall be provided only to BPL SC DS, BPL Non-SC DS and BPL Backward classes consumers only provided that their total consumption in the preceding years has not been more than 3000 units per annum, meaning thereby that, household shall be entitled to the subsidy in the current year only if its total consumption in the preceding year has been less than 3000 units per annum. This will be effective from November 1st , 2017" that may be read as "To pay subsidy on account of free supply up to 200 units per month to SC DS, Non-SC BPL DS and BC DS consumers with a connected load up to 1 kW subject to the condition that subsidy on account of free supply of 200 units per month with a connected load up to 1 kW shall be provided only to SC DS, BC DS and Non-SC BPL DS consumers only provided that their total consumption in the preceding years has not been more than 3000 units per annum, meaning thereby that, household shall be entitled to the subsidy in the current year only if its total consumption in the preceding year has been less than 3000 units per annum. This will be effective from November 1st, 2017."

ii) It is further intimated that SP consumers may be charged at a variable tariff of ₹5.00 per kWh for five years with no increase in the existing fixed electricity tariff.

For other MS and LS consumers, it may be read as ₹5.00 per kVAh as per our earlier letter dated 17.10.2017.

iii) It is further intimated that SP consumers may be charged as per the existing tariff of ₹4.99 per kWh for the year 2017-18. Subsidy in lieu of this shall be paid by the State Government.

8.6.3 PSPCL is directed to work out the estimated subsidy amount on account of difference in tariff rates of above categories of consumers as committed by the GoP for the FY 2017-18 and work out the monthly subsidy which the State Govt. shall reimburse to PSPCL in advance monthly installments. This may be communicated to the Govt. and the Commission within 15 days.

8.7 Renewable Energy

8.7.1 Background

The Act, under Section 86 (1)(e), mandates the Commission to promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specifies, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee. The National Electricity Policy and Tariff Policy formulated under the Act further provide that the share of electricity from non-conventional sources as specified by State Electricity Regulatory Commissions (SERCs) need to be progressively increased and such procurement by distribution licensees for future requirements shall be done, as far as possible, through competitive bidding process under section 63 of the Act.

In order to develop and promote new and renewable sources of energy (NRSE) based technologies, GoP notifies the NRSE Policy from time to time. Presently, NRSE Policy, 2012 is in vogue.

8.7.2 Tariff for Purchase of Electricity from Renewable Sources of Energy

The Commission determines the generic tariff for renewable energy projects every year as per Regulations specifying the terms and conditions for tariff determination from renewable energy sources. Accordingly, the generic tariff for FY 2017-18, FY 2018-19 and FY 2019-20 shall be determined after following the due process. The Commission also determines project specific tariff for renewable energy projects as per provisions in the said Regulations. The tariff payable to the renewable energy projects is further governed as per the terms and conditions of their respective Power

Purchase Agreements (PPAs).

8.7.3 **Renewable Purchase Obligation (RPO)**

The Commission notified the Punjab State Electricity Regulatory Commission (Renewable Purchase Obligation and its compliance) Regulations, 2011 (RPO Regulations) on 03.06.2011, wherein Renewable Purchase Obligation (RPO) for the years 2011-12 to 2014-15, both Non-Solar & Solar, was specified for compliance by the Obligated Entities. Subsequently, the Commission amended the aforesaid RPO Regulations vide Notification No. PSERC/Secy./Reg.100 dated 06.05.2015, wherein RPO for the years 2015-16 to 2019-20 was incorporated for compliance by the Obligated Entities. The Tariff Policy provides that RPO shall be specified by the appropriate Commission taking into account availability of renewable energy resources in the State and its impact on retail tariffs. The RPO was specified by the Commission after consultative discussion with PEDA and PSPCL. As per the Regulations, the RPO can be complied with by the Obligated Entities by purchasing electricity from renewable sources of energy or alternatively Renewable Energy Certificates (RECs) from the Power Exchange(s) or a combination of both. However, in case an Obligated Entity fails to comply with the obligation to purchase the required percentage of electricity from renewable sources of energy or RECs, it is liable for penalty including proceedings under section 142 of the Act.

8.7.4 **Renewable Energy Capacity for FY 2017-18, FY 2018-19 and FY 2019-20**

PEDA, vide letter no.2216 dated 05.04.2017 furnished the details of renewable energy power projects commissioned in FY 2016-17. Accordingly, the capacity available to PSPCL for compliance of RPO up to 31.03.2017, spill-over capacity for the projects not commissioned up to 31.03.2017 and projections for capacity addition during FY 2017-18, FY 2018-19 and FY 2019-20 as per details made available by PEDA, from time to time, are given in Table 8.5.

Table 8.5: Renewable Energy Capacity up to 31.03.2017 and Projections

	Biomass (MW)	**Non-fossil fuel Cogeneration (MW)**	**Small Hydro (MW)**	**Solar (MW)**	**Biogas + Waste to Energy (MW)**	**Total (MW)**
I	**II**	**III**	**IV**	**V**	**VI**	**VII**
Upto 31.03.2017	72.50	155.00	142.20	843.27	1.50 (0.50 + 1.00)	1214.47
Spill-over capacity upto 31.03.2017	14.00	13.70	24.15	211.00	0.50 (0.50 + 0.00)	263.35
Projections for FY 2017-18	30.00	20.00	6.00	1000.00	0.00	1056.00
Projections for FY 2018-19	30.00	30.00	2.50	1000.00	5.00	1067.50
Projections for FY 2019-20	30.00	30.00	10.00	850.00	5.00	925.00

Projections as per PEDA's letter no.104 dated 09.04.2015.

PEDA has to ensure that the projected capacity is added in the respective years.

8.7.5 **Pooled Cost of Purchase of Electricity of PSPCL**

The Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 provide for determination of 'Pooled Cost of Purchase' of electricity, for the purpose of eligibility for a generating company engaged in generation of electricity from renewable sources of energy to apply for registration for issuance of and dealing in renewable energy certificates. The ibid CERC Regulations, under Regulation-5 for 'Eligibility and Registration for Certificates', define the 'Pooled Cost of Purchase' as hereunder:

'Pooled Cost of Purchase' means the weighted average pooled price at which the distribution licensee has purchased the electricity including cost of self generation, if any, in the previous year from all the energy suppliers long-term and short-term, but excluding those based on renewable energy sources, as the case may be.'

As per the ibid CERC Regulations, a generating company engaged in generation of electricity from renewable sources of energy, on fulfilling the conditions specified there-under, one of them being to sell the electricity generated to the Distribution Licensee (PSPCL) of the area in which it is located, at a price not exceeding the pooled cost of purchase of the distribution licensee, shall be eligible to apply for registration for issuance of and dealing in Renewable Energy Certificates.

Accordingly, the Commission has determined the 'Pooled Cost of Purchase' (APPC) as ₹3.82 per kWh. This 'Pooled Cost of Purchase', based on the data for FY 2016-17, will be applicable during FY 2017-18.

8.8 Separate Tariff for each Function

8.8.1 A summary of project wise ARR of Thermal Generating Stations and Hydel Generating Stations of PSPCL has been shown in Table 5.59 and Table 5.60(A) of this Tariff Order. Further, the details of ARR of Distribution Business of PSPCL and total ARR of PSPCL have been given in Table 5.65 and Table 5.66 of this Tariff Order. The project wise ARR of Thermal Generating Stations & Hydel Generating Stations of PSPCL and ARR of Distribution Business of PSPCL for FY 2017-18 is as given Table 8.6.

