

**NO. 49 of 2022 FILED BY PUNJAB STATE POWER CORPORATION LIMITED FOR  
BUSINESS PLAN INCLUDING CAPITAL INVESTMENT PLAN FOR MYT  
CONTROL PERIOD FROM FY 2023-24 TO FY 2025-26.**

**PRESENT:** Sh. Viswajeet Khanna, Chairperson  
Sh. Paramjeet Singh, Member

Date of Order: 11<sup>th</sup> January, 2023

**ORDER**

The Punjab State Electricity Regulatory Commission (Commission), in exercise of powers vested in it under the Electricity Act, 2003 (Act), passes this order for Business Plan including Capital Investment Plan for MYT Control Period from FY 2023-24 to FY 2025-26 for Generation and Distribution Businesses of Punjab State Power Corporation Limited (PSPCL). The Commission has examined the petition filed by PSPCL, facts presented by PSPCL in its various submissions and the documents adduced on the record.

**1.1 Background**

PSPCL has submitted that it is vested with the function of generation and distribution of electricity in the State of Punjab as notified by the Government of Punjab vide Notification No. 1/9/08-EB(PR) 196 dated April 16, 2010. As per the transfer scheme, the Govt. of Punjab has segregated the Transmission Business of erstwhile Punjab State Electricity Board and PSPCL was left with the Distribution, Generation and allied activities of the erstwhile PSEB. PSPCL is operating under the aegis of Electricity Act 2003 and the regulations notified by the Punjab State Electricity Regulatory Commission (PSERC). The Commission has issued the PSERC (Terms and Conditions of Determination of Generation, Transmission, Wheeling and Retail Supply Tariff) Regulations, 2019 (hereinafter referred to as "PSERC MYT Regulations, 2019") in exercise of powers conferred on it by Section 61 read with Section 181(2) of the Electricity Act 2003 (No. 36 of 2003) wherein tariff is being determined on yearly basis.

**1.2 Business Plan including Capital Investment Plan for MYT Control Period from FY 2023-24 to FY 2025-26 for Generation and Distribution businesses of PSPCL**

As per the PSERC MYT Regulations – 2019, PSPCL has filed the present Petition for

Approval of Business Plan along with its Capital Investment Plan for the MYT control period i.e. FY 2023-24 to FY 2025-26. PSPCL has submitted Regulatory formats with data and information for its Generation and Distribution Business. The Petitioner has prayed to:

- a) Admit the Petition seeking approval of Business Plan including Capital Investment Plan for its Generation and Distribution business for Control Period from FY 2023-24 to FY 2025-26 in accordance with Regulation 9 of the PSERC MYT Regulations, 2019;
- b) Approve the Business Plan including Capital Investment Plan for its Generation Business for Control Period from FY 2023-24 to FY 2025-26 as proposed by the Petitioner in the Petition;
- c) Approve the Business Plan including Capital Investment Plan for its Distribution Business for Control Period from FY 2023-24 to FY 2025-26 as proposed by the Petitioner in the Petition;
- d) Condone any inadvertent omissions/errors/shortcomings and permit PSPCL to add/change/modify/alter this filing and make further submissions as may be required during the course of these proceedings;
- e) Pass such Order, as the Commission may deem fit and appropriate keeping in view the facts and circumstances of the case submitted by the Petitioner.

**1.3** The petition was admitted vide Order dated 08.09.2022 and PSPCL was directed to publish a public notice inviting objections/suggestions from the general public and stakeholders. PSPCL was directed to provide additional information/clarification as mentioned in the Order and it was further directed that, the petition, the additional information provided by PSPCL as well as the objections received in response to the public notice be also uploaded on the website of the Commission as well as that of PSPCL. In response to the Order dated 08.09.2022, PSPCL submitted the information vide memo No. 604 dated 15.09.2022.

**1.4** Further information/clarification was sought vide Order dated 29.09.2022 and PSPCL submitted the information vide memo No. 659 dated 12.10.2022. The information submitted by PSPCL was still incomplete and PSPCL was directed to submit information/clarification vide Order dated 27.10.2022. In response to the Order dated 27.10.2022, PSPCL submitted information vide memo No. 703 dated 04.11.2022. After hearing the matter, Order was reserved vide Order dated 10.11.2022.

**1.5 Objections & Public Hearing:**

The Commission directed PSPCL vide Order dated 08.09.2022 to publish a public notice inviting Objections/Suggestions from the general public/stakeholders. A public notice to this effect was published in various newspapers i.e. The Tribune (English), Ajit (Punjabi), Punjab Kesari (Hindi) on 13.09.2022, Chardikala (Punjabi) and Punjab Times (Punjabi) on 14.09.2022. The relevant correspondence between the Commission and PSPCL was also uploaded on the website of the Commission. No objection was received in response to the public notice. The Public Hearing was held on 29.09.2022 at 11 AM in the office complex of the Commission however, nobody appeared in the public hearing from the public.

**1.6** The Commission has notified the Punjab State Electricity Regulatory Commission (Terms and Conditions for Determination of Generation, Transmission, Wheeling and Retail Supply Tariff) Regulations, 2022, vide notification dated 27.10.2022. Accordingly, the Commission has approved the Business Plan and Capital Investment Plan for 3<sup>rd</sup> MYT Control Period (FY 2023-24 to FY 2025-26) in line with the PSERC MYT Regulations, 2022.

**1.7** 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 to present their views.



# Chapter 2–Business Plan

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## 2.1 Background

PSPCL, in its Business Plan has submitted the projections for energy demand/ requirement viz-a-viz availability, T&D loss trajectory and Power Purchase plan for the third Control Period, i.e. from FY 2023-24 to FY 2025-26. The Commission has analyzed the same in this chapter.

## 2.2 Energy Demand (Sales)

### 2.2.1 Sales within the State

#### **PSPCL's Submissions:**

PSPCL has projected the number of consumers, connected load and sales based on the provisional figures of FY 2021-22. It has used 3 to 5 years Compound Annual Growth Rate (CAGR) on previous year sales for the forecast of sales for the 3<sup>rd</sup> Control Period.

PSPCL submitted that Energy sales of domestic consumer category had increased significantly in the last three years due to introduction of online citizen services, implementation of Feeder Sanitisation Scheme and extensive vigilance drive. However, most of the urban and rural areas have now been covered under these schemes and therefore, a moderate growth is expected in the 3<sup>rd</sup> MYT Period. PSPCL has considered CAGR of 5 Years for projecting the energy sales in the ensuing years.

PSPCL further submitted that a major thrust is being given to timely release of HT Industry connections. After introduction of ToD Tariff, a major portion of Open Access sales has shifted to the Utility. Keeping in view the load growth of HT industry, 5-year CAGR is considered for projecting HT Industry sales in the ensuing years of the MYT Period.

PSPCL has also submitted that agriculture sector sales are attributable to the ground water table, strength of monsoons and rapid urbanisation. In the ensuing years, PSPCL has planned to release more AP Tube well connections, therefore the growth rate based on the last 3-years CAGR has been considered to project sales for the AP Category.

- a) The sales projections for the 3<sup>rd</sup> Control Period alongwith the CAGR considered for each category is given in the following table:

**Table 1: Total Energy Sales Projections submitted by PSPCL (MkWh)**

Sr. No.	Consumer Category	FY 2021-22	CAGR Considered	3 <sup>rd</sup> Control Period		
				FY 2023-24	FY 2024-25	FY 2025-26
I	II	III	IV	VI	VII	VIII
1.	Domestic	14538	2.50%	15274	15656	16048
2.	Commercial	3614	3.00%	3834	3949	4067
3.	Small Supply	971	6.39%	1099	1169	1244
4.	Medium Supply	1937	5%	2135	2242	2354
5.	Large Supply	17377	9.35%	20778	22721	24845
6.	Public Lighting	161	0.70%	164	165	166
7.	Bulk Supply	642	2.10%	669	683	697
8.	Railway Traction	3	0.00%	3	3	3
9.	AP Consumption	12533	2%	13039	13300	13566
10.	AP High technology/High Density farming	1	-	1	2	2
11.	Compost/ Solid waste Management Plants for Municipalities/ Urban Local Bodies	226	-	226	226	226
12.	Golden Temple	8	-	8	8	8
13.	Start-up power	186	-	205	215	226
14.	Temporary Supply –DS & NRS	211	-	232	244	256
15.	Temporary Supply -SP, MS and LS	33	-	37	39	41
	<b>Total Energy Sales</b>	<b>52441</b>		<b>57704</b>	<b>60620*</b>	<b>63747*</b>

*\*PSPCL in its Petition has submitted sales figures of 60620 MU for FY 2024-25 and 63747 MU for FY 2025-26 while the actual calculation works out to 60622 MU and 63749 MU.*

- b) The projections for number of consumers for the 3<sup>rd</sup> Control Period as submitted by PSPCL is given in the following table:

**Table 2: Projections for number of consumers submitted by PSPCL**

Sr. No.	Consumer Category	Number of Consumers		
		FY 2023-24	FY 2024-25	FY 2025-26
I	II	III	IV	V
1.	Domestic	78,55,057	80,69,926	82,90,672
2.	Commercial	12,47,086	12,81,830	13,17,542
3.	Small Supply	99,093	1,01,520	1,04,006
4.	Medium Supply	33,859	35,111	36,410
5.	Large Supply	10,321	10,800	11,303
6.	Others	22,344	22,752	23,168
7.	Agriculture Pumpsets	14,44,946	14,73,845	15,03,322
	<b>Grand Total</b>	<b>1,07,12,706</b>	<b>1,09,95,784</b>	<b>1,12,86,423</b>

- c) The projections for connected load for the 3<sup>rd</sup> Control Period as submitted by PSPCL is given in the following table:

**Table 3: Projections for connected load submitted by PSPCL**

(kW)

Sr. No.	Consumer Category	Connected Load		
		FY 2023-24	FY 2024-25	FY 2025-26
1.	Domestic	1,49,57,227	1,55,12,675	1,60,88,751
2.	Commercial	48,78,862	50,61,425	52,50,819
3.	Small Supply	11,99,293	12,37,364	12,76,644
4.	Medium Supply	20,94,317	21,46,119	21,99,203
5.	Large Supply	77,79,159	80,71,251	83,74,312
6.	Others	7,74,355	8,13,929	8,65,856
7.	Agriculture Pumpsets	1,14,85,499	1,20,59,774	1,26,62,762
	<b>Total</b>	<b>4,31,68,712</b>	<b>4,49,02,537</b>	<b>4,67,18,347</b>

**Commission's Analysis:**

Based on the approved True-up sales of FY 2016-17 to FY 2020-21 and projected sales of FY 2021-22 as submitted by PSPCL, the Commission has worked out the CAGR as under:



**Table 4: Summary of historical sales considered for projections**

Sr. No.	Category	Trued-up Sales					As submitted by PSPCL
		FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
I	II	III	IV	V	VI	VII	VIII
1	Domestic	13080	13321	13223	13551	15065	14538
2	Commercial (NRS)	3802	2883	3988	3714	3234	3614
3	Small Supply	984	800	806	1158	807	971
4	Medium Supply	2215	2087	2599	2978	2078	1937
5	Large Supply	11115	13469	14055	14129	13286	17377
6	Street Lighting	192	175	158	140	210	161
7	Bulk Supply	661	645	603	716	620	642
8	Railway Traction	183	237	221	181	-	3
9	AP High technology		-	-	0	0	1
10	Compost/ Solid waste Management		-	-	17	255	226
11	Charitable Hospitals		-	-	0	-	-
12	Golden Temple		-	-	7	6	8
13	Start-up power		-	150	185	136	186
14	Temporary Supply - DS& NRS		-	123	136	136	211
15	Temporary Supply - SP, MS and LS		-	-	5	47	33
<b>16</b>	<b>Total Metered Sales</b>	<b>32232</b>	<b>33617</b>	<b>35926</b>	<b>36917</b>	<b>35880</b>	<b>39908</b>
17	AP Consumption	11546	11850	10836	11468	12817	12533
<b>18</b>	<b>Total Sales within State</b>	<b>43778</b>	<b>45467</b>	<b>46762</b>	<b>48385</b>	<b>48697</b>	<b>52441</b>

Based on above sales data, CAGR worked out for different categories of consumers are as under:

**Table 5: Historical CAGR for sales**

Sr. No.	Category	CAGR				
		5 year	4 year	3 year	2 year	1 year
I	II	III	IV	V	VI	VII
1.	Domestic	2.14%	2.21%	3.21%	3.58%	-3.50%
2.	Non-Residential Supply/Commercial Supply	-1.01%	5.81%	-3.23%	-1.36%	11.75%
3.	Small Power	-0.26%	4.96%	6.40%	-8.43%	20.32%
4.	Medium Supply	-2.65%	-1.85%	-9.33%	-19.35%	-6.79%
5.	Large Supply	9.35%	6.58%	7.33%	10.90%	30.79%
6.	Public Lighting	-3.46%	-2.06%	0.63%	7.24%	-23.33%
7.	Bulk Supply & Grid Supply	-0.58%	-0.12%	2.11%	-5.31%	3.55%
8.	Railway Traction	-56.05%	-66.46%	-76.15%	-87.13%	
9.	Agriculture	1.65%	1.41%	4.97%	4.54%	-2.22%

Considering factors like market growth rate, industrial development in the State, increasing consumer awareness and DSM initiatives/ use of efficient home appliances etc., the Commission is of the view that 3-year CAGR depicts a more reasonable trend for estimating the sales growth. Accordingly, the Commission has considered 3 year CAGR for projecting the sales for the 3<sup>rd</sup> MYT Control period. However, it is observed that due to COVID-19 pandemic the domestic sales has increased in the COVID years and the 3 year CAGR may not give an accurate projection for the growth in domestic sales, hence, for domestic category CAGR as submitted by PSPCL in the petition has been considered. For categories where the calculated CAGR is negative, the Commission has considered the CAGR as submitted by PSPCL in its petition. Also, since Indian Railways has been granted open access for Railway Traction load, their CAGR has been considered as NIL. For AP consumption, the CAGR as submitted by PSPCL has been considered. Accordingly, the Commission approves the estimates for energy sales for the 3<sup>rd</sup> Control Period as shown in the following table:



**Table 6: Forecast for sales approved by the Commission for 3<sup>rd</sup> MYT Control Period**

**(MkWh)**

Sr. No.	Consumer Category	Sales Projections submitted by PSPCL for FY 2021-22	CAGR considered	Projected Revised Estimates	Approved by the Commission		
				FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
1.	Domestic	14538	2.50%	14901	15274	15656	16047
2.	Commercial (NRS)	3614	3.00%	3722	3834	3949	4068
3.	Small Supply	971	6.40%	1033	1099	1170	1245
4.	Medium Supply	1937	5.00%	2034	2136	2242	2354
5.	Large Supply	17377	7.33%	18650	20017	21484	23059
6.	Street Lighting	161	0.63%	162	163	164	165
7.	Bulk Supply	642	2.11%	656	669	684	698
8.	Railway Traction	3	0.00%	3	3	3	3
9.	AP High technology	1	0.00%	1	1	1	1
10.	Compost/ Solid waste Management	226	0.00%	226	226	226	226
11.	Golden Temple	8	0.00%	8	8	8	8
12.	Start-up power	186	0.00%	186	186	186	186
13.	Temporary Supply - DS& NRS	211	0.00%	211	211	211	211
14.	Temporary Supply -SP, MS and LS	33	0.00%	33	33	33	33
15.	<b>Total Metered Sales</b>	<b>39908</b>		<b>41826</b>	<b>43860</b>	<b>46017</b>	<b>48304</b>
16.	AP Consumption	12533	2.00%	12784	13039	13300	13566
17.	<b>Total Sales within State</b>	<b>52441</b>		<b>54610</b>	<b>56899</b>	<b>59317</b>	<b>61870</b>

## 2.2.2 Common Pool/Outside State Sales

### PSPCL's submission:

PSPCL has considered 309 MkWh and 54 MkWh towards sale to common pool and outside state sales respectively for each year of the 3<sup>rd</sup> Control Period.

### Commission's Analysis:

The Commission notes that it has approved actual sales of 300.63 MkWh and 69.86MkWh during the true-up of FY 2020-21. Further, for APR of FY 2021-22

and ARR of FY 2022-23 the Commission had approved 301 MWh and 70 MWh towards sale to the common pool and outside state sales respectively in the Tariff Order for FY 2022-23. Accordingly, the Commission decides to accept the figures for Common Pool sales and Outside State sales as submitted by PSPCL for the 3<sup>rd</sup> Control period.

### **2.3 Distribution Loss Trajectory**

#### **PSPCL's Submissions:**

PSPCL has projected loss trajectory of 12.30%, 12.20% and 12.10% for FY 2023-24, FY 2024-25 and FY 2025-26 respectively.

In response to the Commission's query regarding projection of higher distribution loss trajectory in the 3<sup>rd</sup> MYT Control Period as compared to that approved by the Commission in the 2<sup>nd</sup> MYT Control Period, PSPCL, vide memo no. 604/ARR/Dy. CAO/264/CIP-BP/Deficiencies/Vol-1 dated 15.09.2022, has submitted that it has added 2.02 lakhs consumers in FY 2020-21, 2.34 lakhs consumers in FY 2019-20 and 2.18 lakhs consumers in FY 2018-19 which are high numbers. Despite the increasing number of consumers in the LT network, PSPCL has been able to consistently reduce losses in recent years. PSPCL is committed to meeting the targets set by the Commission and is working progressively across multiple areas to contain losses. The reduction in distribution losses is a significant achievement and can be appreciated.

Reduction path of 0.10% for each year of the Control Period has been considered as it provides a realistic distribution loss target figures based on historical data.

PSPCL further submitted that the RDSS scheme has been approved by the Government of Punjab. Reports are being finalized which may result in a further revision of PSPCL's loss trajectory in line with the loss targets foreseen under the RDSS programme. In light of the above, PSPCL has requested the Commission to approve PSPCL's proposed course of distribution loss targets for the control period.