Table 8.6: Project wise ARR of PSPCL for FY 2017-18

(₹crore)

Sr. No.	Item of Expense	GNDTP	GGSSTP	GHTP	Shanan	UBDC	RSD	MHP	ASHP	Micro	BBMB	ARR of Generation Business	ARR of Distribution Business	ARR of PSPCL (XIII+XIV)
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
1.	Cost of Power Purchase												17681.12	17681.12
2.	Fuel Cost		979.01	643.32								1622.33	0	1622.33
3.	Employee Cost	183.20	276.01	121.22	23.17	36.36		48.54	33.51			722.01	3966.29	4688.30
4.	R&M and A&G Expenses	36.28	33.06	41.78	1.10	7.68		8.69	4.73	0.23		133.55	425.12	558.67
5.	BBMB O&M Expenses										258.23	258.23		258.23
6.	Depreciation	44.66	23.62	146.09	7.99	6.51	192.87	12.22	2.93		21.86	458.75	770.07	1228.82
7.	Interest Charges	5.49	10.47	1.41	2.32	0.24	17.36	3.42	0.13		14.30	55.14	1167.88	1223.02
8.	Return on Equity	77.27	70.41	88.96	2.34	16.36	150.17	18.51	10.08	0.50	11.09	445.69	496.94	942.63
9.	Interest on Working Capital	10.37	44.44	30.34	1.13	2.05	5.86	2.72	1.66	0.02	4.84	103.43	208.26	311.69
10.	Maintenance Charges payable to GoP for RSD						9.19					9.19		9.19
11.	Provision of DSM Funds												10.00	10.00
12.	Transmission Charges payable to PSTCL												1234.87	1234.87
13.	**Revenue Requirement**	**357.27**	**1437.02**	**1073.12**	**38.05**	**69.20**	**375.45**	**94.10**	**53.04**	**0.75**	**310.32**	**3808.32**	**25960.55**	**29768.87**
14.	Add: Consolidated Gap upto FY 2016-17, including carrying cost of Gaps	7.67	30.85	23.03	0.82	1.49	8.06	2.02	1.14	0.02	6.66	81.75	557.27	639.02
15.	**Gross revenue requirement (12+15)**	**364.94**	**1467.87**	**1096.15**	**38.87**	**70.69**	**383.51**	**96.12**	**54.18**	**0.77**	**316.98**	**3890.07**	**26517.82**	**30407.89**

8.9 Generation Tariff

8.9.1 As per PSERC MYT Tariff Regulations, 2014, the generation tariff will comprise of Energy Charges and Fixed (Capacity) Charges.

8.9.2 The fixed cost of a thermal generating station shall be computed on annual basis, based on norms specified under PSERC MYT Tariff Regulations, 2014 and recovered on monthly basis under capacity charge. The total capacity charge payable for a generating station shall be shared by the beneficiaries as per their respective percentage share/allocation in the capacity of the generating station. Full

Annual Fixed Charges (AFC) are payable on achievement of normative plant availability as specified in PSERC MYT Tariff Regulations, 2014. The Capacity Charge payable to a thermal generating plant for a calendar month shall be calculated in accordance with the formulae specified in the PSERC MYT Tariff Regulations, 2014.

8.9.3 The fixed cost of a hydro generating station shall be computed on annual basis, based on norms specified under these regulations, and recovered on monthly basis under capacity charge (inclusive of incentive) and energy charge, which shall be payable by the beneficiaries in proportion to their respective allocation in the saleable capacity of the generating station. The capacity charge (inclusive of incentive) payable to a hydro generating station for a calendar month shall be calculated in accordance with the formulae specified in the PSERC MYT Tariff Regulations, 2014.

8.9.4 The Energy (Variable) Charges for a thermal generating plant shall cover the primary fuel cost and secondary fuel cost, and shall be payable by every beneficiary for the total energy scheduled to be supplied to such beneficiary during the calendar month on ex-power plant basis, at the energy charge rate of the month (with fuel price adjustment), in accordance with PSERC MYT Tariff Regulations, 2014.

8.9.5 The Commission has assessed the plant wise AFC for FY 2017-18 on the basis of data provided by PSPCL during the processing of ARR for MYT Control Period from FY 2017-18 to FY 2019-20, as worked in Table 8.6. The plant wise AFC determined for FY 2017-18 is given in Table 8.7.

Table 8.7: Annual Fixed Charges-Generation for FY 2017-18

Sr.No.	Plant	Annual/Fixed Capacity Charges (₹crore)	Generation (MU)		Fixed Charges (paise/unit)	
I	II	III	IV		V	
A	**Thermal Plants**	**1306.63**				
1.	GNDTP	364.94	2915.85*	0.00**	125.16*	-
2.	GGSSTP	488.86	8584.49*	3203.32**	56.95*	152.61**
3.	GHTP	452.83	6268.04*	1915.28**	72.24*	236.43**
B	**Hydel Plants**	**644.14**				
1.	Shanan	38.87	515.37		37.71	
2.	UBDC	70.69	333.14		106.10	
3.	RSD	383.51	1684.98		113.80	
4.	Mukerian	96.12	1259.02		38.17	
5.	Anandpur Sahib	54.18	714.96		37.89	
6.	Micro Hydel	0.77	5.05		76.24	
7.	BBMB***					

** Worked out by taking Normative Annual Plant Availability Factor (NAPAF) of 85%.*
*** Worked out as per scheduled energy.*
**** AFC for hydel plants at Sr. No. 7 is determined by CERC.*

Accordingly, the total AFC recoverable in the case of thermal and hydel plants are:

i) Thermal - ₹1306.63 crore

ii) Hydel (excluding BBMB) - ₹644.14 crore

8.9.6 The AFC for both thermal and hydel plants will be payable on achievement of target availability as discussed in para 8.7.2 and para 8.7.3.

8.9.7 The variable (energy) charges for a thermal plant are the primary fuel cost and secondary fuel cost and is computed as cost per unit of ex-bus energy (energy sent out). As per approved ARR for FY 2017-18, the total fuel cost for all thermal plants is ₹1622.332 crore. These costs have been worked out plant wise and the variable charges per unit of energy for each plant are given in Table 8.8.

Energy charge rate (ECR) in paise per kWh on ex-power plant basis, for a hydro generating station, shall be determined up to three decimal places based on the formula specified in the PSERC MYT Regulations, 2014 are given in Table 8.8.

Table 8.8: Variable (Energy) Charges for FY 2017-18

A	**Variable (Energy) Charges for Thermal Plants**			
Sr. No.	**Plant**	**Fuel Cost (₹crore)**	**Generation (MU)**	**Variable Charges (paise/unit)**
I	**II**	**III**	**IV**	**V**
1	GNDTP	0	0	-
2	GGSSTP	979.012	3203.32	305.62
3	GHTP	643.320	1915.28	335.89
B	**Variable (Energy) Charges for Hydel Plants**			
Sr. No.	**Plant**	**Variable Cost (50% of AFC**) (₹crore)**	**Generation (MU)**	**Variable Charges (paise/unit)**
I	**II**	**III**	**IV**	**V**
1	Shanan	19.435	515.37	37.71
2	UBDC	35.345	333.14	106.10
3	RSD	191.755	1684.98	113.80
4	Mukerian	48.06	1259.02	38.17
5	Anandpur Sahib	27.09	714.96	37.89
6	Micro Hydel	0.385	5.05	76.24

** The plant wise fuel cost has been taken as approved by the Commission in para 5.7.4.*
*** AFC has been taken as per Table 8.6.*

8.10 Total charges for Generating Plants (Thermal and Hydel)

The total charges (fixed and variable) for generating plants as determined by the Commission are given in Table 8.9.

Table 8.9: Total energy charges for FY 2017-18

Sr. No.	Plant	Fixed Charges (paise/unit)	Variable Charges (paise/unit)	Total Charges (paise/unit)
I	II	III	IV	V = (III+IV)
A	**Thermal Plants**			
a)	**For generation as per NAPAF**			
1.	GNDTP	125.16	-	-
2.	GGSSTP	56.95	305.62	362.57
3.	GHTP	72.24	335.89	408.13
b)	**For generation as per scheduled energy**			
1.	GNDTP	0	-	-
2.	GGSSTP	152.61	305.62	458.23
3.	GHTP	236.43	335.89	572.32
B	**Hydel Plants**			
1.	Shanan	37.71	37.71	75.42
2.	UBDC	106.10	106.10	212.20
3.	RSD	113.80	113.80	227.60
4.	Mukerian	38.17	38.17	76.34
5.	Anandpur Sahib	37.89	37.89	75.78
6.	Micro Hydel	76.24	76.24	152.48

8.11 Distribution / Wheeling Charges

8.11.1 The gross revenue requirement for distribution for FY 2017-18 as per Table 8.6 is ₹7601.83 crore (excluding the power purchase cost and transmission charges). As per PSERC MYT Regulations, 2014 of the Commission, the distribution capacity for working out the wheeling charges shall be the sum of power imported at each interface point of exchange of power at electrical boundary of distribution licensee and generation from captive plants and cogeneration plants (to the extent fed into the distribution system) and plants injecting electricity generation from renewable sources of energy located in the area of such licensee. PSPCL intimated the total distribution capacity for working out the wheeling charges for FY 2017-18 as 13647.64 MW. The Commission has, however, worked out the total distribution capacity of PSPCL for FY 2017-18 as 13522.51 MW (net of transformation losses and auxiliary consumption).

8.11.2 The details regarding determination of wheeling charges for FY 2017-18 are given in Table 8.10.

Table 8.10: Wheeling Charges for FY 2017-18

a)	Energy requirement at the distribution periphery during FY 2017-18 (as per Table 5.7 of the Tariff Order)	53403.50 MU
b)	Distribution capacity determined by the Commission.	13522.51 MW
c)	Revenue requirement for distribution for FY 2017-18 (as per para 8.9.1)	₹7601.83 crore
d)	Wheeling charges for using distribution network during FY 2017-18 (c x 1000/a)	142 paise/kWh
e)	Wheeling charges during FY 2017-18 per MW/month [(c x 10^7)/(b x 12)]	₹468468/MW/Month

Accordingly, the Commission determines wheeling charges for using distribution network during FY 2017-18 as ₹468468/MW/Month (or 142 paise/kWh).

8.12 Open Access Charges

8.12.1 The Commission, in exercise of powers conferred under Section 42 read with Section 181 of the Electricity Act, 2003 (36 of 2003) and all other powers enabling the Commission in this behalf, based on the 'Statement of Reasons' issued vide No. PSERC/Secy./Reg.156 dated 29th June, 2011, framed the Punjab State Electricity Regulatory Commission (Terms and Conditions for Intra-State Open Access) Regulations, 2011 and notified the same vide Notification, the 1st July, 2011. These Regulations were amended vide Notification dated 4th May, 2012, wherein existing Regulation 25(5) was substituted as under:

"25(5) Long term, Medium term and short term Open Access customers availing supply at 220 kV, 132 kV, 66 kV, 33 kV or 11 kV, in addition to transmission charges, shall be liable to pay wheeling charges determined by the Commission as per the Tariff Order applicable for the year".

The Commission passed the Tariff Order dated 16.07.2012 for FY 2012-13 for PSPCL, and made wheeling charges applicable for Open Access customers as per amended Regulation 25 (5). Some Open Access customers filed Appeals, being No(s) 176, 191, 237, 245, all of 2012 against Tariff Order for FY 2012-13 and Appeal No(s) 142 and 168, both of 2013 against Tariff Order for FY 2013-14 challenging the wheeling charges payable by all Open Access consumers irrespective of the voltage level at which supply was being taken. The Hon'ble APTEL decided Appeal No(s) 245, 176, 237 and 191 of 2012 by common Judgment dated 12.09.2014.

Findings of the Hon'ble APTEL on the issue (Para 88 (i)) are as under:

"Wheeling Charges: We feel that the wheeling charges have been determined by

the State Commission in contravention to the provisions of the Act, Tariff Policy, National Electricity Policy and its own Regulations. Therefore, we have no option but to set aside the impugned Order in respect of determination of wheeling charges applicable to Open Access customers for the period 7.5.2012 to 31.3.2013 with directions to re-determine the wheeling charges applicable to Open Access customers as per the above findings within 90 days of communication of this Judgment and pass on the consequential relief to the Appellants and other Open Access customers. The retrospective revision of the inter-state transmission charges and wheeling charges for short term inter-state Open Access transactions by Open Access customers is also set aside as it is a contravention to the Inter-state Open Access Regulations of the Central Commission. Accordingly, this issue is decided in favour of Appellants".

The Commission initiated suo-motu proceedings vide Petition No.56 of 2014 to comply with the directions of the Hon'ble APTEL and called upon the parties to file written submissions with regard to the directions of the Hon'ble APTEL. During hearing on 11.11.2014, PSPCL submitted copies of Memorandum of Appeal filed under Section 125 of the Electricity Act, 2003 before the Hon'ble Supreme Court against the Order dated 12.09.2014 of the Hon'ble APTEL. The Commission, after hearing PSPCL on 16.12.2014, closed the hearing of the petition and reserved the Order.

The Hon'ble Supreme Court, in its Order dated 06.04.2015 had stayed the Judgment dated 12.09.2014 passed by the Hon'ble APTEL.

Similarly, some consumers of PSPCL had filed Appeal No.142 and 168 both of 2013 and had challenged the Tariff Order dated 10.04.2013 for FY 2013-14 for PSPCL, interalia on the ground of levy of wheeling charges as determined in the said Tariff Order in terms of Open Access Regulation 25(5) as amended in 2012 on the Open Access customers irrespective of the voltage at which the supply was taken. The findings of the Hon'ble APTEL dated 17.12.2014 on the issue in these Appeals are the same as in its Order dated 12.09.2014 in Appeal No(s) 176, 191, 237 and 245, all of 2012.

PSPCL filed Appeal before the Hon'ble Supreme Court under Section 125 of the Electricity Act, 2003. The Hon'ble Supreme Court had admitted the Appeals (Civil Appeal No(s) 2151-2152 of 2015) and had stayed the impugned judgment vide Order dated 27.03.2015.

Since both the judgments (dated 12.09.2014 and 17.12.2014) of the Hon'ble APTEL on the issue of levy of wheeling charges on Open Access customers have been stayed by the Hon'ble Supreme Court, the directions of the Hon'ble APTEL vide these Judgments cannot be complied with in this Tariff Order. The wheeling charges in terms of Regulation 25(5) of Open Access Regulations as amended vide notification dated 4thMay, 2012, shall continue to be payable by all Open Access customers.

8.12.2 As per the Open Access Regulations notified by the Commission, the wheeling charges for using distribution network during FY 2017-18 are ₹468468/MW/Month.

8.12.3 The energy requirement at the distribution periphery as per Table 5.7 of this Tariff Order for FY 2016-17 is 53403.50 MU. On this basis, the wheeling charges for use of the distribution network during FY 2017-18 are determined as 142 paise/kWh (128 paise/kVAh).

As per clause 25(5) of PSERC (Open Access) Regulations, 2011 (amended on 4th May, 2012), Short Term Open Access customers availing supply at 220 kV, 132 kV, 66 kV, 33 kV or 11 kV, in addition to transmission charges determined separately in the Tariff Order for PSTCL for FY 2017-18, shall also be liable to pay wheeling charges (i.e. of 142 paise/kWh (128 paise/kVAh)) determined by the Commission for FY 2017-18.

For Long-term and Medium-term Open Access (OA) customers availing supply at 220 kV, 132 kV, 66 kV, 33 kV or 11 kV, wheeling charges shall be ₹468468/MW/Month of the contracted capacity.

Transmission and Wheeling charges for wheeling of NRSE power for consumption within the State shall be levied @ 2% of the energy injected into the State Grid, irrespective of distance. In case of wheeling of NRSE Power outside the State, full transmission and wheeling charges shall be leviable.

Provided that in case of wheeling of power for consumption within the State, generated from NRSE project in the State, achieving commercial operation (COD) from 09.07.2015 to 31.03.2017, no transmission and wheeling charges shall be leviable, irrespective of the distance, for a period of 10 (ten) years from its date of commercial operation (COD).

8.12.4 As per clause 30(2) of PSERC (Open Access) Regulations, 2011, the Open Access customers shall bear Transmission & Distribution losses as under:

(i)	OA customers at 132/220 kV	2.5%
(ii)	OA customers at 66/33 kV	15% of distribution losses (12.05%), which works out to 1.81%, in addition to Transmission Loss of 2.5%.
(iii)	OA customers at 11 kV	40% of distribution losses (12.05%), which works out to 4.82%, in addition to Transmission Loss of 2.5%.