Accordingly, PSPCL has proposed the T&D loss trajectory for the 3<sup>rd</sup> Control Period as follows:

**Table 7: T&D loss trajectory submitted by PSPCL**

<b>Sr. No.</b>	<b>Particulars</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>	<b>FY 2025-26</b>
<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>V</b>
1.	T&D Loss Trajectory %	12.30%	12.20%	12.10%

**Commission's Analysis:**

The Commission observes that, in the Tariff order for FY 2020-21, (ARR projections for 2<sup>nd</sup> MYT Control period of FY 2020-21 to FY 2022-23), the Commission had approved the expected distribution loss targets during the 2<sup>nd</sup> Control Period as 11.24%, 10.94% and 10.64% for FY 2020-21, FY 2021-22 and FY 2022-23 respectively on the basis of distribution loss target of 11.54% approved in APR for FY 2019-20. However, in the Tariff Order for FY 2021-22 the Commission observed that despite significant capex allowed by the Commission towards various schemes of network strengthening, augmentation and loss reduction etc., PSPCL has not been able to bring down its losses to the desired target levels. The Commission further observed that considering actual distribution loss of 14.35% for FY 2019-20 as a baseline figure for setting the loss trajectory for the 2<sup>nd</sup> MYT period would reward PSPCL for its inefficiency of not being able to bring its losses down to the target levels and it would be unjust to pass on the impact of increased losses in FY 2019-20 to the consumers of PSPCL. Accordingly, the Commission, in the Tariff order for FY 2021-22, considered and approved the distribution loss target of 12.94% (based on actuals of FY 2018-19) for FY 2020-21. Further, considering the loss reduction trajectory of 0.30% approved in the Business Plan and the Tariff Order for FY 2020-21, the Commission had set the target for distribution loss at 12.34% and 12.04% for FY 2021-22 and FY 2022-23 respectively.

In the Tariff Order for FY 2022-23, the Commission, while doing the Truing up of FY 2020-21, had worked out the actual losses of 13.43% as against the target loss of 12.94% while retaining the loss trajectory of 12.34% and 12.04% for APR of FY 2021-22 and ARR of FY 2022-23 respectively.

Regulation 8 of the MYT Regulations, 2022 specifies as under:



## “8. MYT APPROACH

### 8.1. Baseline Values

*(a) The baseline values for the Control Period shall be determined by the Commission and the projections for the Control Period shall be based on these figures; (b) The baseline values shall be inter-alia based on figures approved by the Commission in the past, last three years' Audited/Provisional Accounts, estimate of the expected figures for the relevant year, industry benchmarks/norms and other factors considered appropriate by the Commission: Provided further that the Commission may change the values for Base Year and consequently the trajectory of parameters for the Control Period, considering the actual figures from audited accounts”*

The Commission is of the view that actual losses for the year FY 2022-23 should form the basis for setting of target loss figures for the 3<sup>rd</sup> Control Period. However, actual losses for FY 2022-23 shall be available only upon completion of True-up of FY 2022-23 (to be carried out in FY 2024-25). Therefore, the Commission agrees to the projected loss trajectory of 12.30% for FY 2023-24 i.e. for the first year of the 3<sup>rd</sup> Control period as submitted by PSPCL. However, in view of approval of the substantially higher amount of capital investment for the 3<sup>rd</sup> Control period for various schemes of network strengthening, augmentation and loss reduction etc. the Commission feels and decides to approve the trajectory of loss reduction of 0.20% in distribution losses for each of the subsequent years i.e. FY 2024-25 and FY 2025-26

Therefore, the distribution loss trajectory provisionally approved by the Commission is shown in the following table:

**Table 8: Distribution loss trajectory provisionally approved by the Commission**

Sr. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26
1.	<b>Distribution loss trajectory* (%)</b>	12.30%	12.10%	11.90%

*\*The distribution loss trajectory shall be subject to revision based on actual figures for FY 2022-23 true up but will not be considered if higher than the approved trajectory. Also, the reduction trajectory of 0.20% shall remain the minimum benchmark subject to actual during true up if achievement is better than 0.20%.*

## 2.4 Energy Requirement

The energy requirement for FY 2023-24 to FY 2025-26 projected by PSPCL for the 3<sup>rd</sup> Control Period is shown in the following table:

**Table 9: Energy Requirement submitted by PSPCL**

(MkWh)

Sr. No.	Consumer Category	FY 2023-24	FY 2024-25	FY 2025-26
I	II	III	IV	V
1.	Metered Sales	44665	47320	50182
2.	AP Consumption	13039	13300	13566
3.	<b>Total Sales within State</b>	57704	60620	63747
4.	Distribution Loss	%	12.30%	12.20%
		MkWh	8090	8421
	Transmission Loss	%	2.44%	2.44%
		MkWh	1646	1727
5	<b>Sub-Total</b>	<b>67440</b>	<b>70767</b>	<b>74333</b>
6	Sale to Common Pool	309	309	309
7	Sale to Outside State	54	54	54
8	Add: Royalty to HP from Shanan	52	52	52
9	Add: Share from RSD to HP	69	69	69
10	<b>Energy Requirement at State Periphery*</b>	<b>67925</b>	<b>71253</b>	<b>74819</b>

*\*Note: PSPCL in its Petition has submitted sales figures of 60620 MU for FY 2024-25 and 63747 MU for FY 2025-26 while the actual calculation works out to 60622 MU and 63749 MU. Further, PSPCL has submitted PSPCL has considered Royalty to HP from Shanan and Share from RSD as part of Energy Requirement and included the same in its hydro generation.*

The total energy requirement being approved by the Commission for the third Control Period is submitted in the following table:

**Table 10: Energy Requirement approved by the Commission**

**(MkWh)**

Sr. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26
I	II	III	IV	V
1	Metered Sales (Refer Table 6)	43860	46017	48304
2	Sales to Agriculture (Refer Table 6)	13039	13300	13566
3	<b>Total Sales within the State</b>	<b>56899</b>	<b>59317</b>	<b>61870</b>
4	<b>Distribution Losses</b>	<b>12.30%</b>	<b>12.10%</b>	<b>11.90%</b>
	<b>Distribution Losses MU</b>	7980	8165	8357
5	<b>Input Energy Required</b>	<b>64879</b>	<b>67482</b>	<b>70227</b>
6	<b>NRSE Power available at 66/11 kV</b>	<b>2421</b>	<b>3140</b>	<b>3223</b>
7	<b>Input Energy Required at Transmission periphery</b>	<b>62458</b>	<b>64342</b>	<b>67004</b>
8	Transmission Loss (%)	<b>2.42%</b>	<b>2.40%</b>	<b>2.38%</b>
	Transmission Loss	1549	1659	1634
9	<b>Total Energy Input Required (excluding Gen./RE power available at 66/11 kV)</b>	<b>64007</b>	<b>69141</b>	<b>71861</b>
10	<b>Total Energy Input Required including RE</b>	<b>66428</b>	<b>72281</b>	<b>75084</b>
11	Sales to Common pool consumers	<b>309</b>	<b>309</b>	<b>309</b>
12	Outside State Sales	<b>54</b>	<b>54</b>	<b>54</b>
13	<b>Total Energy Requirement at State periphery</b>	<b>66737</b>	<b>69504</b>	<b>72224</b>

*\*Note: The Commission has reduced royalty to HP from Shanana and share from RSD to HP from the total hydel generation (Table 12) hence, the same has also not been considered in the energy requirement.*

## 2.5 PSPCL's Own Generation

### 2.5.1 Hydel Generation

#### PSPCL's submission:

PSPCL submitted that it has considered the actual generation for the past years for projecting generation from Hydro generating Stations. PSPCL has also considered Royalty to be paid to HP from Shanana and share from RSD to HP. Generation from Shahpur Kandi Project has been considered from FY 2024-25 onwards.



Total Hydel Generation has been projected as under:

**Table 11: Generation of Hydro Generating Stations submitted by PSPCL**

(MkWh)

Sr. No	Plant	FY 2023-24	FY 2024-25	FY 2025-26
I	I	III	IV	V
1.	Shanan HEP	490.00	490.00	490.00
2.	UBDC			
	Stage 1	147.00	153.00	148.00
	Stage 2	228.00	230.00	215.00
3.	MHP			
	Stage-I	1080.00	1080.00	1080.00
	Stage-II	78.00	78.00	78.00
4.	Anandpur Sahib Hydel Project	525.00	543.00	531.00
5.	Ranjit Sagar Project	1509.00	1509.00	1509.00
6.	Micro Hydel Projects	4.00	4.00	4.00
7.	Shahapur Kandi Project	0.00	747.90	1048.09
<b>8.</b>	<b>Total Gross Generation*</b>	4061.00	4835.00	5103.00
9.	<i>Less: Auxiliary Consumption</i>	27.91	31.72	33.07
10.	<i>Less: Royalty to HP from Shannan</i>	52.00	52.00	52.00
11.	<i>Less: Share from RSD to HP</i>	69.41	69.41	69.41
12.	<i>Less: Share from RSD to J&amp;K</i>			
<b>13.</b>	<b>Total Net Generation</b>	4155.00	4925.00	5192.00
	<b>PSPCL share from BBMB</b>			
14.	PSPCL share excluding common poolshare (Net)			
15.	Add Common pool share			
<b>16.</b>	<b>Net share from BBMB</b>	4119.00	4307.00	4510.00
<b>17.</b>	<b>Total hydro availability (Net) (Own+BBMB) (13+16)</b>	8274.00	9232.00	9702.00

\*Note: PSPCL has shown less (reduced) Royalty to HP from Shanan as 52 MU and Share from RSD to HP as 69.41 MU. However, in the calculation PSPCL has actually added the same to gross generation resulting in double accounting of the same.

#### Commission's Analysis:

The Commission accepts the gross Energy Availability from own hydel generating stations as per PSPCL's submission. However, normative Transformation loss @0.5% and Auxiliary consumption @0.5% for RSD & UBDC stage-I (having static exciters) and @0.2% for others have been considered.

The Commission has also considered the Royalties to HP from Shanan and share from RSD to HP as per PSPCL's submission. Energy Availability from BBMB stations (Bhakra, Dehar and Pong and the Common Pool Share) has been considered as per PSPCL's submission.

Total Hydel Generation approved by the Commission is shown in the following table:

**Table 12: Generation from PSPCL's Hydro Generating Stations approved by the Commission**

(MkWh)

Sr. No.	Hydel Stations		FY 2023-24	FY 2024-25	FY 2025-26
I	II		III	IV	V
1	Shanan		490	490	490
2	UBDC	Stage I	147	153	148
3	UBDC	Stage II	228	230	215
4	RSD		1509	1509	1509
5	MHP	Stage I	1080	1080	1080
6	MHP	Stage II	78	78	78
7	ASHP		525	543	531
8	Micro Hydel		4	4	4
9	Shahpur Kandi		0	748	1048
<b>10</b>	<b>Gross own hydro</b>		<b>4061</b>	<b>4835</b>	<b>5103</b>
11	Less: Auxiliary consumption and transformation loss		33	39	41
12	Less HP Royalty in Shanan		69	69	69
13	Less HP share in RSD		52	52	52
<b>14</b>	<b>Total own generation (Net) (10-11-12-13)</b>		<b>3907</b>	<b>4675</b>	<b>4941</b>
<b>15</b>	<b>PSPCL share from BBMB</b>		<b>4119</b>	<b>4307</b>	<b>4510</b>
<b>16</b>	<b>Total hydro availability (Net) (Own+BBMB) (14+15)</b>		<b>8026</b>	<b>8982</b>	<b>9451</b>

*\*Note: The Commission has reduced royalty to HP from Shanan and share from RSD to HP from the total hydel generation hence, the same has also not been considered in the energy requirement.*

## 2.5.2 Thermal Generation

### PSPCL's submission:

PSPCL submitted that it has been considering its own Thermal Generating Stations under Merit Order Dispatch. Energy Charge Rate (ECR) for each year of the Control Period has been estimated based on the performance parameters, GCV and price of fuels. The same ECR has been considered under Merit Order Dispatch. Accordingly, PSPCL has projected the Gross Generation and Net Generation for FY 2023-24 to FY 2025-26 as shown in the following table:

**Table 13: Generation from PSPCL's own Thermal Generating Stations submitted by PSPCL (MkWh)**

Sr. No.	Plant	Gross Generation			Net Generation		
		FY 2023-24	FY 2024-25	FY 2025-26	FY 2023-24	FY 2024-25	FY 2025-26
I	II	III	IV	V	VI	VII	VIII
1.	GGSSSTP	2300	2337	2568	2105	2138	2350
2.	GHTP	2585	2613	2701	2365	2391	2471
3.	<b>Total</b>	4885	4950	5269	4470	4529	4821

PSPCL further submitted that this generation is as per Generation Plan. However, the energy purchase from its Own Thermal Generating Stations shall be as per Merit order principle.

### Commission's Analysis:

The Commission observes that PSPCL has surplus energy available from various tied up sources including Central Generating Stations, IPPs, private generators and traders. PSPCL has to surrender the excess energy in order to manage demand and maintain energy balance. The Commission in its previous Tariff Orders has been consistently directing PSPCL that the surrendering of energy should be as per merit order dispatch from all the thermal generating stations, including PSPCL's own generating stations. Having considered the generation plan submitted by PSPCL, the Commission is of the view that energy purchase from PSPCL's own Thermal Generating Stations should be strictly



dependent on Merit order dispatch norms, which is a real time phenomenon and cannot be worked out accurately at this stage. Thus, for the purpose of Business Plan, the Commission has accepted the net generation as submitted by PSPCL.

## 2.6 Energy Balance

### PSPCL's Submissions:

The Energy Balance proposed by PSPCL for the 3<sup>rd</sup> Control Period is as given below:

**Table 14: Energy Balance Proposed by PSPCL**

(MkWh)				
Sr. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26
I	II	III	IV	V
1	Energy Requirement at State's Periphery	67925	71253	74819
2	Net thermal generation	4470	4529	4821
3	Net Hydel Generation	4033	4804	5070
4	Availability from BBMB including Common Pool Share (Net)	4119	4307	4510
5	Net Power Purchase (1-2-3-4)	55303	57613	60417

### Commission's Analysis:

Details of energy requirement, availability and net purchase including own generation approved by the Commission is shown in the following table:

**Table 15: Energy Balance approved by the Commission for the 3<sup>rd</sup> Control Period**

(MkWh)				
Sr. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26
I	II	III	IV	V
1.	Total Energy requirement (Table 10)	66737	69504	72224
2.	Energy Available			
a.	Hydel (Own +BBMB) (Table 12)	8026	8982	9451
b.	PSPCL's Own Thermal (Table 13)	4470	4529	4821
c.	Total (a+b)	12496	13511	14272
3.	Net Purchase (1-2c)	54241	55993	57952

The balance energy (net) requirement of PSPCL has to be met through purchases from Central Generating Stations and other sources (IPPs, Renewable Power within the State etc.).

The quantum of power approved by the Commission is only for the purpose of power purchase and energy balance. PSPCL needs to carefully plan the best course available to ensure economic purchase of power. Further, PSPCL may also opt for purchase of short/ medium term power in a judicious and economical manner, in case of exigencies or to substitute the high cost power as per the procedures specified in regulations notified by the Commission. PSPCL may also resort to Demand Side Management Practices to maintain its commercial viability.



# Chapter 3 – Capital Investment Plan for Generation Business

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## 3.1 Background

PSPCL has filed separate Capital Investment Plans for its Generation and Distribution Businesses, as required under Regulation 9 of the MYT Regulations 2022. It has further categorized the proposed schemes into Spillover and New Schemes as per Regulation 9.7 of the MYT Regulations 2022 which stipulates as under:

*“The Capital Investment Plan covering the entire MYT Control Period will be submitted in the following two parts:*

- a) Spillover schemes of the previous MYT Control Period (i.e. works / schemes which are under construction or where full payments have not yet been made). All spillover works will be included in this;*
- b) Schemes to be taken up in the order of priority giving the schedule over the full MYT Control Period. In case it is likely to take more than 3 years, the likely date of completion should also be given. This will also include such schemes which were part of the Capital Investment Plan of the previous MYT Control Period but could not be started and which the Applicant considers necessary to take up during the present Control Period.”*

Scheme-wise details submitted by PSPCL and the Commission's views on the same are discussed in the subsequent sections.

## 3.2 Generation Business- Own Thermal Generating Stations

### 3.2.1 Guru Gobind Singh Super Thermal Plant (GGSSTP), Ropar

GGSSTP had an installed capacity of 1260 MW (6 x 210 MW) till 2017. However, Unit 1 and 2 commissioned on 1984 & 1985 respectively, were permanently shut down with effect from 01.01.2018 due to completion of their useful life resulting in the reduction of installed capacity to 840 MW (4 x 210 MW). The Units 3,4,5 and 6



were commissioned on 1988, 1989, 1992 and 1993 respectively. The scheme-wise submission by PSPCL for the 3<sup>rd</sup> Control Period and the Commission's analysis of the same is discussed as follows.

### **Spillover Scheme(s)**

#### **Installation of Flue-gas desulfurization (FGD) on Units 3,4,5 & 6 of GGSSTP, Rupnagar**

##### **PSPCL's Submissions:**

Ministry of Environment, Forest and Climate Change (MOEF&CC), Govt. of India notified the new environment norms for thermal power plants in India vide notification no. 2620 dated 07-12-2015. Subsequently, Central Electricity Authority (CEA) prepared a phasing plan for implementation of new environment norms for thermal power plants by 31-12-2022. Central Pollution Control Board (CPCB), New Delhi advanced the date for implementation of new Environment norms for the thermal power plants falling within 300 KM of National Capital Region (NCR) to 31-12-2019. Meanwhile Ministry of Environment, Forests and Climate Change issued 2<sup>nd</sup> amendment in Environment Protection Act, 1986 & a task force comprising of representatives from MOEF&CC, CPCB, CEA and NTPC was formed to categorize the thermal plants in category 'A', 'B', 'C'. Units of GGSSTP, Ropar were categorized by the task force in category 'C' and a new timeline for installation and commissioning of FGD on all Units of GGSSTP, Ropar has now been fixed as 31-12-2024. The Capital Cost for installation and commissioning, which was originally envisaged as 128.1 Crores in the 2<sup>nd</sup> MYT, has now been revised to Rs 200.1 Crores due to increase in cost of raw material, logistics and other allied expenses. PSPCL submitted that this scheme is expected to be completed by FY 2024-25. The capital investment for this scheme for the 3<sup>rd</sup> Control Period is given in the following table:

**Table 16: Capital Investment proposed by PSPCL for installation of FGD on Units 3,4,5& 6 of GGSSTP**

Rs Cr.

Sl. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
A1	Feasibility Study, Installation & Commissioning of Dry Sorbent Injection Type of Flue Gas Desulphurisation (FGD) on Units 3,4 5 & 6 of GGSSTP, Rupnagar	100.00	95.10	-	195.10

**Commission's Analysis:**

PSPCL vide reply dated 15.09.2022 submitted that the plan for installation and commissioning of Dry Sorbent Injection (DSI) type Flue Gas Desulfurization (FGD) system was planned for FY 2020-21 but due to the outbreak of Covid-19 projects were delayed. Now tender requests have been floated by various GENCOS and consequently the supply chain across India is affected due to bunched demand. The tender request submitted by GGSSTP, Ropar had to be delayed due to the low level of participation from companies. In the last 2-3 years, due to the increase in input costs such as raw materials, logistics and depreciation of the rupee against the US dollar, the cost of FGD plants has increased by 55-60%. As such, the original project cost formerly estimated at Rs 128.1 Crores has now been revised to Rs 200.1 Crore. The projected expenditure related to this program up to the end of FY 2022-23 is Rs 5 Crore while during the 3<sup>rd</sup> MYT the remaining expenditure of Rs 195.1 Crores is projected to be incurred.