8.12.5 As per clause 26(2) of PSERC (Open Access) Regulations, 2011, the cross-subsidy surcharge for various categories of consumers during FY 2017-18 shall be as under:

Large supply	-	71 paise/kWh 67 paise/kVAh for Large Supply General Industry and 69 paise/kVAh for Large Supply PIU/Arc Furnace consumers)
Domestic supply	-	123 paise/kWh (113 paise/kVAh)
Non-Residential supply	-	128 paise/kWh (118 paise/kVAh)
Bulk supply	-	91 paise/kWh (86 paise/kVAh)
Railway Traction	-	93 paise/kWh (91 paise/kVAh)

8.12.6 In addition, other charges such as additional surcharge, operation charges, UI, reactive energy charges, shall be levied as per the Open Access Regulations/ Tariff Regulations notified by the Commission.

8.13 Fuel Cost Adjustment (FCA)

8.13.1 **Fuel Cost Adjustment (FCA) Surcharge for 3rd quarter of FY 2016-17**

PSPCL filed Petition No. 10 of 2017 for approval of Fuel Cost Adjustment (FCA) Surcharge for 3rd quarter of FY 2016-17. The petition was taken by the Commission on 14.03.2017 and the Commission vide order dated 14.03.2017, ordered as under:

"On hearing the petitioner, the petition is admitted. The petitioner is directed to submit details of variables in costs for Rajpura and Talwandi Sabo Generating Stations as compared to the other stations for justification of the Fuel Cost Adjustment Surcharge by 21.03.2017 (through email and hard copy).

The Petition *shall be* taken *up for hearing on 24.03.2017 at 11.30 A.M."*

In response to Commission's order dated 14.03.2017, PSPCL vide its letter no. 2116 dated 21.03.2016 intimated as under:

> *"......... it is intimated that the variable cost for FY 2016-17 for various generating stations was fixed by PSERC as variable cost for the month September, 2015.*

Thereafter following (sr. no. 1 & 2) changes have occurred with respect to coal price and rail freight:

- *There is increase in coal prices for G12 to G6 grades w.e.f. 30.05.2016. In this regard, MCL (subsidiary of CIL) letter no. MCL/SBP/GM(S&M)/2016/1134 dated 29.05.2016 along with CIL price notification no. CIL/S&M/GM(F)/pricing 2016/294 dated 29th May, 2016 are enclosed herewith.*
- *The base freight tariff of coal & coke has been rationalized by the Ministry of Railways w.e.f. 24.08.2016 vide corrigendum no.14 dated 22.08.2016 and corrigendum no. 55 dated 24.08.2016 to rates circular no. 8 of 2015 (copies enclosed) but at the same time levied "Coal & Coke Terminal Surcharge (CTS)" which is leviable at the rate of ₹55/- per tonne at both loading and unloading terminals over and above the base freight rate for the distance beyond 100 Kms. That means it is not leviable on plants which are situated near to the coal mine/at pit head.*

Further, it is submitted that railway imposes "Busy season charge" at the rate of 15% over and above *the base freight rate for all the period during the year except 1st July to 30th September (in this regard copy of Railway Board letter no. TCR/1078/2015/14 dated 20.07.2015 is enclosed). Due to this, the effective increase in freight comes out to be 16.46% taking into account development charges @5% and service tax @4.5%.*

As such, busy season charge and Coal & Coke Surcharge has increasing effect on railway freight for the FCA petition period i.e. 3rd quarter of FY 2016-17 as compared to the month of September, 2015 on the basis of which the Commission has approved variable costs for various plants for FY 2016-17.

The increase in railway freight has nil/negligible impact on the Kahalgaon and Farakha Power Plants which comprises major value of negative variable cost for the period of 3rd quarter of FY 2016-17 as the same are located near to coal mines.

It is requested to put up the above for kind information & consideration of the Commission, please."

As the Tariff Order for MYT Control Period from FY 2017-18 to FY 2019-20 is under process, the Commission vide order dated 18.04.2017 ordered as under:

"............The tariff order for MYT Control Period from FY 2017-18 to FY 2019-20 is under process, wherein the Commission is determining the revised fuel cost

for FY 2016-17 (Review) on the basis of data submitted by PSPCL in the ARR for MYT Control Period (Petition No. 90 of 2016) and the figures validated by the Commission. The Commission, therefore, will determine the FCA Surcharge for the 3rd quarter of FY 2016-17 in the Tariff Order for MYT Control Period from FY 2017-18 to FY 2019-20, based on the performance parameters approved in review of FY 2016-17......"

8.13.2 **Fuel Cost Adjustment (FCA) Surcharge for 4th quarter of FY 2016-17**

PSPCL filed Petition No. 38 of 2017 for approval of Fuel Cost Adjustment (FCA) Surcharge for 4th quarter of FY 2016-17. The petition was taken by the Commission on 15.06.2017 and the same was admitted by the Commission. The Commission vide order dated 21.06.2017, ordered as under:

"............The tariff order for MYT Control Period from FY 2017-18 to FY 2019-20 is under process, wherein the Commission is determining the revised fuel cost for FY 2016-17 (Review) on the basis of data submitted by PSPCL in the ARR for MYT Control Period (Petition No. 90 of 2016) and the figures validated by the Commission. The Commission, therefore, will determine the FCA Surcharge for the 4thquarter of FY 2016-17 in the Tariff Order for MYT Control Period from FY 2017-18 to FY 2019-20, based on the performance parameters approved in review of FY 2016-17......"

8.13.3 During the processing of this Tariff Order, the Commission asked PSPCL to submit the provisional details for its own generation and power purchase during FY 2016-17. PSPCL vide letter no. 742 dated 04.09.2017 has submitted the Plant wise generation and source wise power purchase for FY 2016-17. The Commission in Chapter 5 of this Tariff Order, while determining the revised costs for FY 2016-17 has taken these figures supplied by PSPCL for full year, into account. **As the Commission has considered the provisional figures for PSPCL's own generation, power purchase and the provisional costs ending March, 2017 while reviewing the costs for FY 2016-17, as such, the petitions filed by PSPCL for determining FCA for 3rd and 4th quarter of FY 2016-17 has been rendered infructuous. The Petition Nos. 10 of 2017 and 38 of 2017 are disposed off accordingly.**

8.14 Date of Effect

The Commission notes that the ARR Petition of PSPCL for FY 2017-18 covers the complete financial year. The recovery of tariff, therefore, has to be such that the total revenue requirement of PSPCL for FY 2017-18 is recovered in this period. **As such, the Commission decides to make the revised tariffs applicable from April 01,**

2017 until and unless specified otherwise in this Tariff Order. And, the tariff structure determined above shall remain operative till March 31, 2018. The Commission has also decided that PSPCL shall recover the arrears of the revised tariff from the consumers in equal instalments, along with regular bills, from October, 2017 to June, 2018.

This Order is signed and issued by the Punjab State Electricity Regulatory Commission on this, the 23rd day of October, 2017.

Date: October 23, 2017
Place: CHANDIGARH

Sd/-	**Sd/-**	**Sd/-**
(Anjuli Chandra)	**(S.S. Sarna)**	**(Kusumjit Sidhu)**
MEMBER	**MEMBER**	**CHAIRPERSON**

Certified

Sd/-
Secretary
Punjab State Electricity Regulatory Commission,
Chandigarh.

APPENDIX-I

Minutes of the Meeting of State Advisory Committee of the Punjab State Electricity Regulatory Commission, held on February 14, 2017.

The meeting of the PSERC State Advisory Committee was held in the office of the Commission at Chandigarh on February 14, 2017 to discuss ARRs and Tariff Petitions for MYT Control Period from FY 2017-18 to 2019-20 filed by PSPCL and PSTCL. The following were present:

1	Shri D.S. Bains Chairman, PSERC, SCO 220-221, Sector-34-A, Chandigarh.	Ex-officio Chairman
2	Er. S.S. Sarna Member, PSERC,SCO 220-221, Sector-34-A, Chandigarh.	Ex-officio Member
3	Secretary Food & Supplies and Consumer Affairs, Government of Punjab, Chandigarh.	Ex-officio Member
4	Secretary Department of Power, Government of Punjab, Chandigarh.	Member
5	Labour Commissioner, Deptt. of Labour & Employment, Government of Punjab, Chandigarh	Member
6	Director/Distribution, PSPCL, The Mall, Patiala.	Member
7	Director, Finance & Commercial, PSTCL, The Mall, Patiala	Member
8	Chief Engineer/ARR&TR, PSPCL, F-4,Shakti Vihar, Patiala	Member
9	Director, Agriculture, Deptt. of Agriculture, Govt. of Punjab, Chandigarh	Member
10	Chief Project Manager, Rural Electrification Corporation Ltd, REC, Project Office, Bay7-8,Sector2,Panchkula	Member
11	Chief Executive Officer, Punjab Energy Development Agency (PEDA), Plot No.1, Sector 33-A, Chandigarh	Member
12	Chairman, PHDCCI, Punjab Committee, Sector 31-A, Chandigarh	Member
13	Prof. R.S. Ghuman, Chair Professor, Nehru SAIL Chair & Head Panchayati Raj Unit, Centre for Research in Rural & Industrial Development (CRRID), Sector19-A, Chandigarh.	Member
14	Er. S.K. Anand, (Ex-Member, PSEB),68, Ajit Nagar, Patiala	Member

15	Er. A.S. Pabla, (Ex-Chief Engineer, PSEB), H.No.69,Phase-IIIA, S.A.S Nagar, Mohali.	Member
16	Sh. Bhagwan Bansal, Punjab Cotton Factory, Ginners Association, Regd. Shop109, New Grain Market, Mukatsar	Member
17	Shri Jagtar Singh, Director, Social Work & Rural Development Centre, VPO Nurpur Bedi, Distt. Ropar	Member

At the outset, the Chairman welcomed the members of the State Advisory Committee and thanked everyone present for having spared time to attend the meeting. The Chairman thereafter requested the members to offer suggestions/comments on the ARR and Tariff Petitions for the MYT control period financial year 2017-18 to FY 2019-2020 filed by PSPCL and PSTCL. He also requested the members to give their views/suggestions for utilization of surplus power available in the State of Punjab. Member, PSERC also welcomed State Advisory Committee Members and requested them to give their suggestions for promoting industries under “Make in India” programme. He also sought the views of the Members for maximum utilization of surplus power by enhancing consumption by the existing industry as well as by ensuring that the sick/shutdown industry is revived, and also to ensure that benefit be given to poor consumers in the state of Punjab. Thereafter, the members gave their valuable suggestions as under:-

1. <u>Shri Venu Parsad, Principal Secretary, Power, GoP</u>

He suggested as under:

- PEDA may be directed to delay the proposals for setting up more solar power projects for at least one year to avail the benefit of declining prices of solar modules/equipments prices, which would be in the overall interest and benefit of the State.
- Many of PPAs were signed during the period of power deficit regime, to meet with the peak demand. In the backdrop of CEA prediction of 10% annual growth in the power demand, he informed that, in view to ensure MOD of power procurement, state thermal generating plants could not be run to their higher variable cost. He further informed that the decision to close one unit of GNDTP was already under consideration of GoP. He pointed out that in view of the surplus power situation, the challenge is how to increase the consumption of power in the State. He stated that in view of fast decreasing rate of solar power, execution of new PPAs was increased during the last three years. He suggested the Commission to determine the tariff

judiciously to protect the interest of all stakeholders.

- He added that the introduction of UDAY scheme had significant impact such as on the interest on loans of PSPCL. Interest burden to the extent of loans taken over the State of Government of Punjab stands reduced. The same also impacts the revenue gap of FY 2016-17. DISCOM loans have also been paid by the Utility due to issuance of Bonds by the GoP. Thus, ascending to this, the financial position of PSPCL has been eased due to restructuring of loan.

2. <u>Shri. U.K. Panda, Director/F&C, PSTCL</u>

Following suggestions were given:

- Director/F&C, PSTCL has raised out the important issue relating to the financial viability of the Power Utilities. He said that the restructuring of PSEB in 2010 was done with a Financial Restructuring Plan (FRP) which had projections for 10 years with certain assumptions with regard to revenue & cost. These assumptions, however, did not materialize for various reasons. He stated that in the ARR/ tariff allowed by PSERC fell short of the projected ARR/tariff resulting in revenue shortfall. This affected the financial viability of Power Utilities which need to be addressed by the Hon'ble Commission. He referred to Sec-61 of the Electricity Act, 2003 and the National Tariff Policy (NTP) notified by GOI. Section-61 lays down the guidelines which, interalia, include recovery of cost of electricity through tariff in a reasonable manner. One of the objectives of the NTP is to ensure financial viability of the Utility while setting the tariff. He urged upon the Hon'ble Commission to take a pro-active approach and consider the submission of the Utility for approval of the Business Plan and the ARR/Tariff of FY 2017-18 to FY 2019-20. While doing so, the financial viability of the Power Utilities may be kept in view. He appreciated the initiative of the Hon'ble Commission in implementing MYT with a control period of 3 years beginning 2017-18. He said that Long Term approach will mitigate the regulatory uncertainty to a large extent and set a direction in the tariff setting process which will be in the interest of all the Stakeholders. The baseline values assume importance in the MYT regime for allowing costs on a normative basis during the control period. He requested Hon'ble Commission to consider the audited figures of FY 2015-16 as the base line values for allowing tariff on normative basis for the control period FY 2017-18 to FY 2019-20 which is in accordance with the MYT Regulations, 2014. He informed that audited accounts of PSTCL for FY 2015-16 has since been submitted to the Hon'ble Commission.

3. **Shri. S.K. Anand**

He stated as under:

- Heavy cross subsidy is being imposed on all other categories of consumers due to a very low price fixed for paddy consumption, which otherwise happens to be the costliest power. Apart from the fact that paddy load causes the highest losses in the system; around 30% or more of additional generation, transmission and distribution capacity has been created, solely for supporting the seasonal paddy load. He further stated that, PSERC fixed the paddy tariff at ₹4.58 per unit last year, when Haryana paid subsidy at the rate of ₹7.38 per unit for the same period.

  Payment of large amounts of fixed Charges to the private power producers is an extremely serious issue. Addition of huge quantum of power in one go, was not a judicious decision, without a concrete plan for industrial growth. He said that, the decision makers were either unaware, or ignored the fact that Punjab has a typical load curve, where demand as well as consumption drops by 40-50% during the non paddy months. Collective efforts are required for tackling this issue with a focus on industrial growth

  He further stated that the recent orders issued by PSERC to give free power to backward classes involving huge addition in subsidy will also add to PSPCL's woes, and needs to be reviewed. Allowing industrial power @4.99 to all SP and MS categories of consumers; and to LS consumers for additional consumption, over and above their existing average, would lead to all kinds of problems and is like open pandora Box.

  Implementation of PSERC directions for reorganization of the distribution set-up on functional basis is absolutely essential. He said that he has been pushing it for the last many years, and he is of the firm opinion, that they cannot start their journey towards achieving international standards in the design, construction and O&M of the system, without ensuring all round engineering inputs in these areas. Real reforms would start, only after we restructure the distribution setup, which at present, is based on the 4-5 tiered 1895 PWD structure, by creating dedicated units for O&M, Design and Construction, Protection, plant, regional control and commercial activities. SDO office needs to be abolished, to be replaced by functional engineers assisting the Sr. engineers heading these specialized wings, with their involvement in purely engineering activities, for the first 7-8 years. He however added that, this is not an easy job, and will be opposed by all the vested interests across the board, including engineers, and will require a strong will of the stake holders.

He expressed the view that without these inputs, PSPCL would not be able to undertake/complete the massive task of updating the Distribution system in line with those operating worldwide. Implementation of scada at 11 kv levels is not possible, without an over haul of the distribution system. He added that distribution system in Kenya, where he worked as an expatriate engineer from 1981 to 1986 was much better designed, much better constructed, and much better maintained, with very low levels of trippings/breakdowns, almost negligible levels of equipment loss, and much lower losses. More than 20 ring main stations, operating in Nairobi, the capital city with a population of one million, were unmanned, and incidence of 11 kv breaker trippings was very low. Unmanned stations can operate only with high construction standards both for the station, as well as the system down the line, which has to be well designed, with proper insulation coordination. The levels of 11 trippings, loss of equipment, technical losses, and the quality of supply are nowhere near the international figures. According to this, implementation of scada at 11 kv levels is not possible, without an over haul of the distribution system.