Further, vide reply dated 12.10.2022 PSPCL has submitted that since the onset of COVID-19 all the GENCOS in India have encountered the problem of break in supply chain and tender enquiry floated for installation and commissioning of FGDs has got delayed due to poor response. The office of Dy.CE/MM-2, GGSSTP, Ropar vide memo No. 316/RM-2/15 dated 18.04.2022 took up the matter with AGM/Spares & Service Business Group, BHEL, Panchkula to provide the tentative capital cost for installation and commissioning of DSI Type FGD at GGSSTP, Ropar. Keeping in view the current scenario of the power sector due to delay in the supply chain during COVID-19, AGM/Spares & Service Business Group, BHEL, Panchkula responded

vide letter no. BHEL/PKL-ENV-2/245 dated 27.04.2022 and informed that due to increase in cost of raw materials, logistics and weak rupee against dollar during the last 2-3 years, the capital cost of installation and commissioning of FGD has increased by 55-60%. In respect of GGSSTP Ropar it could be in the range of Rs. 198-204 Cr. Keeping in view the reply given by AGM/Spares & Service Business Group, BHEL, Panchkula, the tentative capital cost for installation and commissioning of FGD at GGSSTP, Ropar was escalated from Rs. 128.1 Cr to Rs. 200.1 Cr. The Commission has approved capital investment of Rs. Rs. 95.05 Cr in the 2<sup>nd</sup> MYT Control period including spillover and new schemes vide its Order dated 03.12.2019 in Petition No. 18 of 2019. The Commission in its Order has also observed as under:

*“The Commission understands that the installation of FGD is mandated by the Ministry of Environment, Forest and Climate Change (MoEFCC) for GGSSTP to remain operational beyond 2019. Further, it is observed that the reference price of scheme is taken from NTPC Dadri, where a similar DSI based FGD is being installed in its 840 MW (4\*210 MW) Units. Considering the above, the Commission approves the capital investment of Rs 86.10 Cr. as proposed by PSPCL. However, if PSPCL decides to install FGD on the plant, it is expected that the plant will be operational at least till 2030, considering the significant capital investment being approved...”*

Thus, in view of above submissions of PSPCL, the Commission approves the capital investment of Rs. 195.1 Cr for the 3<sup>rd</sup> MYT Control Period including FGD. However, the Commission directs PSPCL to ensure that useful life of the plant (all four units 3-6) is extended commensurate to the useful life of FGD i.e. till atleast 2030 as per the earlier Order of the Commission referred to above dated 03.12.2019 in Petition No. 18 of 2019.

### **New Schemes**

#### **PSPCL's Submissions:**

The capital investment for new schemes proposed by PSPCL for the 3<sup>rd</sup> Control Period are given in the following table:



**Table 17: Capital Investment proposed by PSPCL for New Schemes of GGSSTP**

S. No.	Particulars	Rs Cr.			Total (MYT)
		FY 2023-24	FY 2024-25	FY 2025-26	
1	Replacement of obsolete conronic-3 (ABB) make of Unit 3 with symphony melody system (ABB make which was earlier installed in Stage-1)	7.09	-	-	7.09
2	Erection, Commissioning & Upgradation of M/S Emerson make obsolete Q-Line Input-output modules for ovation control system of Unit 5 or 6 of GGSSTP, Ropar	10.57	-	-	10.57
3	Upgradation/Migration for replacement of obsolete procontrol P13/42 system of ATRS FSSS, HPBP, STC, APRDS system of either of Unit 5 or 6 of GGSSTP, Ropar	66.67	-	-	66.67
4	Replacement of 15 Nos 48/24V Float Cum Boost Chargers of M/S AFCO make along with SCR Controller Cards fuse fail detector& annunciation system of Stage 2 & 3 of GGSSTP, Ropar	1.54	-	-	1.54
5	Upgradation/Replacement of T & P Items of EMC Circle of GGSSTP, Ropar	0.14	-	-	0.14
6	Upgradation/replacement of T &P for IMC Circle of GGSTP, Ropar	0.05	-	-	0.05
7	Upgradation/Replacement of old Photocopier Machines of GGSSTP, Ropar	0.02	-	-	0.02
9	Installation & Commissioning of Security Cameras along with Cables, LED Monitors at Nuhon Colony & Main Plant of GGSSTP, Ropar	0.20	-	-	0.20
10	Replacement of overhead feeder from Coal Handling Plant Stage-2 to Nuhon Colony with underground Cable at GGSSTP, Ropar	1.73	-	-	1.73
11	Retrofitting of 112 Nos 1250 & 2000 A Jyoti Make Vacuum Type Breakers to replace MOCB in stage 2 & 3 of GGSSTP, Ropar	8.00	-	-	8.00
	<b>Total</b>	<b>96.01</b>	<b>0</b>	<b>0</b>	<b>96.01</b>

### **Commission's Analysis:**

The Commission observed that PSPCL has proposed Capital expenditure of Rs. 66.67 Cr for max DNA control system for its Unit No. 5 or 6 for GGSSTP while for similar work in Unit No.1 of GHTP, PSPCL has proposed capital expenditure of Rs. 36.57 Crore. With regard to the Commission's observation, PSPCL vide reply dated 15.09.2022 submitted that PSPCL has proposed to upgrade Procontrol system of FSSS, ATRS, HPBP, STC & APRDS with MAX DNA system of BHEL on either of Unit 5 or 6 as the present system was installed and commissioned in 1992-93 whereas the system on Unit 1 of GHTP, Lehra Mohbbat was installed and commissioned in 1998-99 i.e., System installed at GHTP, Lehra Mohabbat is relatively newer and more advanced as compared to that installed at GGSSTP, Ropar. As such, upgradation requirement of the system installed at GGSSTP, Ropar is more as compared to that installed at GHTP, Lehra Mohhbat. Hence comparison of these two schemes should not be done.

In view of PSPCL's submissions that the new schemes proposed for the 3<sup>rd</sup> Control Period are essential for Renovation and Modernization (R&M) work of the obsolete systems installed on both Stage 2 and stage 3 of GGSSTP, the Commission approves the capital investment of Rs 96.01 Cr. towards new schemes for the 3<sup>rd</sup> Control Period as proposed by PSPCL. Further, the Commission reiterates its direction that PSPCL is to ensure that useful life of the plant (all four units 3-6) is extended to commensurate with the useful life of FGD i.e. till atleast 2030.

### **3.2.2 Guru Hargobind Thermal Plant (GHTP), Lehra Mohabbat**

GHTP is located about 25 KMs from Bathinda, with a total installed capacity of 920 MW and comprising of two stages. Stage-I consists of two Units of 210 MW each and Stage-II consists of two Units of 250 MW each. Units 1 & 2 of Stage-I were commissioned on 29-12-1997 and 16-10-1998 respectively while Units 3 & 4 of Stage-II were commissioned on 03-01-2008 and 31-07-2008 respectively. The scheme-wise submission by PSPCL for the 3<sup>rd</sup> Control Period and the Commission's analysis of the same is discussed below.

## **Spillover Schemes**

### **PSPCL's Submissions:**

The summary of capital investment proposed by PSPCL for GHTP in the 3<sup>rd</sup> Control Period is given in the following tables:

**Table 18: Capital Investment proposed by PSPCL for Spillover/ Deferred Schemes of GHTP**

Rs Cr.					
S. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total
1	Lehra Mohabbat G.H.T.P 920 MW DSI Based F.G.D System installation project	68.66	79.90	0.00	148.56
2	Pending payments of BHEL against GHTP stage-II	4.00	3.00	3.00	10.00
3	Payment for LAC due to court cases at GHTP Lehra Mohabbat	1.00	1.00	1.00	3.00
	<b>Total</b>	<b>73.66</b>	<b>83.90</b>	<b>4.00</b>	<b>161.56</b>

With regard to the FGD Systems Installation, PSPCL submitted that Ministry of Environment, Forest and Climate Change (MOEF&CC), Govt. of India has notified the new environment norms for thermal power plants in India vide notification no. 2620 dated 07-12-2015. Subsequently, Central Electricity Authority (CEA) prepared a phasing plan for implementation of new environment norms for thermal power plants to be completed by 31<sup>st</sup> December 2022. Central Pollution Control Board (CPCB), New Delhi preponed the date for implementation of new Environment norms for the thermal power plants falling within 300 KM of National Capital Region (NCR) to 31-12-2019. While GHTP, Lehra Mohabbat meets new Environment Norms for Suspended Particulate Matter (SPM) (< 100 mg/Nm<sup>3</sup>) & NO<sub>x</sub> (<600 mg/Nm<sup>3</sup>), the SO<sub>x</sub> Emission from Units of GHTP, Lehra Mohabbat is higher than the norm prescribed (>600 mg/Nm<sup>3</sup>) by the notification of CPCB, New Delhi. As such, it is necessary to install Flue Gas Desulphurization (FGD) of appropriate Technology on the units of GHTP, Lehra Mohabbat in order to keep them operational beyond 31.12.2019.

In the 2<sup>nd</sup> MYT Control Period the Commission had approved capital investment of



Rs 557.47 Cr. for wet lime based FGD System for GHTP. Further as per the decision of WTDs of PSPCL in its 242<sup>nd</sup> meeting held on 26-08-2020 at Patiala, the ongoing bidding process for installation of wet lime based FGD system was closed due to very low PLF of GHTP units and PSPCL decided to install DSI based FGD. For floating a fresh tender for installation of DSI based FGD system at GHTP, the matter is being taken up with M/s NTPC for preparation of techno-commercial tender specifications.

MOEF&CC issued 2<sup>nd</sup> amendment in the Environment Protection Act, 1986. A task force comprising of representatives from MOEF&CC, CPCB, CEA & NTPC was formed to categorize the thermal plants in category 'A', 'B', 'C'. Units of GHTP were categorized by the task force in category 'C'. A new timeline for installation and commissioning of FGD on Units of GHTP has now been fixed for the process to be completed by 31.12.2024. The cost of installation and commissioning DSI FGD will be approximately Rs. 181.66 Crore.

**Commission's Analysis:**

PSPCL vide its reply 15.09.2022 submitted that in the DPR the Project cost is assessed as Rs.181.66 Crore which is correct and includes the completion cost as Rs.179.855 Crore which is proposed to be incurred during FY 2022-23, 2023-24 and 2024-25 in addition to the expenditure of Rs. 1.8043 Cr already incurred till FY 2021-22. Thus, the actual total completion cost comes out to be 181.66 Crore. As per the DPR submitted by PSPCL, the estimated capital expenditure for FY 2022-23 under this scheme is Rs. 31.3 Cr. Accordingly, PSPCL has sought the balance capital expenditure of Rs. 148.56 Cr under this scheme for the 3<sup>rd</sup> Control Period.

Regarding GHTP's Land Acquisition Cases (LAC) payment, PSPCL vide reply dated 04.11.2022 has submitted that the payment for LAC due to court cases awards relating to GHTP Lehra Mohabbat depends upon the number of court cases, decided against PSPCL. Thus, the amount in the 3<sup>rd</sup> MYT Control Period has been increased from Rs.2 Cr to Rs. 3 Cr. Further, regarding pending payments of BHEL against GHTP, PSPCL submitted that the chances of settlement with BHEL were unlikely, so no payments have been made so far. However, there are chances of settlement with BHEL in FY 2023-24, so capex of Rs.10 Cr. is demanded for the 3<sup>rd</sup> Control Period.

The Commission had approved capital investment of Rs. 600.83 Cr for the 2<sup>nd</sup> MYT Control Period including spillover and new schemes vide Order dated 3.12.2019 in

Petition No. 18 of 2019. Out of these PSPCL has now proposed capital expenditure of Rs. 161.56 Cr. in the 3<sup>rd</sup> Control Period for spillover schemes from the 2<sup>nd</sup> Control Period including FGD, LAC awards due to court cases and BHEL's settlement payment. Thus, in view of above submissions of PSPCL, the Commission approves capital investment of Rs. 161.56 Cr. towards spillover scheme for the 3<sup>rd</sup> MYT Control Period. However, payments to BHEL and payments to LAC due to court cases would be allowed as per actual expenditure during the True Up.

**New Scheme:**

**PSPCL's Submissions:**

**Replacement of 2X60 KVA UPS system of Unit No. 1, GHTP, Lehra Mohabbat**

This scheme's proposal is to upgrade the C&I Distributed Control System (DCS) system of Unit-1 (210MW) to maxDNA system. It will include all the panels, electronic modules, operator workstations, engineering workstations and DCS. Field wiring will remain the same. Detailed engineering / procurement / supply and delivery of the material, hardware and software, installation, testing and commissioning will be in the scope of work allotted to M/s BHEL. The Pro control system is more than 25 years old and is declared obsolete by M/s BHEL. They are also not providing any spares, repair of electronic modules and engineering service support. As 2x250MW units of stage-2 GHTP are also maxDNA based, therefore inventory control will be more efficient and cost effective. The completion cost of this scheme is estimated to be Rs. 35.61 Crore. The summary of capital investment by PSPCL for GHTP in the 3<sup>rd</sup> Control Period is given in the following table:

**Table 19: Capital Investment proposed by PSPCL for New Schemes of**

		<b>GHTP</b>			<b>Rs. Cr.</b>
<b>S. No.</b>	<b>Particulars</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>	<b>FY 2025-26</b>	<b>Total (MYT)</b>
1	Replacement of 2X60 KVA UPS system of Unit No. 1, GHTP, Lehra Mohabbat	0.96	0.00	35.61	<b>36.57</b>
	<b>Total</b>	<b>0.96</b>	<b>0.00</b>	<b>35.61</b>	<b>36.57</b>

### Commission's Analysis:

PSPCL, vide reply 15.09.2022, submitted that the replacement of 2 x 60kVA UPS of GHTP Unit No. I is a scheme proposed at Rs 0.96 crore in FY 2023-24. Upgrading the GHTP's Pro-Control system of Unit 1 is another scheme for which Rs. 35.61 crore is proposed for FY 2025-26 and DPR for the same has been filed along with the present petition. Under Form G-13, due to an inadvertent error, the name of both schemes became one and the remedies proposed in both schemes were added. As per the DPR submitted by PSPCL, the scheme has been proposed to address the issue of obsolescence of old technology for which spares/repairs/support is not available. Thus, in view of above submissions of PSPCL, the Commission approves capital investment of Rs. 36.57 Cr. for the 3<sup>rd</sup> MYT Control Period as under:

**Table 20: Capital Investment approved by the Commission for New Schemes of GHTP** **Rs. Cr**

S. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
1	Replacement of 2X60 KVA UPS system of Unit No. 1, GHTP, Lehra Mohabbat	0.96	0.00	0.00	<b>0.96</b>
2.	Upgrading the GHTP's Pro-Control system -Unit-I	0.00	0.00	35.61	<b>35.61</b>
	<b>Total</b>	<b>0.96</b>	<b>0.00</b>	<b>35.61</b>	<b>36.57</b>



### 3.2.3 Summary (Thermal Generating Stations)

The summary of Capital Investment and Capitalisation approved for thermal generating stations is given in the following tables:

**Table 21: Summary of Capital Investment Approved by Commission for Thermal Generating Stations**

Rs. Cr.

Sl. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total
<b>Spillover/ Deferred Schemes</b>					
1	Guru Gobind Singh Super Thermal Plant (GGSSTP), Ropar (Table 16)	100.00	95.10	0.00	<b>195.10</b>
2	Guru Hargobind Thermal Plant (GHTP), Lehra Mohabbat (Table 18)	73.66	83.90	4.00	<b>161.56</b>
<b>Subtotal</b>		<b>173.66</b>	<b>179.00</b>	<b>4.00</b>	<b>356.66</b>
<b>New Schemes</b>					
1	Guru Gobind Singh Super Thermal Plant (GGSSTP), Ropar (Table 17)	96.01	0.00	0.00	<b>96.01</b>
2	Guru Hargobind Thermal Plant (GHTP), Lehra Mohabbat (Table 19)	0.96	0.00	35.61	<b>36.57</b>
<b>Subtotal</b>		<b>96.97</b>	<b>0.00</b>	<b>35.61</b>	<b>132.58</b>
<b>Total (Thermal Generation)</b>					
1	Guru Gobind Singh Super Thermal Plant (GGSSTP), Ropar	196.01	95.10	0.00	<b>291.11</b>
2	Guru Hargobind Thermal Plant (GHTP), Lehra Mohabbat	74.62	83.90	39.61	<b>198.13</b>
<b>Total</b>		<b>270.63</b>	<b>179.00</b>	<b>39.61</b>	<b>489.24</b>

**Table 22: Summary of Capitalisation Approved by Commission for Thermal Generating Stations**

Rs Cr.

Sl. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total
<b>Spillover/ Deferred Schemes</b>					
1	Guru Gobind Singh SuperThermal Plant (GGSSTP), Ropar	0.00	200.10	0.00	<b>200.10</b>
2	Guru Hargobind Thermal Plant (GHTP), Lehra Mohabbat	5.00	185.16	4.00	<b>194.16</b>
<b>Subtotal</b>		<b>5.00</b>	<b>385.26</b>	<b>4.00</b>	<b>394.26</b>
<b>New Schemes</b>					
1	Guru Gobind Singh SuperThermal Plant (GGSSTP), Ropar	96.01	0.00	0.00	<b>96.01</b>
2	Guru Hargobind Thermal Plant (GHTP), Lehra Mohabbat	0.96	0.00	35.61	<b>36.57</b>
<b>Subtotal</b>		<b>96.97</b>	<b>0.00</b>	<b>35.61</b>	<b>132.58</b>
<b>Total (Thermal Generation)</b>					
1	Guru Gobind Singh SuperThermal Plant (GGSSTP), Ropar	96.01	200.10	0.00	<b>296.11</b>
2	Guru Hargobind Thermal Plant (GHTP), Lehra Mohabbat	5.96	185.16	39.61	<b>230.73</b>
<b>Total</b>		<b>101.97</b>	<b>385.26</b>	<b>39.61</b>	<b>526.84</b>

*Note: Capitalization for above items has been considered as per PSPCL's submission for capitalization (Form-G-12) and according to Capital expenditure as approved by the Commission in Table No. 21.*

### 3.3 Hydroelectric Generating Stations

#### 3.3.1 Anandpur Sahib Hydrel Project (ASHP)

ASHP is situated about 32 kms. Downstream of Bhakhra Dam towards Ropar side. This Project was constructed to utilize additional water of Bhakhra Nangal System as a result of Interlinking of Beas and Sutlej Rivers at Dehar. The 34 km RCC lined canal named Anandpur Sahib Hydrel Channel has 10,150 cusec capacity, taken off from left Bank of Nangal Reservoir (Nangal Pond) on the Sutlej river. The power is generated at 11 kV and stepped up at 132 kV, is further fed into the Regional Grid for exclusive use of Punjab. The Power Houses were commissioned in 1985.

#### Spillover Schemes

##### **PSPCL's Submissions:**

The summary of capital investment proposed by PSPCL for ASHP in the 3<sup>rd</sup> Control Period is given in the following tables:

**Table 23: Capital Investment proposed by PSPCL for Spillover Schemes of ASHP**

Rs Cr.					
S. No	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
1	Procurement of 30 No. (18 No MYT 2017-20, 12 No MYT 2020-23) Stator Air Cooler for ASHP.	2.40	0.00	0.00	2.40
2	Provision of 1 No. 200KVA capacity DG set (Silent type) for Ganguwal Powerhouse Including Room.	0.28	0.00	0.00	0.28
3	Procurement of 1 No. Spare 20 BHP Slip-ring induction Motor for Gantry crane	0.04	0.00	0.00	0.04
4	Renewal & Replacement (R&R) of two 220V DC battery charger/set for Ganguwal& Nakkian power Houses.	0.00	0.17	0.00	0.17
5	Procurement of 2 No. Jeeps, one No. for power Houses maintenance purpose and one No. for Resident Engineer as Staff Jeep.	0.00	0.00	0.22	0.22



S. No	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
6	Procurement of one No. staff car for DY CE/Generation Circle ASHP Anandpur Sahib.	0.13	0.00	0.00	0.13
7	Replacement of existing illumination System at Ganguwal Powerhouse and residential Colonies with LED lights at ASHP	0.27	0.00	0.00	0.27
8	Capital overhauling of Electric Overhead Traveling (EOT) crane at PH-1,&2 of ASHP	0.55	0.00	0.00	0.55
9	Replacement of existing 24 no. thrust bearing oil coolers along with accessories of Ganguwal & Nakkian Powerhouse.	0.60	0.00	0.00	0.60
10	Replacement of existing 24 no. Upper Guide Bearing oil coolers along with accessories of Ganguwal & Nakkian Powerhouse.	0.20	0.00	0.00	0.20
11	Replacement of existing 24 no. Lower Guide Bearing oil coolers along with accessories of Ganguwal & Nakkian Powerhouse	0.20	0.00	0.00	0.20
12	Renewal and Modernization (R&M) work of BHEL make generating units (two) 33.5MW Hydro for Anandpur Sahib Hydel Project	10.00	50.00	50.00	110.00
13	Procurement of Two No. Transformer oil filtration sets (one for each power house i.e. Ganguwal & Nakkian) of 3000ltr./hr capacity.	0.70	0.00	0.00	0.70
14	Procurement of one No. Transformer oil BDV Testing set for Anandpur Sahib Hydel Project (0-100kv Range.)	0.15	0.00	0.00	0.15
15	Design, manufacturing, testing, supply & commissioning of upgraded control & protection SCADA (supervisory control and data acquisition) system for replacement and renewal of existing old, outdated and obsolete Electro-Mechanical Control and protection system of Ganguwal 2x33.5 MW and Nakkian	1.64	8.22	8.22	18.08

S. No	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
	2x33.5 MW Power Houses at ASHP, Shri Anandpur Sahib				
16	Supply, erection, testing and commissioning (renewal & replacement of Micro Processor based Digital excitation system including Digital AVR system in place of existing shaft mounted exciter of all the 4 unit (Unit No-I & II &Ganguwal Powerhouse & Unit No. III & IV at Nakkian Powerhouse of ASHP.	0.42	2.04	2.04	4.50
17	Supply, erection, testing and commissioning of Micro Processor based Digital Governor system for replacement of existing electromechanical Governor of all the 4 units (Unit No-I & II &Ganguwal Powerhouse & Unit No. III & IV at Nakkian Powerhouse of Anandpur Sahib Hydel Project.	0.46	2.27	2.27	5.00
18	Replacement of 4 NO. oil coolers along with accessories for GT 11/132 KV 40 MVA of Ganguwal & Nakkian Powerhouse.	0.24	0.00	0.00	0.24
19	Replacement of 4 No. Dewatering pump sets with suitable new pumps at Powerhouse No. 2 Nakkian.	0.30	0.00	0.00	0.30
20	Replacement of existing two no AUTOMATIC CARBON-DIOXIDE FIRE Extinguishing system with latest technology automatic fire extinguishing system of Ganguwal & Nakkian Power Houses.	0.03	0.135	0.135	0.30
21	Replacement of existing illumination System at Nakkian Powerhouse with LED lights.	0.08	0.00	0.00	0.08
22	Replacement of old split Air Conditioning Units of Ganguwal & Nakkian Power Houses with new Split A/Cs.	0.08	0.00	0.00	0.08
	<b>Total</b>	<b>18.77</b>	<b>62.84</b>	<b>62.89</b>	<b>144.50</b>

### **Commission's Analysis:**

PSPCL, vide reply dated 15.09.2022 submitted that the less water discharge period at Anandpur Sahib Hydel Project (ASHP) is generally observed from September to March every year. Most of the Capital Works/(Renovation Modernization and Uprating (RMU) works are planned during less water discharge period in a phased manner to minimize the generation loss so as not to adversely affect the hydro generation. Thus, the RMU of ASHP is planned to be carried out over nearly 4 years in a phased manner.

The Commission had already approved capital investment of Rs. 145.88 Cr for ASHP for the 2<sup>nd</sup> Control Period including spillover and new schemes vide Order dated 03.12.2019 in Petition No. 18 of 2019. PSPCL has now proposed capital expenditure of Rs. 144.5 Cr in the 3<sup>rd</sup> Control Period for the spillover schemes of the 2<sup>nd</sup> Control Period indicating that PSPCL has not been able to start most of the works in the 2<sup>nd</sup> Control Period. However, the Commission notes that the 2<sup>nd</sup> MYT Control Period was blighted by the COVID-19 pandemic due to which PSPCL might not have been able to undertake the works planned and approved in the 2<sup>nd</sup> MYT Control Period. Further, as noted in the earlier paras, ASHP plant is quite old and has outlived its useful life. Hence, the R&M works are essential for its continued smooth running. Thus, in view of the above and submissions of PSPCL, the Commission approves a capital investment of Rs 144.5 Cr for the 3<sup>rd</sup> Control Period on account of spillover schemes of the 2<sup>nd</sup> MYT Control Period. However, the Commission directs PSPCL to expedite the execution of the above schemes in the most efficient, judicious and timely manner.

### **New Schemes**

#### **PSPCL's Submissions:**

The summary of capital investment proposed by PSPCL for new schemes for ASHP in the 3<sup>rd</sup> Control Period is given in the following table:



**Table 24: Capital Investment proposed by PSPCL for New Schemes of ASHP**

Sr. No	Particulars	Rs Cr.			
		FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
1	Capital Overhauling of 3.nos, 40MVA Generator transformer of ASHP (1 no. at Ganguwal Power House and 2nos at Nakkian Power House)	0.30	0.30	0.30	0.90
2	Supply, erection, testing and commissioning of new Independent 11Kv feeder from 132kv substation Nakkian to PH2 Nakkian.	0.25	0.00	0.00	0.25
3	Shifting of existing 11kv Lamlehri feeder of PH-1, Ganguwal to a more technically feasible route for better efficiency and reliability.	0.00	0.15	0.00	0.15
4	PCC flooring, lying of new gravel, repair of cable trenches & trench covers in switchyards & Transformer Yard at PH-1 and PH-2, repair work of fencing and lighting work along fencing of switchyard at PH-1 & PH-2 of ASHP.	0.45	0.45	0.00	0.90
5	Laying of premix bitumen carpet & upgradation of roads at Power Colony ASHP.	0.10	0.10	0.00	0.20
6	Laying of premix bitumen carpet & upgradation of roads at Powerhouse No 2 Nakkian ASHP.	0.10	0.10	0.00	0.20
7	Capital Maintenance of One unit of ASHP.	0.00	2.10	0.00	2.10
8	Renewal and Modernization (R&M) work of BHEL make generating units (two) 33.5MW Hydro for Anandpur Sahib Hydel Project	10.00	50.00	50.00	110.00
9	Upgradation of 5 no. field hostel rooms to VIP guest house level rooms at field hostel ASHP.	0.12	0.00	0.00	0.12
10	Replacement Of Old defective Room Coolers Field Hostel.	0.00	0.02	0.00	0.02
11	Renovation of Circle Office Building.	0.00	0.00	0.25	0.25
12	Design Manufacturing supply & commissioning of 63 KVA silent	0.00	0.10	0.00	0.10

Sr. No	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
	Diesel Generator for VIP Guest House ASHP.				
13	Strengthening of Anandpur Sahib Hydel Channel by replacing damaged slabs of lined section from RD 0 to 33820 m.	0.30	0.00	0.00	0.30
14	Restoration of surface drains on the both sides of Anandpur Sahib Hydel Channel	0.50	0.00	0.00	0.50
15	Restoration of concrete blocks at the bed downstream of Nangal Head Regulator of AHC to prevent bed erosion	0.28	0.00	0.00	0.28
16	Removal of debris from the bed of AHC	0.25	0.00	0.00	0.25
17	Automation of Nangal Head Regulator Gates.	0.60	0.00	0.00	0.60
	<b>Total</b>	<b>13.25</b>	<b>53.32</b>	<b>50.55</b>	<b>117.12</b>

#### Commission's Analysis:

The Commission observes that the Power Houses of ASHP i.e. Ganguwal and Nakkian, originally commissioned in 1985 have completed their useful life. Therefore, Renovation and Modernization (R&M) works and replacement of existing equipment are necessary as per PSPCL's submission. The Commission notes that significant long-term benefits can be gained through these R&M works. Hence, the Commission approves the capital investment of Rs. 117.12 Cr. for the 3<sup>rd</sup> Control Period.

#### 3.3.2 Mukerian Hydel Project (MHP), Stage-I

Mukerian Hydel Project is situated in the Hoshiarpur District of Punjab. It comprises of 4 Power Houses. Power House No. I and II have 6 machines (3 at each Power House) of 15 MW capacity each whereas Power House No. III & IV have 6 machines (3 at each Power House) of 19.5 MW capacity each. The total generating capacity is 207 MW. The Power Houses were commissioned during the period 1983-1989.

### **Spillover/ Deferred Schemes**

#### **PSPCL's Submissions:**

The summary of capital investment proposed by PSPCL for MHP-I in the 3<sup>rd</sup> Control Period is given in the following tables:

**Table 25: Capital Investment proposed by PSPCL for Spillover/ Deferred Schemes of MHP - I**

Sr. No	Particulars	Rs Cr.			
		FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
1	Capital overhauling along-with replacement of stator core & stator coils and strengthening of Rotor poles with class F insulation of Machine No. 2, 5, 9 & 10.	0.98	0.00	0.00	0.98
2	Replacement of existing 5 nos. 20 MVA 11/132 KV Generator Transformers at MPH-1&2.	3.00	0.00	6.07	9.07
3	Providing Toilets at all the Bye-Pass gates of all Power Houses of MHP.	0.25	0.00	0.00	0.25
4	Supply of new Thrust & Guide Bearing (TGB) shell for 15MW machine no. 4 at MPH-2.	0.13	0.00	0.00	0.13
5	Replacement of existing conventional central AC Plants at PH-1 & 3 of MHP	0.16	0.00	0.00	0.16
6	Replacement of 3 nos. existing 25MVA GTs of M/c No.8,10&11 of MHP.	9.55	0.00	0.00	9.55
	<b>Total</b>	<b>14.07</b>	<b>0.00</b>	<b>6.07</b>	<b>20.14</b>

#### **Commission's Analysis:**

PSPCL vide reply 15.09.2022 submitted that, the less water discharge period at MHP, Talwara is from March to June, every year. Most of the Capital Works/RMU works are planned during less discharge period in a phased manner to minimize the



generation loss so as not to adversely affect the hydro generation. The Renovation & Modernization and Upgrading (RMU) of MHP-1 (PH-1 to PH-4) is planned to be carried out in nearly 6-7 years, in a phased manner so as not to adversely affect hydro generation.

Vide reply dated 04.11.2022, PSPCL submitted that in the 2<sup>nd</sup> MYT Control Period the cost in respect of the scheme Replacement of 3 nos. existing 25MVA GTs of M/c No.8,10&11 of MHP was estimated at Rs. 12.13 Cr on the basis of previous PO No. 59/HPs/ED-III/M-105 dated 28.03.2018 with base date 01.09.2017. In the order now placed on M/s Bharat Bijlee, New Delhi, the cost of the scheme comes to Rs. 21.55 Cr due to a substantial increase in price factored in by Indian Electrical & Electronics Manufacturer's Association (IEEMA) i.e. an increase of nearly 53% from Sep-2017 to Dec-2021. The cost of Rs. 21.55 Cr for the above scheme has been approved by the Whole time Directors of PSPCL in the 261<sup>st</sup> meeting held on 16.03.2022. Accordingly, projected actual capex of this scheme in the 2<sup>nd</sup> Control Period (FY 2022-23) is Rs. 12 Cr and in the 3<sup>rd</sup> MYT Control Period (FY 2023-24) is Rs. 9.55 Cr.

The Commission had already approved capital investment of Rs. 149.52 Cr for the 2<sup>nd</sup> Control Period for MHP-I including spillover and new schemes vide Order dated 03.12.2019 in Petition No. 18 of 2019. Out of these PSPCL has now proposed capital expenditure of Rs. 20.14 Cr in the 3<sup>rd</sup> Control Period for spillover schemes of the 2<sup>nd</sup> MYT Control Period. In view of above submissions of PSPCL, the Commission approves capital investment of Rs 20.14 Cr for the 3<sup>rd</sup> Control Period as spillover schemes.

## New Schemes

### PSPCL's Submissions:

The summary of capital investment proposed by PSPCL for new schemes of MHP-I in the 3<sup>rd</sup> Control Period is given in the following table:

**Table 26: Capital Investment proposed by PSPCL for New Schemes of MHP-I**

						Rs Cr.
Sr. No	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)	
1	Study of available input energy, Residual Life Assessment (RLA) Studies, feasibility studies for uprating of Machines and thereof carry out the Renovation, Modernization and Uprating (RMU) of Machines at Mukerian Hydel Project Stage-I (PH-1 to PH-4), PSPCL, Talwara.	3.00	50.00	100.00	<b>153.00</b>	
2	Replacement of existing 3 nos. 630 KVA, 11KV/415 Volts UATs at PH-2 of MHP	0.00	0.60	0.00	<b>0.60</b>	
3	Replacement of existing C&R Panels consisting of old vintage convention type electromechanical relays, DPRs, O/Cs & Directional E/F Relays, Transformer Differential / Restricted E/F Relays with new C&R Panels consisting of Numerical type Protection relays, annunciation system and disturbance recorder with GPS time synchronization facility for various Incoming/outgoing/ interlinking feeders of 132 KV & 66KV Circuits, Bus Coupler Panels, Bus Bar Protection System, C&R Panels on both HV & LV of Power Transformer at MHP Stage-I including replacement of various Control and Protection System cable and to establishing a Centralized Disturbance Cum Event Recorder time synchronized with GPS Clock at each Power House at MHP Stage -I	0.00	10.00	4.00	<b>14.00</b>	

Sr. No	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
4	Procurement of 3 sets of Trash Racks for Intake bays at MPH-2.	0.00	0.90	0.00	<b>0.90</b>
5	Replacement of existing Unit and Service Air Compressors at MPH-1,2,3&4.	0.00	0.00	0.50	<b>0.50</b>
6	Replacement of existing LT Scheme/panels at PH-1,2,3&4.	0.00	1.50	1.00	<b>2.50</b>
7	Laying 1:4:8 PCC in the Switchyard of PH-1,2,3&4	1.00	1.50	0.00	<b>2.50</b>
8	Replacement of existing one no. Vertical turbine Dewatering pump and one no. drainage pump with submersible pump at each PH-1,2,3&4 of MHP	0.00	0.00	1.00	<b>1.00</b>
9	Replacement of existing 8/4/4MVA, 132/33/11kV Transformer with alternate scheme for providing 11KV external supply at Power Houses of MHP, Talwara.	0.00	1.25	0.00	<b>1.25</b>
10	Replacement of existing 11 KV XLPE cables (size 1X500 mm <sup>2</sup> and size 1X800 mm <sup>2</sup> ) from Generator Bus duct to LV side of Generator Transformers of all the 12 nos. units at MPH-1,2,3&4 of MHP.	0.00	1.00	1.00	<b>2.00</b>
11	Purchase of Testing Instruments for Centralized Protection Cell, Talwara and Power Houses of MHP, Talwara	2.07	0.00	0.00	<b>2.07</b>
	<b>Total</b>	<b>6.07</b>	<b>66.75</b>	<b>107.50</b>	<b>180.32</b>

#### Commission's Analysis:

It is observed that the capital investment proposed by PSPCL is primarily towards replacement of equipment that has completed its useful life and other essential schemes as proposed by PSPCL. The Commission had already approved capital investment of Rs.149.52 Cr for the 2<sup>nd</sup> Control Period for MHP-I. Further, PSPCL has sought additional Rs.180.32 crore for New Schemes in the 3<sup>rd</sup> MYT Control Period. Considering the estimated life extension of these generating assets for another 25 years (as per DPR) and improvement in efficiency and reliability, the Commission approves the capital investment of Rs 180.32 Cr. as proposed by PSPCL for new schemes of MHP-I. However, the Commission further directs PSPCL



that it shall spend the said amount in case the life extension of 25 years as submitted in the DPR is guaranteed. The open-ended clause on “obsolescence if earlier” inserted by PSPCL does not justify the huge expenditure being incurred and is thus rejected.

### 3.3.3 Mukerian Hydel Project (MHP), Stage-II

Mukerian Hydel Project (MHP) Stage-II is situated at RD-880M of newly built channel of approximately 3.5 Km length, off taking from RD-35500m of Mukerian Hydel Channel of MHP Stage-I having maximum carrying capacity of 11,500 Cusecs. MHP Stage-II comprises of one Hydel Power Station of 2x9MW named as Mukerian Powerhouse No. 5, MHP Stage-II, Terkiana. Mukerian Hydel Project generates electrical energy at 11kV and after stepping up, transmitted to Grid at 132kV level at MHP Stage-I and at 66kV level at MHP Stage-II. The Power Houses of Stage-I are interconnected through double 132 KV circuits in chained manner and MPH-4 & MPH-5 are interlinked through 66kV Single Ckt.