Having said that, he added that, in the prevailing national environment, PSPCL was declared the best running company last year, by the Ministry of Power, Government of India, with lowest AT&T losses; and in his view, is also the best among all the departments of Punjab Government. It is fully equipped to take the next leap, and needs all the support from Pb. Govt. as well as PSERC, which in his views has been lacking thus far.

He complemented PSERC for having developed an excellent data base and data analysis proficiencies of high standards. He was of the view that PSERC is capable of going into the nitty gritty of the report in a fair manner, and arriving at a suitable tariff increase, which is a must, as no increase has been given during the past two years.

He recommended to GoP that cross subsidy for industrial consumers being very high, Paddy price this time, should be fixed @ ₹6 per unit, or more, with suitable compensation, or at least no increase for the industrial consumers.

4. Er. A.S. Pabla, Ex-chief Engineer, PSEB

He made the following points:

- It was pointed out that while finalizing the two part tariff, the Commission may keep in view that the solar producers and consumers are not adversely affected. RPO specified by the Commission is required to be complied with by PSPCL and needs to be monitored regularly.

- While finalizing the two part tariff, the Commission may keep in view that the interests of small consumers (SP & DS) and of solar CPPs are not adversely affected.
- AMP in all AP feeders needs to be commissioned.
- Benefit of DSM has not been given/mentioned in ARR.

5. Shri R.S. Sachdeva, PHDCCI

The following suggestions were made by him:

- He pointed out that in the MYT petition for the control period from FY 2017-18 to FY 2019-20 filed by PSPCL, PSPCL has estimated ₹13.89 per kWh as cost of generation from its own thermal stations and ₹11.51 per kWh as cost of generation from its own Hydel stations at page no. 5 of Vol-I (Part-3) which is a matter of concern and needs to be looked into. It was suggested that the study regarding specific suitable locations for installation of solar power plants at different locations in Punjab and techno-economic study for closure of inefficient thermal plants should be got carried out from Institute of Management, Ahmadabad.
- He thanked the Commission for making efforts for survival of the industry especially ToD tariff which helped the industry to a great extent. He pointed out that in the MYT petition for the control period from FY 2017-18 to FY 2019-2020 filed by PSPCL, it has estimated very high cost of generation from its own thermal stations and Hydel stations at page no. 5 of Vol-I (Part-3) which is a matter of concern and needs to be looked into. It was suggested that the PSPCL should call tenders for Power Procurement for Price discovery. It was also suggested that PPAs be reviewed, old & inefficient plants be made defunct, TPT should not be to the disadvantage of the Industrial consumers, surcharge of 10 paise/unit on continuous industry be discontinued. It was also suggested that clarification/orders of PSERC should not normally be contested by PSPCL in APTEL.

6. Shri Balour Singh, Director, PEDA

The following issues were raised by him:

- He said that the renewable capacity in the State is approximately 1000 MW comprising solar, biomass and hydro. The RPO requirement for FY 2016-17 is 5.4% whereas MoP, GoI has suggested the same to be 15% by 2022. The solar tariff has achieved grid parity. The Commission has approved the tariff for 100% rice straw based power projects. Accordingly, Implementation of Agreements for 182 MW of such projects have been signed by PEDA with various developers. It was requested that PSPCL may be directed to sign the PPAs for these projects at the earliest.

7. **Smt. Aishvarya Sharma, representative from Director Agriculture, Punjab**

- It was requested that PSPCL may be directed to make 100% rice straw based power plant at Jalkheri operative as soon as possible. It was suggested that the number of hours of supply to agricultural pumps in the months of April and May, may be increased to 8 hours so that the farmers are able to decompose the wheat straw in the fields itself.

8. **Shri R.S. Ghuman, Chair Professor, Nehru SAIL Chair & Head Panchayati Raj Unit, CRRID**

The following issues were raised by him:

1. **The financial position of the Punjab State Power Corporation Limited (PSPCL)**

He pointed out that it is seen from the ARR of the PSPCL (page 48, table 28, Vol. 1, part 1), interest on loans for 2014-15 is ₹1,161.08 crores. It seems that the increase in the opening balance of loan was primarily because of the fact that short term and medium term outstanding loan as on 16th April 2010 were repaid by taking loan and new loan for a longer period were raised in subsequent years as per statutory notification of the Government of Punjab. It is pertinent to know that repayment of outstanding loan by taking new loans is not a healthy symptom. Moreover, this trend is unsustainable for the financial health of the PSPCL.

Similarly, according to him, interest on working capital loan for 2014-15 is ₹1423.28 crores. This implies that PSPCL is unable to finance its capital from its own sources. Such a scenario will further cripple the PSPCL financial health. He was sure that the amount of loan and interest would have been higher in 2015-16 (also in the subsequent years) but the ARR does not carry that figure for the FY 2015-16.

2. **The subsidy by the Government to various sections** (**Table 35, page 57, Table 59, page 95, Table 54 page 79 of Volume I part II)**

It was pointed out that though every government has the right to give subsidy to the deserving sections and population, yet this issue needs a thorough and serious review. As per the rationale of subsidy, it is either given to promote new technology or to address some distress situation. In the second case subsidy is aimed at certain targeted groups but the Government of Punjab is giving subsidy across the State especially to the agriculture sector. Moreover, the kind of power subsidy being given to agricultural sector is against the very spirit of diversification. This promotes the paddy crop and injudicious use of water leading to serious depletion of water level. Even from the sustainability point of view, the depletion of water level has already become a serious issue and needs a public debate. During the last about 15 years, the water level has gone down from nearly 6 meter to 18 meters in the central Punjab which is mainly the paddy zone.

He further stated that the total amount of subsidy for FY 2014-15 was ₹5874.94 crores and as per the ARR, the Government of Punjab gave ₹4642 crores. Thus, the amount of ₹1233 crores was due from the Government of Punjab. Thus, ARR does not carry the subsidy amount for 2015-16. Subsidy amount for 2016-17 was ₹7171.23 crores which will rise to ₹8000 crores in 2017-18, to ₹8248 crore in 2018 19 and further to ₹8506 crores in 2019-20. This means, according to him, for a span of 4 years the subsidy amount will increase by ₹1335 crores which come out to be approximately ₹455 crores per annum. Out of this subsidy, the lion's share goes to the agricultural sector.

It was noted with concern that the anti-diversification, depletion of water level, increasing number of submersible tube wells and need for higher and higher horse power of motors will certainly add pressure to the sub-soil water as well as agricultural economy.

According to him, it is high time that the policy of subsidy be reviewed and rationalized. One of the plausible ways out may be giving power subsidy only up to semi- medium farmers (up to 7.5 acres). Alternatively this subsidy can be limited to one tube well per household. It was suggested that, the amount saved on this account should be invested in rural education and rural health.

3. Surplus power or problem of plenty

It was stated that three private thermal power plants (GVK, TPS and NPL) have no doubt made the state power surplus and the Government is calming credit for it. However, the surplus has now become liability for the state exchequer and the financial health of PSPCL.

In view of the MoUs signed between these plants and the utility, the PSPCL is bound to purchase power from these plants. In case the PSPCL does not purchase power, even then the fixed charges shall have to be paid to these plants and in that case only variable charges are saved. It has been found that during the last couple of years, the PSPCL's own thermal power plants are either running at a much lower capacity or facing a frequent shut down. This means that the manpower on its own plants, machinery and infrastructure is being underutilized at the cost of the consumers and tax payers. He advised that if possible, the MoUs need to be reviewed.

4. **The capital investment**

   It was pointed out that as per ARR Part I, table 14, page 51, The PSPCL proposes to carry out the capital works with 100% debt financing (Page 52) whereas regulation 19 of the PSERC MYT regulation 2014 provides the debt equity ratio as 70:30. This means the debt amount and the debt service is increasing.

   Punjab State Transmission Corporation Limited (PSTCL)

   It was stated that the financial health of PSTCL too is not very encouraging as the loan of this utility has been increasing over the period of time. As on 31 March 2014, the total loan on PSTCL was ₹3718 crores which increased to ₹3971 crores during 2014-15. It further increased to ₹4000 crores in 2015-16 and further to ₹4174 crores in 2016-17 (table 15 page 30). He observed that in view of the old transmission lines and other infrastructure, the utilities would need a huge amount for repair and replacement.