#### New Schemes

##### **PSPCL’s Submissions:**

PSPCL has submitted that in order to ensure smooth operation of the stations, some essential works have been proposed which were not part of the original DPR. As per the new DPR a scheme has been proposed to help in safeguarding human life and property through various equipment installed at the power house. The summary of capital investment proposed by PSPCL for new schemes of MHP-II in the 3<sup>rd</sup> Control Period is given in the following table:

**Table 27: Capital Investment proposed by PSPCL for New Schemes of MHP-II**

(Rs Cr.)

Sl. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total
1	Installing CCTVs at PH-5, MHP Stage-II	0.10	-	-	0.10
	Total	0.10	-	-	0.10

### Commission's Analysis:

In view of PSPCL's submissions, the Commission approves the capital investment of Rs.0.10 Cr. as proposed by PSPCL for the 3<sup>rd</sup> Control Period.

### 3.3.4 Ranjit Sagar Dam (RSD) Hydro Electric Project

Ranjit Sagar Dam (Thein Dam) Project is one of the largest multipurpose river valley project on river Ravi about 24 kms up-stream of Madhopur Head Works. The project was accorded approval by Government of India in April 1982 and all the generating units were commissioned during year 2000. It houses four generating units of 150 MW each with total installed capacity of 600 MW.

### Spillover/ Deferred Schemes

#### PSPCL's Submissions:

The summary of capital investment proposed by PSPCL for RSD in the 3<sup>rd</sup> Control Period is given in the following tables:

**Table 28: Capital Investment proposed by PSPCL for Spillover/ Deferred Schemes of RSD during the 2<sup>nd</sup> Control Period**

S. No	Particulars	Rs Cr.			
		FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
1	Overhauling of 1 no. 62.5 MVA GT out of 3 nos GTs proposed in FY 2020-21	0.37	0.00	0.00	0.37
2	R&M of existing old Auto sequencers & AVR with Unit control System compatible to SCADA application including R&M of Bus-Bar Protection scheme proposed in FY 2020-21	18.71	0.00	0.00	18.71
3	Providing detachable scaffolding set for power plant maintenance.	0.09	0.00	0.00	0.09
4	Replacement of drainage pumps of service bay side-2 nos	0.40	0.00	0.00	0.40
5	Up-gradation of 5 no. HP compressors of condenser mode operation and for machines	0.16	0.00	0.00	0.16
6	Replacement of one oil filtration set for servo prime-57 oil (Make: Alfa Laval)	0.52	0.00	0.00	0.52
7	Submersible pump with other accessories in place of portable pump	0.21	0.00	0.00	0.21
8	Procurement of transformer oil filtration set 6000 LPH	0.38	0.00	0.00	0.38

S. No	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
9	Procurement of spares for capital overhauling of 220KV circuit breaker of seven feeders.	0.50	0.00	0.00	0.50
10	Const. of Porches over all entry points of Power House Building.	0.11	0.00	0.00	0.11
11	R&M of CO2 system	0.56	0.00	0.00	0.56
12	Design, Manufacturing, Testing, Supply and supervision of erection, testing, commissioning, of 1 no. 62.5MVA 13.8/220/3 KV Single Phase GT for replacement of damaged Single phase 13.8 KV/220/3KV 62.5MVA GT Sr. No 6800000148 Make: NGEF.	5.50	0.00	0.00	5.50
13	Replacement of LP Compressors Make: ELGI working Pressure: 7 kg/cm2	0.10	0.00	0.00	0.10
14	Supply, Installation and commissioning of 2nos. Float cum boost charger of 24V Battery Bank for RSD Powerhouse Shahpur Kandi.	0.25	0.00	0.00	0.25
15	Overhauling of 1 no. 62.5 MVA GT out of 3 nos GTs	0.00	0.53	0.00	0.53
16	Overhauling of 1 no. 62.5 MVA GT out of 3 nos GTs.	0.00	0.00	0.53	0.53
17	R&M of existing local exchange for strengthening of communication system proposed in FY 2021-22	0.00	0.00	0.14	0.14
18	Capital Overhauling of unit no.2 (150MW, 13.8KV BHEL make) replacement of worn out and defective part	0.00	0.00	31.32	31.32
	<b>Total</b>	<b>27.86</b>	<b>0.53</b>	<b>31.99</b>	<b>60.38</b>

### Commission's Analysis:

PSPCL vide reply dated 15.09.2022 submitted that the work of Capital overhauling of unit-2 includes the repair/ replacement of major parts of the machine such as runner, guide vanes, thrust bearing, guide bearings, servo system, main inlet valve (MIV) etc. As per PSPCL's commercial accounting systems Vol.1 Part-2, point 2.30: Expenditure on major replacement shall be capitalized. Further, Capital overhauling of GTs are required to improve the useful life of GTs and to improve its efficiency.

With regards to increase in CIP for Capital Overhauling of unit no.2 (150MW, 13.8KV BHEL make) replacement of worn out and defective parts in the 3<sup>rd</sup> MYT Control



Period, PSPCL submitted that keeping in view the price escalation expected in the year 2025-26 and additional spares that are needed to be replaced, the Capital cost of overhauling of unit no. 2 in the CIP has escalated.

The Commission had already approved Capital Investment for the 2<sup>nd</sup> Control Period at Rs. 61.07 Cr for RSD including spillover and new schemes vide Order dated 03.12.2019 in Petition No. 18 of 2019. Out of these, PSPCL has now claimed Capital investment of Rs. 60.38 Cr in the 3<sup>rd</sup> Control Period for spillover schemes from the 2<sup>nd</sup> Control Period indicating that PSPCL has not been able to start most of the works in the 2<sup>nd</sup> Control Period. However, the Commission notes that since the 2<sup>nd</sup> MYT Control Period was constrained due to the COVID-19 pandemic, PSPCL might have not been able to undertake the works planned and approved in the 2<sup>nd</sup> MYT Control period. In view of the above and considering the submissions of PSPCL, the Commission approves capital investment of Rs 60.38 Cr for the 3<sup>rd</sup> Control Period on account of spillover schemes of the 2<sup>nd</sup> MYT Control Period. However, the Commission directs PSPCL to expedite the execution of the above schemes in the most judicious, efficient and timely manner.

### **New Schemes**

#### **PSPCL's Submissions:**

The summary of Capital investment proposed by PSPCL for new schemes of RSD in the 3<sup>rd</sup> Control Period is given in the following table:

**Table 29: Capital Investment proposed by PSPCL for New Schemes of RSD**  
Rs Cr.

S. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
1	CCTV camera and biometric installation at RSD Power Plant Shahpur kandi	0.17	0.00	0.00	<b>0.17</b>
2	Replacement of shaft current relays of Unit no.1,3	0.41	0.00	0.00	<b>0.41</b>
3	Replacement of 9 nos 11KV VCBs & Panels (2 nos Incomers, 6 nos Outgoing & 1 no. Bus Coupler)	0.47	0.00	0.00	<b>0.47</b>
4	Procurement of T&P and safety kits (foldable ladder for Switchyard, portable air compressor, earth tester, mutimeters, clamp on meter, DC resistance meter, safety belts, helmets, earth sticks etc)	0.20	0.00	0.00	<b>0.20</b>

S. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
5	Replacement of all 16 nos. Brake & jack of unit no. 4	0.19	0.00	0.00	<b>0.19</b>
6	Replacement of PP Sets oil pumps of Unit no.1 (Make: Tushako) (4 no. pumps of Governor and MIV)	0.63	0.00	0.00	<b>0.63</b>
7	Replacem <sup>ent</sup> of 3rd VT dewatering pump into submersible pump	0.31	0.00	0.00	<b>0.31</b>
8	Extension of Rail Track at Powerhouse	0.13	0.00	0.00	<b>0.13</b>
9	New set of 8 no. HP Compressors with accessories for condenser mode operation including civil works	0.63	0.00	0.00	<b>0.63</b>
10	Replacement of Gate valves upto 400mm of 4 no. machines	0.00	1.57	0.00	<b>1.57</b>
11	Replacement of special valves eg. Air suction valves, Aeration valve, Air valves of 2 no. machines (unit no.1 & 2).	0.00	1.35	0.00	<b>1.35</b>
12	Replacement of PP Sets oil pumps of Unit no.2 (Make: Tushako) (4 no. pumps of Governor and MIV)	0.00	0.63	0.00	<b>0.63</b>
13	Replacement of one oil filtration set for Servo Prime-68 Oil (Make: Alfa Laval)	0.00	0.52	0.00	<b>0.52</b>
14	Replacement of 18 no. LT breakers of SSBs and UABs	0.00	0.39	0.00	<b>0.39</b>
15	Replacement of relay panels of 7 nos 220KV Feeders (replacement of relays other than DPRs) with SCADA provision	0.00	0.66	0.00	<b>0.66</b>
16	Replacement of PP set oil pumps of Unit no.3 & 4 (Make: Tushako) (8 no. pumps of Governor and MIV)	0.00	0.00	1.25	<b>1.25</b>
17	Replacement of special valves eg. Air suction valves, Aeration valve, Air valves of 2 no. machines (unit no. 3 & 4).	0.00	0.00	1.35	<b>1.35</b>
	<b>Total</b>	<b>3.14</b>	<b>5.12</b>	<b>2.61</b>	<b>10.87</b>

**Commission's Analysis:**

PSPCL vide reply dated 15.09.2022 submitted that other replacement works included in the MYT are for replacement of complete equipment such as replacement of oil filtration set, HP compressors, etc. Further, work of rail track is extension of existing rail track constructed at PH for movement of GTs. In view of PSPCL's submissions that by way of timely replacement of defective parts or those likely to become defective in the near future, probability of breakdown can be reduced substantially resulting in fewer forced outages and better operational

efficiency, the Commission approves the capital investment of Rs. 10.87 Cr. as proposed by PSPCL for the 3<sup>rd</sup> Control Period for new schemes.

### 3.3.5 Shanan Hydel Project

Shanan Project (4x15 MW and 1x50 MW) is situated in Himachal Pradesh. As per provisions contained in The Punjab Re-organization Act, 1966, Shanan Power House situated at Joginder Nagar (Mandi) in the State of Himachal Pradesh was allocated to Punjab State by the Government of India, Ministry of Irrigation & Power. Shanan Power House, Stage-I of 4X12 = 48 MW was uprated to 4X15 = 60 MW in 1982. The up-rated machines were finally commissioned in December 1982. Further, the extension of the Stage-I of this Project was done by constructing an additional unit of 50 MW. The project with one unit of 50 MW, supplied by M/s BHEL was commissioned in March, 1982.

#### Spillover/ Deferred Schemes

##### **PSPCL's Submissions:**

The summary of capital investment proposed by PSPCL for Shanan HEP in the 3<sup>rd</sup> Control Period is given in the following tables:

**Table 30: Capital Investment proposed by PSPCL for Spillover/ Deferred Schemes of Shanan HEP** Rs Cr.

S. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
1	Providing CCTV cameras at Shanan PH	1.31	0.00	0.00	1.31
2	Replacement of insulation of existing spare field coils of rotor of 50 MW machine with 'F' class.	0.48	0.00	0.00	0.48
3	Procurement of 132, 66 & 11 KV CTs/PTs & Erection.	0.01	0.10	0.02	0.13
4	Procurement of 01 No. runner for 50 MW machine along with HVOF coating.	4.59	0.00	0.00	4.59
5	Procurement of 02 Nos. runner for 15 MW machines along with HVOF coating	7.00	0.00	0.00	7.00
6	Replacement of old 11KV/440V LT panels	0.54	0.00	0.00	0.54



<b>S. No.</b>	<b>Particulars</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>	<b>FY 2025-26</b>	<b>Total (MYT)</b>
	incoming and outgoing feeders at 11 KV Switch House.				
7	Replacement of old 02 nos. 630KVA, 11/440V station transformers with new one.	0.36	0.00	0.00	<b>0.36</b>
8	Replacement of G-40 Governor with new OPU	5.97	0.00	0.00	<b>5.97</b>
9	Modernization and renovation of 50 MW cooling system	2.17	0.00	0.00	<b>2.17</b>
10	Providing new over speed trip protection devices of all machines	0.17	0.00	0.00	<b>0.17</b>
11	Renovation and modernization of firefighting system of powerhouse.	0.54	0.00	0.00	<b>0.54</b>
12	Replacement of needle control device, deflector shafts of Shanan machines	1.21	0.00	0.00	<b>1.21</b>
13	Procurement of spare sets of bearing pads for 4x15 MW machines	0.36	0.00	0.00	<b>0.36</b>
14	Construction of toilet (Male, Female) at Shanan powerhouse, PSPCL, Joginder Nagar.	0.05	0.00	0.00	<b>0.05</b>
15	Renovation of water cooling bus of 4x15 MW machines	5.79	0.00	0.00	<b>5.79</b>
16	Replacement of B- class insulation of stator winding of 1x50 MW m/c with F- class	3.02	0.00	0.00	<b>3.02</b>
17	Replacement of all LT panels of auxiliary equipments of all machines	0.30	0.00	0.00	<b>0.30</b>
18	Replacement of underwater parts of all machines	58.18	0.00	0.00	<b>58.18</b>
19	Concreting of Sub Station at Shanan Powerhouse Joginder Nagar	0.00	0.00	0.00	<b>0.00</b>
20	Replacement of all air compressors with new ones.	0.36	0.00	0.00	<b>0.36</b>
21	Replacement of stator air coolers, TGB, LGB, UGB and thrust bearing oil coolers of	1.81	0.00	0.00	<b>1.81</b>

S. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
	1x50 MW machine with new ones				
22	Renovation and modernization of House Generator Set	2.41	0.00	0.00	<b>2.41</b>
23	Procurement of spare slip ring assemblies for 4x15 MW and 1x50 MW machines	0.60	0.00	0.00	<b>0.60</b>
24	Procurement of spare labyrinth rings for 1x50 MW assemblies	0.60	0.00	0.00	<b>0.60</b>
25	Procurement of 1No. New Hydraulic Butterfly Valve (PPV) along with Erection, Testing & Commissioning for 50MW Unit of Shanan Powerhouse, PSPCL Joginder Nagar.	6.04	0.00	0.00	<b>6.04</b>
	<b>Total</b>	<b>103.87</b>	<b>0.10</b>	<b>0.02</b>	<b>103.99</b>

#### Commission's Analysis:

With regard to the Commission's query on Shanan Power Hydro Station revert/transfer to HP, PSPCL vide reply dated 16.12.2022 has submitted that the 110 MW Shanan Hydro Power Project situated in Himachal Pradesh is lawfully owned & managed by Punjab Electricity department (now PSPCL) and is not on lease. Further, the Government of India had issued a clarification notification dated 22/03/1972 whereby, the claim of the Himachal Pradesh Government regarding ownership of Shanan Power House was categorically rejected. The State of Himachal Pradesh has no legal Locus-Standi for challenging the Gazette notifications dated 01/05/1967, 22/03/1972 which were issued by the Central Government itself and have attained finality. Therefore, there is no plan to revert/transfer the Shanan Power House to Himachal Pradesh as per the Reorganization Act.

Keeping the above clarification given by PSPCL, it is directed as under:

The Commission had already approved capital investment of Rs. 133.29 Cr for the 2<sup>nd</sup> Control Period including spillover and new schemes vide Order dated 03.12.2019 in Petition No. 18 of 2019. Out of those approved works, PSPCL has now claimed

capital investment of Rs. 103.99 Cr in the 3<sup>rd</sup> Control Period for spillover schemes from the 2<sup>nd</sup> Control Period indicating that PSPCL has not been able to start most of the works in the 2<sup>nd</sup> Control Period. However, the Commission has already noted earlier the delays and deferments due to the impact of COVID-19 pandemic on completion of projects. As pointed out in the earlier paras, Shanan plant is quite old and has outlived its useful life and hence the R&M works sought to be spilled over from the 2<sup>nd</sup> MYT Plan are considered essential for its smooth running. In view of the above and submissions of PSPCL regarding PSPCL's ownership and continuing control of this project as clarified by PSPCL and noted above, the Commission approves capital investment of Rs 103.99 Cr for the 3<sup>rd</sup> Control Period on account of spillover schemes of the 2<sup>nd</sup> MYT Control Period. However, the Commission directs PSPCL to expedite the execution of the above schemes without further delay.

### **New Schemes**

#### **PSPCL's Submissions:**

The summary of capital investment proposed by PSPCL for new schemes of Shanan HEP in the 3<sup>rd</sup> Control Period is given in the following table:

**Table 31: Capital Investment proposed by PSPCL for New Schemes of Shanan HEP**

<b>Rs Cr.</b>					
<b>S. No.</b>	<b>Particulars</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>	<b>FY 2025-26</b>	<b>Total (MYT)</b>
1	Procurement of Audible warning siren systems with pre recorded voice message 70 decibel at 1.6 KM.	4.50	0.00	0.00	<b>4.50</b>
2	Procurement of Silt measurement device in running water of UHL River.	0.55	0.00	0.00	<b>0.55</b>
3	Setting up of control room with upgraded facilities, Room for EWS & DG Set.	1.00	0.00	0.00	<b>1.00</b>
4	Procurement of G&D (Gauge and Discharge) velocity sensor (Flow/Level).	0.50	0.00	0.00	<b>0.50</b>
5	Construction of PCC floor on portion in between retaining wall and edge of old reservoir to control the seepage of retaining structures along the bank of old reservoir.	0.50	0.00	0.00	<b>0.50</b>



<b>S. No.</b>	<b>Particulars</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>	<b>FY 2025-26</b>	<b>Total (MYT)</b>
6	Replacement of existing bus bar with shrouded bus bar along with its remote operation of 200/50 Ton and 60/20 of 50 MW of EOT crane.	1.05	0.00	0.00	<b>1.05</b>
7	Capital maintenance of machine no. 1	2.00	0.00	0.00	<b>2.00</b>
8	Capital maintenance of machine no. 2	2.00	0.00	0.00	<b>2.00</b>
9	Capital maintenance of machine no. 4	2.00	0.00	0.00	<b>2.00</b>
10	Construction of new Tail Race from 50 MW old Tail Race to Neri-Nala for stability of system.	0.40	0.00	0.00	<b>0.40</b>
11	82.5 KV DG Set for HWE, Barot office, EWS supply in case of emergency along with room, foundation and cables.	0.20	0.00	0.00	<b>0.20</b>
12	Replacement of existing 01 no., 11/33 KV, 5MVA, three phase, power transformer of Shanan- Gwali circuit.	0.60	0.00	0.00	<b>0.60</b>
13	Procurement of 1No. New Hydraulic Butterfly Valve (PPV) along with Erection, Testing & Commissioning for Penstock No.2 feeding to machine no. 3&4 Shanan Power House, PSPCL Joginder Nagar.	0.00	11.91	0.00	<b>11.91</b>
14	Installation of toughened glass glazing in 50 MW Power House building.	0.00	0.55	0.00	<b>0.55</b>
15	Rehabilitation of 11 KV line Barot-1 feeder from Winch Camp to Head Gear. (Approx. distance 3.2 KM)	0.00	0.50	0.00	<b>0.50</b>
16	Replacement of existing 04 no., 132/66KV, 6MVA, single phase, power transformers of Shanan -Mandi circuit	0.00	4.50	0.00	<b>4.50</b>
17	Providing and fixing of CGI Sheets for roofs of residential & non-residential buildings.	0.00	0.00	2.50	<b>2.50</b>
18	Replacement of XLEP Cables of all machines and Transformers.	0.00	0.00	1.50	<b>1.50</b>
19	125 KV DG set for Shanan Colony and office supply in case of emergency along with room, foundation & cables.	0.00	0.00	0.35	<b>0.35</b>

S. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
20	Work for changing water supply line system along with water filter system for residential and non residential building at Shanan Powerhouse.	0.00	0.00	0.70	<b>0.70</b>
	<b>Total</b>	<b>15.30</b>	<b>17.46</b>	<b>5.05</b>	<b>37.81</b>

### Commission's Analysis:

In view of PSPCL's submission that the capital investment has been proposed either for replacement of equipment that has completed its useful life or for other essential schemes, the Commission approves the capital investment of Rs 37.81 Cr for new schemes.