   It was stated that the funding of capital investment is also being met by raising loans. This also needs a serious review.

The following Suggestions were given:

1. In view of the importance of the PSPCL and PSTCL for the government and people of Punjab, the public sector generation and transmission must be saved from financial crunch and further strengthened. At any given point of time the majority share in power generation must be with the public sector as power is an essential and a public utility.
2. In order to have a comparative analysis, the ARR should give a comprehensive table of gross and net generation from various sources, at least for the previous ten years.
3. Such a table should also be there for the energy balance for the previous ten years.
4. The AP consumption should also be given in a tabular form for the last ten years. This sector also needs to metered.
5. A table containing subsidy amount to AP and other consumers should also be given in the ARR.
6. The PSPCL should also come out with its financial status report from the year of incorporation. There is also a need to look into whether subsidy is the major cause of its bad financial health or there are some other reasons. This is important so that it becomes a bench mark for the subsequent years.
7. Since the utilities cannot continue with ever rising debt and debt service, there is a

need to conduct a study for the reasons of bad financial health and suggestions / recommendations to address the issue so as to improve the financial health of the utility and make it a surplus budget entity.

8. Since surplus power is a liability, there is a need to enhance the consumption of power within the state across all sections of consumers and finding the potential consumers outside the state and even across the international border. One of the ways being suggested is to give incentive in the form of lower tariff for big consumers, a policy of paying less for consuming more. In view of the marginal cost pricing principle, this suggestion seems to be quite plausible. However, there is a need to be cautious so that the wasteful consumption of electricity is avoided.

   The second way out is to revise and strengthen industrial and commercial sector so that there is increase in demand for power. This would enhance employment and increase demand in the domestic sector as well.

   In view of the studies that a 1% increase in GDP leads to 1.5% increase in demand for energy, this means the state of Punjab need to accelerate the growth rate of the gross state domestic product (GSDP) which has been facing a deceleration for the last about 25 years. Since 1992, the growth rate of GSDP of Punjab has been much lower than the national average. This has led to a lower demand for power especially in the industrial sector. The closure of industrial units (18770 units during 2006-13) and the migration of industry outside the state also need serious attention if one really wants to address the issue of surplus power and translate it into an opportunity.

   Prof. Ghuman stated that he is conscious about the fact that some of the suggestions may not fall in the purview and jurisdiction of PSERC yet the PSERC and other stake holders need to play their role in order to accelerate the growth rate of the state, especially that of industrial sector, so that the surplus power is consumed for the development of the state and its economy.

9. <u>Sh. Sarbhag Singh Passi (Agriculture Manufacture Association)</u>

- It was suggested by him that Agro-Industry be promoted by giving subsidy.

10. <u>Shri Bhagwan Bansal, President of Punjab Cotton Factories & Ginner's Association</u>

He made the following points:

- It was suggested that special package be given to revive the sick & closed small units. He also suggested that a system like Lok-Adalats be established to settle dispute cases out-of-courts. He also pointed out that there is the need to study the reasons for shifting of industry from Punjab to other States and also that it is required to develop confidence in Industrial captains to bring Industry to Punjab. Further, he suggested that Force Majeure clause be also included for Cotton Ginning Industries in the Tariff Orders under consideration.

- He informed that cotton Ginning Industry is passing through very critical period, because the raw material of the industry is 'Narma(cotton)' and the cotton crop has failed from the last five years to six years, which is in the hands of Nature.

He informed the Hon'ble Commission that there are many reasons affecting the cotton crop.

a Attack of Americal Bowl-worm.

b Attack of White and Pink Fly.

c Encouragement of Govt. policies for paddy and basmati after sanctioning tubewell connections.

d Non-availability of good quality seed and tested pesticides to be distributed tofarmers.

e No lab to check seeds & pesticides in Malwa.

f Faulty tax structure of sales Tax Department of Punjab compared with neighboring States.

Due to above mentioned reasons no one can predict future crop of cotton. At present only 58 ginning units remains functional out of 422 units. He requested to induct force majeure clause, if any natural calamity affects on cotton crop then as practice in Arc Furnace to charge 4-5month General Category Tariff rather than charge seasonal rate, to save this industry.

Second suggestion from him was that after running cotton seasonal industry for 4-5 months, if the consumer wants to run it for another two months then the rate should be of General Category ₹188/- rather than 518/- per kVA of seasonal Category.

In the end the Chairman, PSERC thanked all the Members again for being present for the meeting and for giving their valuable suggestions.

APPENDIX-II

<table>
<tr><th colspan="4">Category-wise & Voltage-wise Cost of Supply and Cross Subsidy comparison with Cost of Supply: MYT Control Period from FY 2017-18 to FY 2019-20</th></tr>
<tr><th>Voltage level</th><th rowspan="2">Consumer category</th><th>Cost of Supply</th><th rowspan="2">Cross subsidy level w.r.t. Cost of Supply</th></tr>
<tr><th>kV</th><th>₹/unit</th></tr>
<tr><th>I</th><th>II</th><th>III</th><th>IV</th></tr>
<tr><td rowspan="2">220 kV</td><td>Industrial</td><td>4.97</td><td>31.86%</td></tr>
<tr><td>Traction</td><td>4.94</td><td>48.88%</td></tr>
<tr><td rowspan="3">132 kV</td><td>Industrial</td><td>5.08</td><td>28.97%</td></tr>
<tr><td>Bulk</td><td>4.91</td><td>49.31%</td></tr>
<tr><td>Traction</td><td>4.95</td><td>48.79%</td></tr>
<tr><td rowspan="3">66 kV</td><td>Industrial</td><td>6.32</td><td>3.71%</td></tr>
<tr><td>NRS</td><td>5.95</td><td>6.96%</td></tr>
<tr><td>Bulk</td><td>6.88</td><td>6.52%</td></tr>
<tr><td rowspan="2">33 kV</td><td>Industrial</td><td>6.88</td><td>-4.81%</td></tr>
<tr><td>Domestic</td><td>6.14</td><td>18.51%</td></tr>
<tr><td rowspan="4">11 kV</td><td>Industrial LS</td><td>5.94</td><td>23.67%</td></tr>
<tr><td>Domestic</td><td>7.46</td><td>-2.81%</td></tr>
<tr><td>NRS</td><td>7.64</td><td>-3.40%</td></tr>
<tr><td>Bulk</td><td>5.98</td><td>22.63%</td></tr>
<tr><td rowspan="7">LT</td><td>Industrial MS</td><td>7.05</td><td>-2.41%</td></tr>
<tr><td>Industrial SP</td><td>7.85</td><td>-18.05%</td></tr>
<tr><td>Domestic</td><td>6.47</td><td>-2.01%</td></tr>
<tr><td>Agriculture</td><td>6.52</td><td>-19.64%</td></tr>
<tr><td>NRS</td><td>6.81</td><td>13.25%</td></tr>
<tr><td>Public Lighting</td><td>6.38</td><td>20.66%</td></tr>
<tr><td>Bulk</td><td>6.27</td><td>22.85%</td></tr>
</table>

Punjab State Electricity Regulatory Commission
SCO : 220-221, Sector 34-A, Chandigarh-160 022
Tel. : 0172-2648321, Fax : 0172-2664758

RAJIV BHATIA, IRS
Secretary

DO No. PSERC/M&F/T-198/1033
Dated : 20-9-2017

Subject: Aggregate Revenue Requirements (ARR) for the Multi Year Tariff (MYT) for Control Period from FY 2017-18 to FY 2019-20 of PSPCL and PSTCL – Payment of Subsidy by the State Government for FY 2017-18.

The Commission has finalized the ARRs of both the Utilities and Tariff for various consumer categories has been determined.

2. The State Government vide Memo. No 1/2/2017-EB(PR)/584 dated 14th September, 2017 while commenting on the ARR of PSPCL, conveyed its commitment to supply free power to AP consumers, 200 units per month to SC consumers, Non SC BPL consumers, BC consumers and 300 units to Freedom Fighters.