### 3.3.6 Upper Bari Doab Canal Hydro Electric Project (UBDC)

Upper Bari Doab Canal Hydro Electric Project (UBDC) is located near Pathankot in Punjab. There are three Power Houses situated on this Canal fed from Madhopur head Works on river Ravi. This project comprises of two stages of Hydro Power stations having three Power houses each. Stage-I was commissioned during 1971-73 and has three power houses of 15 MW each (P.H-1, 2, 3) with total capacity of 45 MW. While, Stage-II was commissioned during 1989-92 and has three power houses of 15.45 MW each (P.H-1, 2, 3) with total capacity of 46.35 MW. Thus, the two stages of UBDC Hydro Electric Project have a total installed capacity of 91.35 MW.

### Spillover/ Deferred Schemes

#### PSPCL's Submissions:

The summary of capital investment proposed by PSPCL for UBDC in the 3<sup>rd</sup> Control Period is given in the following table:

**Table 32: Capital Investment proposed by PSPCL for Spillover/ Deferred Schemes of UBDC**

					Rs Cr.
S. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
1	Spare Generator Transformers 20 MVA 11/132 KV for UBDC Project.	0.22	0.00	0.00	<b>0.22</b>
2	R & M of C&R panels of 132 KV O/G feeders at UBDC Power House No.3 Stage I	0.57	0.00	0.00	<b>0.57</b>
3	Essential spare capitalize controller, DC breaker, firing circuit, thyristor etc.) for Stage I Digital Excitation and AVR System Make BHEL	1.30	0.00	0.00	<b>1.30</b>
4	Renovation and modernization of Protection and measurement system by replacing Electromagnetic relays and instruments with numerical relays and digital instruments of UBDC stage II Power houses.	2.33	0.00	0.00	<b>2.33</b>
5	R&M of Electrical overhead cranes & all the mechanical auxiliaries including Intake, Draft, Bye pass gates etc.	1.50	0.00	0.00	<b>1.50</b>
	<b>Sub Total</b>	<b>5.91</b>	<b>0.00</b>	<b>0.00</b>	<b>5.91</b>

**Commission's Analysis:**

The Commission had already approved capital investment of Rs. 133.29 Cr for the 2<sup>nd</sup> Control period including spillover and new schemes vide Order dated 03.12.2019 in Petition No. 18 of 2019. Out of these PSPCL has now claimed capital investment of Rs. 5.91 Cr in the 3<sup>rd</sup> Control Period for the spillover schemes from the 2<sup>nd</sup> Control Period. In view of PSPCL's submissions regarding the spillover schemes, the Commission approves the capital investment of Rs. 5.91 Cr. for the 3<sup>rd</sup> Control Period.



## New Schemes

### **PSPCL's Submissions:**

The summary of capital investment proposed by PSPCL for new schemes of UBDC in the 3<sup>rd</sup> Control Period is given in the following table:

**Table 33: Capital Investment proposed by PSPCL for New Schemes of UBDC**

S. No.	Particulars	Rs Cr.			
		FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
1	Replacement of Carbon Dioxide Flooding based Emulsifier system for fire protection of Generator Stator of Stage 1 & 2 of UBDC Power Houses No. 1, 2, 3.	1.84	0.00	0.00	1.84
2	Strengthening of hydel channel by re-storing eroded inner side slopes, eroded outer section of filling reaches, damaged slabs in lined section, surface drains on both banks of hydel channel & desilting of hydel channel.	1.50	1.50	1.50	4.50
3	Laying of premix bitumen carpet at roads of UBDC Project.	0.50	0.00	0.00	0.50
4	Fixing the leakage from the spirals of PH 1,2 & 3 and renovation of Toilets of the machine hall and control rooms	0.50	0.00	0.00	0.50
5	Replacement and rerouting of 11KV Auxiliary supply Feeder from 132 KV Interlinking substation Sarna to Powerhouse No.2	0.38	0.00	0.00	0.38
6	RLA and RMU Study of UBDC Stage II Power Houses and preparation of DPR, Technical Specs and commercial Specs for the recommended replacements	0.00	1.71	0.00	1.71
7	Renovation, Modernization and Up rating of underwater parts and associated equipment's UBDC Powerhouse No.1 Stage I 15 MW Unit as per RLA and RMU study	0.00	25.00	6.93	31.93
8	Renovation, Modernization and Up rating of underwater parts and	0.00	0.00	25.00	25.00

S. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
	associated equipments UBDC Powerhouse No.3 Stage I 15 MW Unit as per RLA and RMU study				
9	Up gradation of Obsolete microprocessor and procurement of essential spares (Input/output module, transducers, controlling valves) of Digital governing system for Stage I Make Andritz	0.00	0.00	2.00	<b>2.00</b>
	<b>Total</b>	<b>4.72</b>	<b>28.21</b>	<b>35.43</b>	<b>68.36</b>

### Commission's Analysis:

In view of PSPCL's submission that the capital investment has been proposed either for replacement of equipment that has completed its useful life or for other essential schemes for reliable, stable and safe operations of machines and systems, the Commission approves the capital investment of Rs 68.36 Cr. for the 3<sup>rd</sup> Control Period.

### 3.3.7 UBDC Stage -III (2X32 MW)

#### PSPCL's Submission:

PSPCL is in the process of developing the UBDC-III Hydro Electric Power Project through a global tender on an EPC basis (Engineering, Procurement and Construction) basis with a proposed generating capacity of 64 MW with an estimated expenditure of Rs. 557 Crore. A tender is to be floated for the Preparation of a Detailed Project Report (DPR) for UBDC Stage-III from an expert agency experienced in the field via an open e-tender system at an estimated cost of Rs. 3,77,97,760 -/only including establishment charges @ 25% of the gross amount.

PSPCL has already completed its feasibility study, UBDC Stage-III has been proposed for installation on the UBDC main canal near Pathankot. It envisages the development of the River Ravi's potential from the confluence point of UBDC Stage-I & II into the UBDC main canal upto Tibri before Headworks. Therefore, this project is the extension of UBDC Stage-I & II.

PSPCL has prayed to the Commission to approve the Capital Expenditure in the 3<sup>rd</sup> Control period, once the DPR is finalized.

**Commission's Analysis:**

PSPCL is yet to finalise the DPR of the scheme, and has requested the Commission to approve the capital investment once the DPR is finalized. The Commission shall consider the same once PSPCL comes up with the DPR in line with the provisions of the Regulations.

**3.3.8 Shahpur Kandi Power Project**

**PSPCL's Submission:**

The Shahpur Kandi Dam Project is a hydel power project of 206 MW capacity. Shahpur Kandi Dam project is located on the River Ravi in Pathankot district. The project will be constructed on the canal from Shahpur Kandi Barrage to Madhopur headworks, downstream of the existing Ranjit Sagar Dam. The water released by Ranjit Sagar Dam shall be utilized for generating power from this project.

The project will also provide irrigation to Punjab and Jammu and Kashmir (J&K).

The project was cleared as a multipurpose project at June 2000s price level by the Ministry of Water Resources, Government of India. The works of this project had to be stopped due to the objections raised by J&K authorities taking the plea of termination of bilateral agreement of 1979 between the two states in view of the passing of Punjab Termination of Agreements Act 2004 by Government of Punjab. However, with the intervention of Prime Minister's Office, an agreement was signed between the secretaries Irrigation of Punjab and J&K on March 3, 2017.

It is projected that the annual generation from this project will be 1069.87 MU. Government of Punjab would be making available to the Government of J&K 20% share in the total power generated at a mutually agreed rate of Rs. 3.50 per unit subject to approval of tariff by CERC.



**Table 34: Capital Investment proposed by PSPCL for Shahpur Kandi Power Project**

(Rs Cr.)

Sr. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26
1.	Shahpur Kandi Power Project	817.45	470.68	407.42

**Commission's Analysis:**

The Capital investment and Capitalisation shall be considered after the COD of the project.

**3.3.9 Summary (Hydroelectric Generating Stations)**

The summary of Capital investment and Capitalisation approved for hydroelectric generating stations is given in the following tables:

**Table 35: Summary of Capital Investment Approved by Commission for Hydroelectric Generating Stations (Rs Cr.)**

Sl. No	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total
<b>Spillover/ Deferred Schemes</b>					
1	Anandpur Sahib Hydel Project (Table 23)	18.77	62.84	62.89	144.50
2	Mukerian Hydel Project (Stage-I) (Table 25)	14.07	0.00	6.07	20.14
3	Mukerian Hydel Project (Stage-II)	0.00	0.00	0.00	0.00
4	Ranjit Sagar Dam HEP (Table 28)	27.86	0.53	31.99	60.38
5	Shanan Hydel Project (Table 30)	103.87	0.10	0.02	103.99
6	Upper Bari Doab Canal Hydro Electric Project (Table 32)	5.91	0.00	0.00	5.91
	<b>Subtotal</b>	<b>170.48</b>	<b>63.47</b>	<b>100.97</b>	<b>334.92</b>
<b>New Schemes</b>					
1	Anandpur Sahib Hydel Project (Table 24)	13.25	53.32	50.55	117.12
2	Mukerian Hydel Project (Stage-I) (Table 26)	6.07	66.75	107.5	180.32
3	Mukerian Hydel Project (Stage-II) (Table 27)	0.10	0.00	0.00	0.10
4	Ranjit Sagar Dam HEP (Table 29)	3.14	5.12	2.61	10.87
5	Shanan Hydel Project (Table 31)	15.30	17.46	5.05	37.81
6	Upper Bari Doab Canal Hydro Electric Project (Table 33)	4.72	28.21	35.43	68.36
	<b>Subtotal</b>	<b>42.58</b>	<b>170.86</b>	<b>201.14</b>	<b>414.58</b>
<b>Total (Hydroelectric Generating Stations)</b>					
1	Anandpur Sahib Hydel Project	32.02	116.16	113.44	261.62
2	Mukerian Hydel Project (Stage-I)	20.14	66.75	113.57	200.46
3	Mukerian Hydel Project (Stage-II)	0.10	0.00	0.00	0.10
4	Ranjit Sagar Dam HEP	31.00	5.65	34.60	71.25
5	Shanan Hydel Project	119.17	17.56	5.07	141.80
6	Upper Bari Doab Canal Hydro Electric Project	10.63	28.21	35.43	74.27
	<b>Total</b>	<b>213.06</b>	<b>234.33</b>	<b>302.11</b>	<b>749.50</b>

**Table 36: Summary of Capitalisation Approved by Commission for Hydroelectric Generating Stations (Rs Cr.)**

Sl. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total
	<b>Spillover/ Deferred Schemes</b>				
1.	Anandpur Sahib Hydel Project	18.77	62.83	62.89	144.49
2	Mukerian Hydel Project (Stage-I)	66.81	0.00	6.10	72.91
3	Mukerian Hydel Project (Stage-II)	0.00	0.00	0.00	0.00
4	Ranjit Sagar Dam HEP	35.60	0.53	0.10	36.23
5	Shanan Hydel Project	98.92	0.10	0.02	99.04
6	Upper Bari Doab Canal Hydro Electric Project	10.31	0.00	0.00	10.31
	<b>Subtotal</b>	<b>230.41</b>	<b>63.46</b>	<b>69.11</b>	<b>362.98</b>
	<b>New Schemes</b>				
1	Anandpur Sahib Hydel Project	13.25	53.32	50.55	117.12
2	Mukerian Hydel Project (Stage-I)	0.00	6.07	71.25	77.32
3	Mukerian Hydel Project (Stage-II)	0.00	0.10	0.00	0.10
4	Ranjit Sagar Dam HEP	3.13	1.04	3.25	7.42
5	Shanan Hydel Project	15.30	17.46	5.05	37.81
6	Upper Bari Doab Canal Hydro Electric Project	3.22	1.71	38.43	43.36
	<b>Subtotal</b>	<b>34.90</b>	<b>79.70</b>	<b>168.53</b>	<b>283.13</b>
	<b>Total (Hydroelectric Generating Stations)</b>				
1	Anandpur Sahib Hydel Project	32.02	116.15	113.44	261.61
2	Mukerian Hydel Project (Stage-I)	66.81	6.17	77.35	150.33
3	Mukerian Hydel Project (Stage-II)	0.00	0.00	0.00	0.00
4	Ranjit Sagar Dam HEP	38.73	1.57	3.35	43.65
5	Shanan Hydel Project	114.22	17.56	5.07	136.85
6	Upper Bari Doab Canal Hydro Electric Project	13.53	1.71	38.43	53.67
	<b>Total</b>	<b>265.31</b>	<b>143.16</b>	<b>237.64</b>	<b>646.11</b>

Note: Capitalization for above items has been considered as per PSPCL's submission for capitalization (Form-G-12) and according to Capital expenditure approved by the Commission in Table No. 35.

### 3.4 De-capitalization

In case of de-capitalisation of assets, the cost of acquisition of such asset as on the date of decapitalisation shall be deducted from the value of Gross Fixed Assets (GFA). The corresponding balance loan as well as corresponding equity shall be deducted from outstanding loan and the equity respectively in the year de-capitalization takes place. Necessary financial adjustments shall be made taking into consideration the year in which it was capitalised.

### 3.5 Financing Plan (Generation Business)

Financing has been considered as per the break up provided by PSPCL. The summary of financing plan for the approved capital investment is given in the following table:

**Table 37: Summary of Financing Plan approved by the Commission for Generation Business**

	<b>Business</b>			<b>(Rs. Crore)</b>
<b>Source of Funding</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>	<b>FY 2025-26</b>	<b>Total</b>
<b>Loan</b>	483.69	413.33	341.72	1238.74
<b>Equity</b>	-	-	-	-
<b>Consumers' contribution</b>	-	-	-	-
<b>Govt. Grants/Subsidies</b>	-	-	-	-
<b>Total</b>	483.69	413.33	341.72	1238.74



### 3.6 Summary (Generation Business)

The summary of capital investment approved by the Commission is provided in the following table:

**Table 38: Summary of capital investment proposed by PSPCL and the capital investment approved by the Commission for Generation Business**

Sl. No.	Particulars	Capital Investment Proposed (Rs. Cr.)				Capital Investment Approved (Rs. Cr.)			
		FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
		<b>Existing Plants</b>							
1	Guru Gobind Singh Super Thermal Plant (GGSSTP), Ropar (Table 21)	196.01	95.10	0.00	<b>291.11</b>	196.01	95.10	0.00	<b>291.11</b>
2	Guru Hargobind Thermal Plant(GHTP), Lehra Mohabbat (Table 21)	74.62	83.90	39.61	<b>198.13</b>	74.62	83.90	39.61	<b>198.13</b>
3	Anandpur Sahib Hydel Project (Table 35)	32.02	116.16	113.44	<b>261.62</b>	32.02	116.16	113.44	<b>261.62</b>
4	Mukerian Hydel Project (Stage-I) (Table 35)	20.14	66.75	113.57	<b>200.46</b>	20.14	66.75	113.57	<b>200.46</b>
5	Mukerian Hydel Project (Stage-II) (Table 35)	0.10	0.00	0.00	<b>0.10</b>	0.10	0.00	0.00	<b>0.10</b>
6	Ranjit Sagar Dam HEP (Table 35)	31.00	5.65	34.60	<b>71.25</b>	31.00	5.65	34.60	<b>71.25</b>
7	Shanan Hydel Project (Table 35)	119.17	17.56	5.07	<b>141.80</b>	119.17	17.56	5.07	<b>141.80</b>
8	Upper Bari Doab Canal HydroElectric Project (Table 35)	10.63	28.21	35.43	<b>74.27</b>	10.63	28.21	35.43	<b>74.27</b>
<b>Subtotal (Existing Plants)</b>		<b>483.69</b>	<b>413.33</b>	<b>341.72</b>	<b>1238.74</b>	<b>483.69</b>	<b>413.33</b>	<b>341.72</b>	<b>1238.74</b>
<b>Other Works</b>									
9	Shahpur Kandi Power Project (Table 34)	817.45	470.68	407.42	<b>1695.55</b>	0.00	0.00	0.00	<b>0.00</b>
10	<b>Total</b>	<b>1301.14</b>	<b>884.01</b>	<b>749.14</b>	<b>2934.29</b>	<b>483.69</b>	<b>413.33</b>	<b>341.72</b>	<b>1238.74</b>

**Table 39: Summary of Capitalization of PSPCL Generation Business.**  
(Rs. Crore)

Sr. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total
1.	Thermal Generating Stations (Table No.22)	101.97	385.26	39.61	526.84
2.	Hydro Electric Generating Stations (Table No.36)	265.31	143.16	237.64	646.11
3.	<b>Total Capitalization Generation Business:</b>	<b>367.28</b>	<b>528.42</b>	<b>277.25</b>	<b>1172.95</b>

The Scheme wise capitalization approved by the Commission for the Generation Business is attached as **Annexure-1**.

# Chapter 4 – Capital Investment Plan for Distribution Business

## 4.1 Distribution Works

### 4.1.1 System Augmentation, System Improvement and Loss Reduction Schemes

#### PSPCL's Submissions:

PSPCL, in its Business Plan including CIP petition, had proposed a capital investment of Rs 3680.81 Cr. for this scheme. The summary of proposed capital investment is provided in the following table:

**Table 40: Capital Investment proposed by PSPCL for System Augmentation System Improvement and Loss Reduction Schemes**

Rs Cr.

S. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total
1	Providing 11KV manual operative switched capacitors	10.46	12.16	13.27	35.89
2	LT Capacitors	10.98	14.23	12.46	37.67
3	Installation of Smart Meters	129.27	184.71	284.09	598.07
4	DT Metering	8.28	10.71	14.89	33.88
5	Any Other	0.48	0.66	5.64	6.78
6	Aug. of Existing HT/ LT Lines	199.57	213.62	226.85	640.04
7	Augmentation of existing transformers	182.36	198.13	207.49	587.98
8	Distribution System Improvement DT & HT/LT	474.58	509.89	535.08	1519.55
9	Rain Water Harvesting / Recharging	10.34	10.55	10.33	31.22
10	Other Schemes	57.62	64.14	67.97	189.73
	<b>Total</b>	<b>1083.94</b>	<b>1218.80</b>	<b>1378.07</b>	<b>3680.81</b>

#### Commission's Analysis:

In respect of Distribution System Improvement DT & HT/LT PSPCL vide reply dated 27.10.2022 submitted that the reason for increase in funds required under system improvement is due to delayed implementation of VDS scheme and that the expenditure being incurred on installation of AP transformers would be higher.



Further, due to the aftermath of Covid pandemic the material cost has risen up and increased the capex requirements as stated by PSPCL, in reply to the Commission's query. PSPCL vide reply dated 4.11. 2022 submitted that there has been an average increase in procurement cost of material of around 25% post pandemic. The actual expenditure under the Distribution System Improvement DT & HT/LT scheme cannot be compared with the 2<sup>nd</sup> MYT expenditure as the work and expenditure were significantly affected adversely during the covid pandemic. PSPCL has further submitted that in the financial year 2021-22 the expenditure on System Augmentation, System Improvement and T&D Loss Reduction scheme was a total of Rs. 876.13 Cr. In the first half (April to September) of financial year 2022-23, the expenditure has been Rs. 583.07 Cr. Therefore, keeping in view actual expenditure for FY 2021-22, first half of FY 2022-23 and projected load growth of 5%, the proposed expenditure amount of Rs. 1519.55 Crore (Sr. No.8 in Table 40) is fully justified for the 3<sup>rd</sup> MYT as stated by PSPCL.

With regards to PSPCL's submission regarding VDS, the Commission vide Order dated 22.06.2022 in petition no. 34 of 2022 has categorically ruled that augmentation of service line/cable/transformer and the power system for this VDS, if required, shall be carried out by PSPCL at its own cost. As such there is no rationale to consider the inflated capital expenditure for Distribution System Improvement DT & HT/LT on the grounds of delayed implementation of the VDS scheme.

Further, with regards to the 2<sup>nd</sup> justification submitted by PSPCL vide reply dated 4.11. 2022 the Commission observes that Distribution System Improvement DT & HT/LT works is a part of System Augmentation, System Improvement and T&D Loss Reduction scheme which includes other schemes also. The Commission in the 2<sup>nd</sup> MYT Control Period had approved capital investment of Rs. 657.23 Cr for Distribution System Improvement, DT & HT/LT works while total capital investment of Rs. 2788.20 Cr was approved by the Commission for overall System Augmentation, System Improvement and T&D Loss Reduction scheme.

PSPCL has now sought Rs.1519.55 Cr. for Distribution System Improvement, DT & HT/LT works and total of Rs.3680.81 Cr. for overall System Augmentation,

System Improvement and T&D Loss Reduction schemes. Thus, comparing projections made for one individual work with expenditure incurred on the entire system may not give a true picture of the actual capital expenditure incurred on the said work. As such the Commission is not inclined to accept PSPCL's submission in this regard. Further, PSPCL has not submitted any details of circle wise/zone wise lists of the proposed works. The Commission in the CIP Order dated 03.12.20219 in Petition No. 18 of 2019 had approved CIP for Distribution System Improvement, DT & HT/LT lines as Rs. 212.28 Cr., Rs. 218.33 Cr. and Rs. 226.62 Cr. for FY 2020-21, FY 2021-22 and FY 2022-23 respectively. Considering the impact of inflation (15%) and load growth (5%) the estimated CIP for FY 2023-24 works out to approx. Rs. 273 Cr. Rounding off the same the Commission thus allows capital investment of Rs. 275 Cr. for FY 2023-24. Thereafter considering an increase of 15% the Commission allows Rs. 316 Cr for FY 2024-25 and Rs. 363 Cr. for FY 2025-26 respectively i.e. total Rs.954 Cr. towards Distribution System Improvement DT & HT/LT during the 3<sup>rd</sup> MYT Control period.

With regard to "Other Scheme" details, PSPCL vide reply dated 15.09.2022 submitted that the amount claimed under the head "other schemes" (Sr. No. 10, Table 40) relates to Deposit Works for widening of roads/new highways. These are tentative and based upon verbal discussion with various stakeholders. As such no DPRs can be prepared for these works. However, in Annexure F of the same reply PSPCL has submitted that the works relate to replacement of 9m poles with 11m poles and for laying HT/LT cables. Further, vide reply dated 12.10.2022 PSPCL has submitted that while the works are pledged/contributory in nature, the asset is created for the benefit of the utility. For this reason, these have been included in CIP. When calculating the net capital requirement, only the cost of additional borrowing for financing the works may be taken into account. Further, vide reply dated 04.11.2022 PSPCL has clarified that Rs.189.73 Cr. pertains to replacement of 9m poles with 11m poles and for laying HT/LT cables. However, no details of the proposed works has been provided in the Revised DPR of the Distribution Works for System Augmentation & Improvement and T&D loss Reduction Schemes in the State of Punjab. The Commission observes that

PSPCL has been consistently changing its stand on the scope of work and using the same work to justify expenditure under different heads. Further, the Commission has already considered and allowed works for augmentation of HT/LT lines and Distribution Improvement DTs and HT/LT under System Improvement, augmentation and Loss Reduction Schemes. Without the detailed breakup of the particular works relating to replacement of 9m poles with 11m poles and for laying HT/LT cables there are fair apprehensions of double accounting of the same works under augmentation of HT/LT lines and Distribution System Improvement DTs and HT/LT. While the Commission allows capital investment of Rs. 189.73 Cr. pertaining to replacement of 9m poles with 11m poles and for laying HT/LT cables, the Commission also directs PSPCL that the capital expenditure incurred under this work is to be separately accounted for to ensure there is no duplication or double accounting. In case PSPCL is not able to comply with the above directions of the Commission and maintain separate accounts of these works, the expenses incurred on the same will not be allowed at the time of truing-up.

Similarly, with regard to works under the head 'Any other' (Sr. 5 in Table 40) PSPCL vide reply dated 15.09.2022 submitted that the amount claimed relates to Deposit Works while in Annexure F of the same reply PSPCL submitted that the same relates to replacement of electromechanical meters. In response to the Commission's query regarding the difference in scope of works under the head 'Any other' works, PSPCL vide reply dated 4.11.2022 clarified that works related to Rs. 6.78 Cr. under the DPR are considered as replacement of electromechanical meters/non MD compliant electronic meter and for provision of meter boxes. In view of the submission's made by PSPCL the Commission approves capital investment of Rs. 6.78 Cr for the 3<sup>rd</sup> MYT Control Period.

In respect of utilization of dismantled Distribution Transformers, PSPCL vide reply dated 15.09.2022 submitted that wherever augmentation of distribution transformer is involved the dismantled lower capacity transformer is used for augmentation of that capacity transformer whereas lowest capacity 6.3 kVA transformers will mostly be issued to revenue works i.e. replacement against damaged distribution transformers and for LT less release of new connection



wherever feasible. The Commission approves the proposed capital investment for augmentation of existing transformers. However, in the CIP and BP Order dated 03.12.2019 in Petition No. 18 of 2019 the Commission had directed PSPCL to submit the following information for True Up of the respective years:

- number of transformers being reused after augmentation works.
- number of repaired transformers after damage that have been reused.
- the total annual value of damaged transformers being replaced before the completion of their useful life.

PSPCL is yet to furnish the said details. Accordingly, the Commission reiterates its earlier directive with regards to furnishing of the above information along with the True-up Petition and ensure timely compliance of the said directive. In case the information is not supplied as directed within the next two months future expenditure sought under this scheme may be disallowed.

The Commission understands the importance of reduction of technical and commercial losses and the significant long-term benefits that shall accrue to the consumers as a result of such reductions. In respect of installation of smart meters, the Commission observes that PSPCL in response to earlier directives has submitted that it has initiated the process to procure smart meters. Tender Enquiry MQP-187 was floated for procurement of 3 lac single phase smart meters with Meter Data Management (MDM) and a Tender Enquiry no. MQP-201 for procurement of 5 lac single phase smart meters without MDM, MQP-196 for procurement of 1 lac three phase smart meters, MQP-195 for Design, Supply, Testing, Commissioning, Integration, Reading, Analysis and 5 year O&M for 30,000 LT CT smart meters. Also, Ministry of Power's Notification dated 17.08.2021 directs that all consumers (other than agricultural consumers) in areas with communication network shall be supplied electricity with Smart meters working in prepayment mode conforming to relevant IS within the timelines specified in the said notification. In view of PSPCL's submission regarding procurement of smart meters and MOP's notification, the Commission approves capital investment of Rs. 598.07 Cr. for the 3<sup>rd</sup> Control Period.

In respect of DT metering, it is observed that PSPCL has failed to submit an

Energy Audit Report till date, though there are meters already installed on some DTs. The Commission approves the capital investment proposed for this scheme and directs that a detailed feeder-wise Energy Audit Report is submitted after installation and commissioning of the DT meters, along with the Tariff petition for FY 2024-25 for the feeders on which DT meters are installed. PSPCL is directed to complete the installation of DT meters feeder-wise to enable feeder-wise Energy Audit. Further, PSPCL is directed to submit a quarterly status report of installation of DT metering.

The Commission approves the remaining schemes i.e., Providing 11KV manual operative switched capacitors, LT capacitors, Aug. of Existing HT/ LT Lines, Augmentation of existing transformers and Rain Water Harvesting / Recharging as per PSPCL's submissions.

The summary of capital investment approved for system improvement and system augmentation schemes is given in the following table:

**Table 41: Capital investment approved by the Commission for System Augmentation Schemes and System Improvement Schemes**

Rs Cr.

S. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total
1	Providing 11KV manual operative switched capacitors	10.46	12.16	13.27	35.89
2	LT Capacitors	10.98	14.23	12.46	37.67
3	Installation of Smart Meters	129.27	184.71	284.09	598.07
4	DT Metering	8.28	10.71	14.89	33.88
5	Any Other (Replacement of Electromechanical meters)	0.48	0.66	5.64	6.78
6	Aug. of Existing HT/ LT Lines	199.57	213.62	226.85	640.04
7	Augmentation of existing transformers	182.36	198.13	207.49	587.98
8	Distribution System Improvement DT & HT/LT	275.00	316.00	363.00	954.00
9	Rain Water Harvesting / Recharging	10.34	10.55	10.33	31.22
10	Other Schemes (Replacement of 9 meter poles with 11 meter poles)	57.62	64.14	67.97	189.73
	<b>Total</b>	<b>884.36</b>	<b>1024.91</b>	<b>1205.99</b>	<b>3115.26</b>

PSPCL, in its petition, has sought capital investment of Rs. 25237 Cr. under the Revamped Distribution Sector Scheme (RDSS) and has submitted that it has approached the State Govt. for approval of RDSS scheme. As and when the approval of the State Government for the aforesaid scheme is received, the same shall be filed before the Commission for its approval. Since the scope of work under the RDSS scheme is identical to the scope of work under System Augmentation, System Improvement and Loss Reduction Schemes, hence the capital investment approved for the similar works under System Augmentation, System Improvement and Loss Reduction Schemes shall be reduced to the extent that will be finalized and approved under the RDSS scheme.

#### **4.1.2 Implementation of IT Works:**

##### **PSPCL's Submissions:**

PSPCL, in its Business Plan including CIP petition, had proposed a capital investment of Rs 543 Cr. for this scheme. However, vide reply dated 04.11.2022, PSPCL revised the capital investment to Rs 25.64 Cr. as the following works have become part of the RDSS scheme or has been amended considering discussion with PFC for DPR of RDSS scheme:

- a) DRC on cloud-part of RDSS scheme
- b) SAP based licenses, MPLS connectivity, Upgradation of IT Hardware, UCCS Unified Billing Solution-merged under single billing solution under RDSS
- c) ERP updation from 2024-25 under RDSS
- d) Procurement of new email solution under RDSS

##### **Commission's Analysis:**

The Commission appreciates the capital investment in respect of upgrading the current IT infrastructure. In view of PSPCL's submissions, the Commission approves the capital investment of Rs 25.64 Cr as shown in the following table:-



**Table 42: Capital Investment approved by the Commission for implementation of IT works**

Rs Cr.

S. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
1	Implementation of IT Works	13.64	6.00	6.00	25.64

#### 4.1.3 Release of New Connections including AP connections

##### **PSPCL's Submissions:**

PSPCL submitted that under Universal service obligation stipulated by the Electricity Act, 2003, PSPCL is obligated to provide new connection/supply to the Applicant as per timelines specified. For releasing of such new connections, network expansion is required. Based on the past trend of new connections released, PSPCL has projected capital expenditure for Control period. The capital expenditure to be incurred for the release of new connections during Control Period is shown in the table below:

**Table 43: Capital Investment proposed by PSPCL for release of new connections**

Rs Cr.

S. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
1	Release of new connections other than AP	52.09	55.16	62.22	169.47
2	Release of General AP connections	14.54	20.97	23.02	58.53
3	Release of AP connections Priority Scheme	16.73	20.90	22.55	60.18
	<b>Total*</b>	<b>83.36</b>	<b>97.03</b>	<b>107.79</b>	<b>288.18</b>

##### **Commission's Analysis:**

PSPCL has submitted in the petition that Rs. 288.26 Crore are required for release of Connections during 3<sup>rd</sup> MYT Control period and projected receipt of Rs. 1103 Crore as service Connection charges. To the Commission's query that whether submitted CIP against release of connections is after considering receipt of service connections charges or not, PSPCL vide reply dated 12.10.2022 submitted that total

projected expenditure on release of new connections during 3<sup>rd</sup> MYT is Rs. 1391.26 Crore out of which Rs. 1103 Crore will be recovered from the consumers as service connection charges and fund required is Rs. 288.26 Crore.

Further, in response to the Commission's query regarding variation in capex for release of connections and service connection charges, PSPCL vide reply dated 4.11.2022 submitted that material cost has escalated around 25% post pandemic and there has been no revision in service connection charges since 2019. For seeking an increase in the cost of service connection charges, necessary application will be moved in due course of time for getting the Commission's approval.

The Commission has taken note of PSPCL's submission. However, it is observed that capital expenditure for release of new connections is to be funded through service connection charges. Service Connection charges are to be paid by consumers taking new connections and cannot be passed on to other existing consumers of the State. Accordingly, the Commission disallows the capital investment of Rs.288.18 Crore for release of new connection. As such, to bridge the shortfall in the current charges, PSPCL is at liberty to file for revision in cost-of-service connection charges alongwith complete details separately before the Commission.

#### **4.1.4 Sub-Transmission works and allied Projects**

##### **PSPCL's Submissions:**

PSPCL submitted that to provide relief to existing overloaded transmission lines and to cater to the new loads of consumers in the State, continuous system augmentation is required. TS organization is vested with the all the construction works of 66KV Sub-Stations and Transmission lines being carried out in the state of Punjab. The construction of works consists of new 66KV S/S, enhancement of transformer capacity by way of providing Additional Power Transformers and augmentation of the existing transformers. Similarly, the construction of new 66KV transmission lines and up-gradations of the existing lines is also undertaken for efficient evacuation of power supply from 220 KV or 132 KV S/S of PSTCL as well as for providing power supply at 66 KV voltage level to all the PSPCL consumers.

All the Transmission works to be carried out in the state of Punjab are based on the Transmission Works List prepared by the Planning organization based on the loading conditions of Sub-Stations and Transmission lines.

The objective of the project scheme is to give relief to 66 KV over loaded lines and Sub-Stations to give uninterrupted supply to the State of Punjab to reduce the losses and improve the voltage regulation of the Transmission System. The capital investment proposed by PSPCL is given in the following table:

**Table 44: Capital investment proposed by PSPCL for sub transmission works outside the consumer premises**

Rs Cr.

S. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
1	Transmission system works	350.00	400.00	450.00	1200.00

**Commission's Analysis:**

The Commission observes that as per PSPCL's submission in the petition and subsequent clarifications given vide email dated 19.12.2022 and 23.12.2022 that out of the total Rs. 1200 Crore sought for sub-transmission works, Rs. 153.19 Crore relates to spillover works relating to earlier Control Periods designated as 'Category-A', while Rs. 315.89 Crore relates to works related to grids/sub-transmission works having loading more than 90% designated as 'Category-B' and Rs. 172.82 Crore relates to grids/sub-transmission works having loading more than 80% but less than 90% designated as 'Category C'. Further, there are works designated as 'Category D' amounting to Rs. 506.61 Crore relates to works to be planned while Rs. 50.06 Crore relates to works not planned (Total Rs. 556.67 Crore). The Commission notes that the Capital Investment Plan and Business Plan Petition has been filed before the Commission with the approval of Whole time Directors (WTD's) which has been further ratified by the BoD of PSPCL. As such the details of the sub-transmission works mentioned as planned/to be planned/unplanned have been perused and approved by the BoD. Considering the planned augmentation in distribution capacity from approximately



14000 MW to around 18000 MW, it is understood that there is need for capital investment related to sub-transmission works. Accordingly, the Commission approves the Capital investment of Rs. 1200 Crore in line with PSPCL's submission for the 3<sup>rd</sup> MYT Control Period, the details of which are provided in **Annexure 2**. However, with regards to the category D 'works to be planned/unplanned works' amounting to Rs. 556.67 Crore, the Commission directs PSPCL to provide the scheme-wise justification of the works actually done along with WTD's/BoD approval where these works have been approved to be carried out alongwith other details during the True-up of the CIP. The capital investment approved by the Commission is given in the following table:-

**Table 45: Capital investment approved by the Commission for sub transmission works outside the consumer premises**

Rs. Crore					
S. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
1	Transmission system works	350.00	400.00	450.00	1200.00

#### 4.1.5 Civil Works

##### **PSPCL's submission:**

PSPCL in its capital investment plan for DS civil works has proposed capital expenditure towards Civil design works in which a substantial investment is on the Construction of a Multi-storeyed Integrated Corporate Office Building at Badunagar, Patiala, renovation of distribution sector buildings and extension works in 66kV substations across the state.

PSPCL has proposed that a Multi-storeyed Integrated Corporate Office Building, wherein offices presently housed in Shakti Vihar sheds, thermal sheds and some other offices located in the head office secretariat complex, and in a 66 kV grid colony may be accommodated. Offices of various heads of departments are proposed to be accommodated in this new corporate complex.