3. In addition to the above, earlier the State Government had also decided vide Memo No.2/5/2015-PE2/2088 dated 25th July, 2016, to supply electricity to new / prospective industry that come through the Progressive Punjab Summit, 2015 at a concessional rate of 499 paisa per kVAh and provide subsidy of differential tariff rate fixed over and above the concessional rate for a period of 5 years. The State Government letter dated 14th September, 2017, has not mentioned this subsidy, but the financial implications are being indicated below at para 6 for FY 2017-18 since the commitment was given for a period of 5 years.

4. The State Government vide Memo No. 1/34/2015-EB(PR)/2747 dated 12th October, 2016, had decided to supply electricity to Small Power Industrial Consumers at concessional tariff of 499 paise per unit during the year 2016-17. Since the State Government letter dated 12th October, 2016 indicated this subsidy only for the year 2016-17 and did not mention anything about extending it to subsequent years, hence, subsidy on this account has not been indicated below at para 6 for FY 2017-18.

5. The State Government is also considering to fix tariff @ ₹5.00 per kVAh (excluding FCA) to the existing as well as prospective industry for a fixed period of 5 years under the Industrial Policy, 2017 as per Memo. No 1/2/2017-EB(PR)/584 dated 14th September, 2017. Subsidy amounting to ₹2767.70 crore will be payable on this account for the whole of FY 2017-18.

However, this subsidy of ₹2767.70 crore has not been included while calculating the total subsidy for FY 2017-18 in para 6 below.

6. The requirement of subsidy of the current year FY 2017-18 without considering the impact of Industrial subsidy mentioned in para 4 and para 5 above will be as follows:

Particulars	**Amount (₹ Crore)**
Subsidy on account of Agricultural Supply (AP)	5976.82
Subsidy on account of free supply up to 200 units per month to SC DS and Non-SC BPL DS consumers with a connected load up to 1 kW	1209.04
Subsidy for Electricity Concession of 200 units per month to Other Backward Class DS consumers with sanctioned load up to 1 kW	707.98
Subsidy for consumers under Freedom Fighters category	0.83
Subsidy for new / prospective industry under Progressive Punjab Summit, 2015 Medium Supply Large Supply	 16.22 97.09
Total subsidy payable during FY 2017-18	**8007.98**

7. The Commission has determined shortfall of payment of subsidy of ₹2909.42 crore by the Government to PSPCL up to FY 2016-17. Therefore, subsidy of ₹10917.40 crore is payable by GoP to PSPCL in the year 2017-18. The subsidy of ₹10917.40 crore is required to be paid in advance in 12 monthly instalments from April, 2017 to July, 2017 @ ₹909.79 crore per month and @ ₹909.78 crore per month from August, 2017 to March, 2018.

8. The subsidy payable by GoP on account of levy of Fuel Cost Adjustment (FCA) surcharge, if any, will be in addition to the amount worked out in para 8 above.

GoP may kindly confirm its commitment to pay the subsidies as mentioned above.

Yours sincerely,

(Rajiv Bhatia)

Shri Karan Avtar Singh, IAS
Chief Secretary to Govt. of Punjab,
Chandigarh.

Endst. No. PSERC/MRF/T-198/1034 Dated: 20-9-2017

A copy is forwarded to:
The Principal Secretary to Government of Punjab, Department of Power (Energy Branch), Civil Secretariat-2, Sector-9, Chandigarh.

Secretary

APPENDIX-IV

GOVERNMENT OF PUNJAB
DEPARTMENT OF POWER
(ENERGY BRACH)

To

The Secretary,
Punjab State Electricity Regulatory Commission,
SCO No. 220-21, Sector-34A,
Chandigarh.

Memo No.11/24/2013-PE2(PF-1)/ 3382
Dated Chandigarh the 17-10-2017

Subject:- **Aggregate Revenue Requirements (ARR) for the Multi Year Tariff (MYT) for Control Period from FY 2017-18 to FY 2019-20 of PSPCL and PSTCL – Payment of Subsidy by the State Government for FY 2017-18.**

Please refer to your D.O.No.PSERC/M&P/T-198/1034 dated 20.09.2017 on the subject cited above.

In this regard, the State Government has decided:

i. To continue to provide free power to the agriculture sector and therefore agrees to support PSPCL to the extent of Rs.5976.82 Crore as subsidy on account of agricultural supply.

ii. To pay subsidy on account of free supply up to 200 units per month to SC DS, Non-SC BPL DS and BC DS consumers with a connected load up to 1KW subject to the condition that subsidy on account of free supply of 200 units per month with a connected load up to 1KW shall be provided only to BPL SC DS, BPL Non-SC DS and BPL Backward classes consumers only provided that their total consumption in the preceding years has not been more than 3000 units per annum, meaning thereby that, household shall be entitled to the subsidy in the current year only if its total consumption in the preceding year has been less than 3000 units per annum. This will be effective from November 1st, 2017.

iii. To pay subsidy for consumers under Freedom Fighters category of 300 Units per month with sanctioned load of 1 KW.

iv. Further, the state shall continue to provide power at the rate of Rs.4.99 per unit to all new/prospective industries that have applied to Invest Punjab after 31st October, 2015 and to that extent the state shall provide Rs.16.22 Crore for Medium supply and Rs.97.09 Crore for Large Supply industries.

Further, the Council of Ministers in its meeting held on 16.10.2017 has approved to provide power at a variable tariff of Rs.5.00 per KVAH for five years with no increase in the existing fixed electricity tariff. The variable electricity tariff shall be applicable to all manufacturing and IT & ITES industries. The State shall provide the necessary budgetary support to PSPCL for providing power at this subsidized rate to the industry.

The concurrence of Finance Department has also been obtained vide their I.D. No. 10/34/2016-2FE4/1087067/1 dated 17.10.2017.

17/10/17
Superintendent

GOVERNMENT OF PUNJAB
DEPARTMENT OF POWER
(ENERGY BRACH)

To

The Secretary,
Punjab State Electricity Regulatory Commission,
SCO No. 220-21, Sector-34A,
Chandigarh.

Memo No.2/5/2015-PE2/ 6161
Dated Chandigarh the 17/10/17

Subject:- **Aggregate Revenue Requirements (ARR) for the Multi Year Tariff (MYT) for Control Period from FY 2017-18 to FY 2019-20 of PSPCL and PSTCL – Payment of Subsidy by the State Government for FY 2017-18.**

In continuation of this office Memo No.112/4/2013-PE2 (PF-1)/ 3382 dated 17.10.2017 on the subject cited above.

2. In this regard, it is intimated that in the above letter inter-alia it is written "To pay subsidy on account of free supply up to 200 units per month to SC DS, Non-SC BPL DS and BC DS consumers with a connected load up to 1KW subject to the condition that subsidy on account of free supply of 200 units per month with a connected load up to 1KW shall be provided only to BPL SC DS, BPL Non-SC DS and BPL Backward classes consumers only provided that their total consumption in the preceding years has not been more than 3000 units per annum, meaning thereby that, household shall be entitled to the subsidy in the current year only if its total consumption in the preceding year has been less than 3000 units per annum. This will be effective from November 1st, 2017" that may be read as "To pay subsidy on account of free supply up to 200 units per month to SC DS, Non-SC BPL DS and BC DS consumers with a connected load up to 1KW subject to the condition that subsidy on account of free supply of 200 units per month with a connected load up to 1KW shall be provided only to SC DS, BC DS and Non SC BPL

DS consumers only provided that their total consumption in the preceding years has not been more than 3000 units per annum, meaning thereby that, household shall be entitled to the subsidy in the current year only if its total consumption in the preceding year has been less than 3000 units per annum. This will be effective from November 1st, 2017".

3. It is further intimated that SP consumers may be charged at a variable tariff of Rs.5.00 per KWH for five years with no increase in the existing fixed electricity tariff. For other MS and LS consumers, it may be read as Rs.5.00 per KVAH as per our earlier letter dated 17.10.2017.

4. It is further intimated that SP consumers may be charged as per the existing tariff of Rs.4.99 per KWH for the year 2017-18. Subsidy in lieu of this shall be paid by the State Government.

17/10/17
Superintendent