The Distribution Subdivision (DS) Buildings in State of Punjab are around 50 years

old. Their structural condition is continuously eroding. These buildings cater to thousands of consumers of the state daily. These buildings thus need up-gradation and renovation.

With continuous increase in power demand, the transformers installed in 66 KV Sub Stations get overloaded. Installation of new breakers in control room buildings of these sub stations are required to deal with overloading of transformers, for which extra space and extension of control room buildings is required. There is need for extension of 66 KV sub stations so that continuous supply of electricity can be made available to the consumers of PSPCL.

PSPCL has proposed capital investment of Rs. 20 Cr for the Renovation of VIP Guest House during the 3rd MYT Control Period.

The projected capital expenditure during the Control Period is shown in the following table:

**Table 46: Capital investment proposed by PSPCL for Civil works**

					Rs Cr.
S. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
1	Multi-storeyed Integrated Corporate Office Building at Badunagar, Patiala	19.95	46.55	59.85	<b>126.35</b>
2	Renovation of DS Buildings	65.00	70.00	70.00	<b>205.00</b>
3	Renovation of VIP Guest House	10.00	10.00	0.00	<b>20.00</b>
4	Extension works of sub-station	15.00	20.00	25.00	<b>60.00</b>
5	Other	2.07	4.68	0.50	<b>7.25</b>
	<b>Total</b>	<b>112.02</b>	<b>151.23</b>	<b>155.35</b>	<b>418.60</b>

**Commission's Analysis:**

PSPCL vide reply dated 15.09.2022 submitted that for the construction of a Multistoreyed Integrated Corporate Complex (MICO), an expenditure of Rs. 95 Cr is likely to be incurred. For capitalization of this work 33% i.e. employee cost and interest has been added due to which CIP of Rs. 126.35 Cr has been projected. The Commission vide Order dated 20.06.2014 had approved capital investment of Rs. 75 Cr. towards this scheme. As per the DPR (annexure-H1) submitted along

with the CIP petition the project cost is now shown as Rs. 95 Cr. out of which Rs. 10 Cr. will be arranged from internal sources of PSPCL and the balance amount of Rs. 85 Cr. shall be covered through loans. The Commission observes that the scheme is pending implementation since 2014 and has not started even after almost 8 years. Although for the 3<sup>rd</sup> MYT Control Period, the Commission approves capital investment of Rs. 126.35 Cr. however, PSPCL is directed to implement and complete the scheme in a timely manner ensuring that there are no cost overruns due to any delay since these will not be allowed to pass on to the consumers.

With regards to renovation of DS buildings, PSPCL has sought capital expenditure of Rs. 205 Cr. The Commission in the 2<sup>nd</sup> MYT Control period had approved the capital investment of Rs 100 Cr. for the entire 2<sup>nd</sup> Control Period towards DS civil works. In reply to the Commission's query related to spill over works for DS civil works, PSPCL vide reply dated 04.11.2022 submitted that spill over works related to DS Civil works is Rs. 90 Cr. The DPR submitted by PSPCL for civil works is related to renovation of 144 DS Buildings of PSPCL which has been proposed to be carried out during the 3<sup>rd</sup> Control Period. Accordingly, the Commission approves the capital investment of Rs 205 Cr. for entire 3<sup>rd</sup> Control Period for renovation of DS buildings in line with PSPCL's submission. However, PSPCL is directed to implement and complete the scheme in a timely manner ensuring that no cost overruns due to delay are sought to be passed on to the consumers.

PSPCL vide reply dated 15.09.2022 submitted that it has planned 5 No. VIP Guest Houses to be taken in FY 2023-24 (in Jogindernagar, Ludhiana, Bhatinda, Jalandhar and Amritsar) and 5 No. in FY 2014-15 (in Anandpur Sahib, Batala, Ferozepur/Moga, Hazipur and Gurdaspur). The details of the works includes Renovation, Capacity Enhancement of existing VIP Guest Houses along with providing them with latest infrastructure upgradation and amenities, which are desired to meet today's demands.

With regards to renovation of guest house and extension works of sub-stations the Commission approves the capital investment of Rs. 80 Crore (Rs.20 Crore + Rs. 60 Crore) for the entire 3<sup>rd</sup> Control Period:



The projected capital expenditure approved by the Commission during Control Period is shown in the following table:-

**Table 47: Capital Investment approved by the Commission for Civil works (Rs. Crore)**

S. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total (MYT)
1	Multi-storeyed Integrated Corporate Office Building at Badunagar, Patiala	19.95	46.55	59.85	126.35
2	Renovation of DS Buildings	65.00	70.00	70.00	205.00
3	Renovation of VIP Guest House	10.00	10.00	0.00	20.00
4	Extension works of sub-station	15.00	20.00	25.00	60.00
5	Other	2.07	4.68	0.50	7.25
	<b>Total</b>	<b>112.02</b>	<b>151.23</b>	<b>155.35</b>	<b>418.60</b>

#### 4.1.6 Revamped Distribution Sector Scheme (RDSS)

##### **PSPCL's submission:**

The Revamped Reforms-based and Results-linked, Distribution Sector Scheme seeks to improve operational efficiencies and financial sustainability by providing financial assistance to DISCOMs for strengthening of supply infrastructure based on meeting pre-qualifying criteria and achieving basic minimum benchmarks in reforms.

PSPCL has decided to install Smart Prepaid Meters for its consumers. Currently, the billing efficiency of PSPCL is 87.67%. Smart Prepaid Meters can be an important component of the solution to billing and collection challenges. Smart Prepaid Meters increase the efficiency of these billing and collection process by reducing human intervention and consequently empowering both consumers and PSPCL.

PSPCL has prioritized the areas for deployment of Smart Prepaid Metering Solutions. The areas covered are divisions of Atal Mission for Rejuvenation and Urban Transformation (AMRUT) Cities having AT&C losses more than 15%, Industrial & Commercial Consumers (1-phase whole current & 3-Phase Whole

Current Meters), Government Consumers at Block Level & Above, Urban Divisions having losses more than 15% and Rural Divisions having losses more than 25%. This work is to be completed by Dec-2023 in the first phase.

In the second phase, deployment of Smart Prepaid Metering solutions for consumers of Urban Divisions with AT&C Loss of 15% or less & Other Divisions with AT&C Loss of 25% or less in base year will be completed by Mar-2025.

To leverage the latest metering technology in Energy Auditing at DT level, it has been envisaged that DT meters compatible for Automated Meter Reading (AMR) will be deployed. This will enable DT level energy auditing and in developing area specific energy strategy to reduce losses. PSPCL has planned the DT metering in a phased manner. In the first phase, up to Dec-2023 the DTs having capacity more than 25 kVA except Agriculture, HVDS, other T/F up to 25 KVA will be metered. In the second phase the remaining DTs will be metered.

Based on the targeted actions in terms of metering, infrastructure works and reform measures, the targeted results at the end of the scheme period, annual targets as well as baseline data are prepared.

PSPCL has approach the State Govt. regarding approval for the RDSS scheme. As and when the approval of the aforesaid scheme is received, the same shall be filed before the Commission for its approval. The planned expenditure for the aforesaid scheme is tabulated as under:

**Table 48: Capital investment proposed by PSPCL for RDSS**  
(Rs. Cr.)

S. No.	Particulars	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	Total
1	Smart Prepaid Metering for Consumers/ Feeder/ DT/ Boundary	3120	3120	1560	0	7800
2	Loss Reduction Works	1229	2459	6146	2458	12292
3	System Strengthening and Modernisation	0	1183	2129	1420	4732
4	SCADA/ DMS/ RT-DAS	41	103	144	124	413
	<b>Total</b>	<b>4390</b>	<b>6865</b>	<b>9979</b>	<b>4002</b>	<b>25237</b>

### **Commission's Analysis:**

PSPCL vide reply dated 12.10.2022 has submitted that in the RDSS scheme PSPCL has proposed works related to strengthening of distribution infrastructure and transmission networks as per guidelines of the schemes which is as under:

“Metering: Prepaid Smart metering for consumers, and System metering at Feeder and Distribution Transformer level with communicating feature along with associated Advanced Metering infrastructure (AMI) will be done in Total Expenditure (Capital Expenditure + Operational Expenditure) (TOTEX) mode through PPP, to facilitate reduction of Distribution losses and enable automatic measurement of energy flows and energy accounting as well as auditing.

Distribution infrastructure works: A list of works is given below:

- i. Construction of new substations, augmentation of substations
- ii. Provision of Armoured/Aerial bunched Cables (ABC) or High Voltage Distribution System in high loss areas
- iii. Segregation/Bifurcation of feeders and other allied works
- iv. Replacement of conductors, which are old/frayed
- v. Additional HT lines to improve quality of supply
- vi. Information Technology (IT)/Operational Technology (OT) works
- vii. Supervisory Control and Data Acquisition (SCADA) and Distribution Management System (DMS) in urban areas
- viii. Under-ground cabling works
- ix. Any other works required for system strengthening and loss reduction”

PSPCL submitted that DPRs with the detail of works to be executed under RDSS are under preparation and the actual quantity and amount of DPRs shall be known only after the approval by the Monitoring Committee. Therefore, the exact quantity of identical works with corresponding amount in RDSS cannot be worked out at this stage as the quantities and amount will change in accordance with the approval of the Monitoring Committee.

In view of PSPCL's submission, the Commission approves, in principle the capital investment under RDSS scheme. However, the exact scope of work and capital investment amount shall be approved later whenever PSPCL gets the RDSS scheme approved from the State Govt. and files the same before the Commission



for approval. Further, as reiterated in the earlier Para 4.1.1 of this Order, the capital investment for the schemes having similar scope of work under System Augmentation, System Improvement and Loss Reduction Schemes shall be reduced to the extent of the amount finalized and approved under this scheme.

#### **4.1.7 Contributory works**

##### **PSPCL's submission:**

PSPCL, in its Business Plan including CIP petition, had proposed a capital investment of Rs 313.99 Cr. towards contributory works.

##### **Commission's Analysis:**

PSPCL vide reply dated 15.09.2022 submitted that DPRs of contributory works has not been prepared as expenses on these works is less than 20% (in view of Regulation 9.8) of the total capital outlay of the year. Further vide reply dated 27.10.2022 PSPCL submitted that expenditure shown on contributory works has been estimated on the basis of the previous MYT control period. The details regarding the same are not available yet. However, these should not be considered for financing as the funds will be contributed by the consumers.

As per Regulation 9.8 of the Tariff Regulations, 2022 provides as under:

*"9.8 The Applicant shall submit the Detailed Project Reports (DPRs) for all the schemes as per Part (a) and (b) above which shall include:*

- (a) Purpose of investment;*
- (b) Broad Technical Specifications of the proposed investment and supporting details;*
- (c) Capital Structure;*
- (d) Capitalization Schedule;*
- (e) Financing Plan, including identified sources of investment;*
- (f) Physical targets;*
- (g) Cost-benefit analysis;*
- (h) Prioritization of proposed Investments:*

*Provided that DPRs will not be necessary for schemes under Rs. 10 Crore for Generation and Transmission Businesses, Rs. 5 Crore for Distribution Business and Rs. 1 Crore for SLDC: Provided further that the total capital*

*expenditure on non-DPR schemes in any year should not exceed 20% of that for DPR schemes during that year.”*

From the above it is clear that DPRs are not necessary for schemes under Rs. 10 Crore for Generation and Transmission Businesses, Rs. 5 Crore for Distribution Business and Rs. 1 Crore for SLDC. While the projected capital investment for contributory works amounts to Rs. 313.99 Cr. PSPCL cannot read and interpret any standalone clause and use it for its benefits. Regulations have to be read and construed in tandem. PSPCL ought to have prepared and submitted DPRs of contributory works amounting to Rs. 313.99 Cr. Further, PSPCL's contention that it has projected expenditure of contributory works on the basis of previous MYT control period cannot be accepted as for the 2<sup>nd</sup> MYT Control Period the Commission had approved capital investment of only Rs. 10.90 Crore for the entire 2<sup>nd</sup> Control period. Since PSPCL has not submitted the details of the contributory works and since, such works are funded through consumers contributions, the Commission is not inclined to approve the capital investment for contributory works at this stage as no details have been submitted. However, capital expenditure on contributory works shall be considered during the true-up based on the actual capital expenditure incurred and shall be allowed over and above the total capital investment approved in this Order for the 3<sup>rd</sup> Control Period after accounting for contributions received from the consumers.

#### **4.1.8 Shifting of Meters**

##### **PSPCL's submission:**

PSPCL, in its Business Plan including the CIP petition, had proposed a capital investment of Rs 49.09 Cr. towards shifting of meters.

##### **Commission's Analysis:**

PSPCL vide reply dated 12.10.2022 submitted that a total of 263171 smart meters will be shifted during the 3<sup>rd</sup> MYT Control period. The Commission approves the capital investment for shifting of meter outside premises as per PSPCL's submissions. The capital investment approved by the Commission is given in the following table:-

**Table 49: Capital investment approved by the Commission for shifting of meters.**

S. No.	Particulars	Rs. Crore			Total (MYT)
		FY 2023-24	FY 2024-25	FY 2025-26	
1	Shifting of meters	22.23	12.63	14.23	49.09

#### 4.1.9 Others

##### **PSPCL's submission:**

PSPCL, in its Business Plan including the CIP petition had proposed a capital investment of Rs. 7.52 Cr. under the head 'Others'

##### **Commission's Analysis:**

PSPCL vide reply dated 15.09.2022 submitted that provision has been made for prospective works of road widening and new road laying and are tentative. In view of the same it is not possible to provide complete detail of these projects as of now. PSPCL has failed to provide the breakup of works and their respective estimated investments. Thus, the Commission has not considered the same for approval.



#### 4.1.10 Summary (Distribution Business)

The summary of Capital investment approved for Distribution Business is given in the following table:

**Table 50: Summary of capital investment proposed by PSPCL and the capital investment approved by the Commission for Distribution Business**

(Rs. Cr)

S. No.	Particulars	Submitted by PSPCL				Approved by the Commission			
		FY 2023-24	FY 2024-25	FY 2025-26	Total	FY 2023-24	FY 2024-25	FY 2025-26	Total
1.	System Augmentation, System Improvement and Loss Reduction (Table 41)	1083.94	1218.80	1378.07	<b>3680.81</b>	884.36	1024.91	1205.99	<b>3115.26</b>
2.	IT Works (Table 42)	13.64	6.00	6.00	<b>25.64</b>	13.64	6.00	6.00	<b>25.64</b>
3.	Release of New Connection including AP	83.36	97.03	107.79	<b>288.18</b>	0.00	0.00	0.00	<b>0.00</b>
4.	Sub Transmission System (Table 45)	350.00	400.00	450.00	<b>1200.00</b>	350.00	400.00	450.00	<b>1200.00</b>
5.	Civil Works (Table 47)	112.02	151.23	155.35	<b>418.60</b>	112.02	151.23	155.35	<b>418.60</b>
6.	Contributory Works*	90.43	103.29	120.27	<b>313.99</b>	0.00	0.00	0.00	<b>0.00</b>
7.	Shifting of Meters (Table 49)	22.23	12.63	14.23	<b>49.09</b>	22.23	12.63	14.23	<b>49.09</b>
8.	Others (Road widening)	1.66	2.39	3.47	<b>7.52</b>	0.00	0.00	0.00	<b>0.00</b>
	<b>Grand Total</b>	<b>1757.28</b>	<b>1991.37</b>	<b>2235.18</b>	<b>5983.83</b>	<b>1382.25</b>	<b>1594.77</b>	<b>1831.57</b>	<b>4808.59</b>

**\*Note: The capital expenditure on contributory works shall be considered during the true-up based on the actual capital expenditure incurred and shall be allowed over and above the total capital investment.**

The capitalisation approved by the Commission for 3<sup>rd</sup> control period is given in the following table:

**Table 51: Summary of capitalisation approved by the Commission for Distribution Business**

Sr. No.	Particulars	Capitalization approved			(Rs. Cr.)
		FY 2023-24	FY 2024-25	FY 2025-26	Total
1	System Augmentation, System Improvement and Loss Reduction (Table-1-Annex-3)	908.75	1013.86	1197.97	<b>3120.58</b>
2	IT Works (Table-2 Annex-3)	13.64	6.00	6.00	<b>25.64</b>
3	Release of New Connection including AP*	-	-	-	-
4	Sub Transmission System (Table-3-Annex-3)	280.00	320.00	360.00	<b>960.00</b>
5	Civil Works (Table-4-Annex-3)	87.91	100.85	90.50	<b>279.26</b>
6	Contributory Works**	-	-	-	-
7	Shifting of Meters (Table-5-Annex-3)	22.10	11.78	14.25	<b>48.13</b>
8	Others (Road widening)-Table-6-Annex-3***	-	-	-	-
	<b>Grand Total</b>	<b>1,312.40</b>	<b>1,452.49</b>	<b>1,668.72</b>	<b>4,433.61</b>

**Note:**

\* As per Commission's Analysis under para 4.1.3, no capital expenditure approved.

\*\* As per Note under Table-47

\*\*\* As per Commission's Analysis under Para-4.1.9

Hence, Capitalisation will be considered accordingly.

**4.1.11 De-capitalization**

In case of de-capitalisation of assets, the cost of acquisition of such asset as on the date of decapitalisation shall be deducted from the value of Gross Fixed Assets (GFA). The corresponding balance loan as well as corresponding equity shall be deducted from outstanding loan and the equity respectively in the year de-capitalization takes place. Necessary financial adjustments shall be made taking into consideration the year in which it was capitalised.

#### 4.1.12 Financing Plan (Distribution Business)

PSPCL vide its reply dated 15.09.2022 (Petition No.49 of 2022) has submitted that to meet with the requirement of capital expenditure they avail of bulk sum loans from Banks/FIs i.e. in amounts of Rs.500 crore, Rs.1000 crore etc. Therefore, Scheme wise breakup of financing plan (FY 2023-24 to FY 2025-26) is not available. Further, it has been conveyed that funding of capex plan (after adjusting consumer contribution) will be made by availing loans from Banks/FIs.

Further, PSPCL has submitted the Capital expenditure (Generation and Distribution Business) of Rs. 3224.82 crore, Rs.3050.39 crore and Rs.3160.34 crore for FY 2023-24, FY 2024-25 and FY 2025-26 and projected the loan requirement of Rs.3024.82 crore, Rs.2850.39 crore and Rs. 2960.34 crore (Generation & Distribution Business) for the respective years after adjusting consumer contributions of Rs. 200 crore in each year during the 3rd MYT control period.

#### Commission's Analysis:

The Complete capital investment is considered to be financed through loan requirement, consumer contribution and Govt. Grants/Subsidies as and when received. The summary of the financing plan for the approved capital investment is given in the following table: -

**Table 52: Summary of Financing Plan approved by the Commission for Distribution Business**

(Rs. Crore)

Sr. No.	Source of Funding	FY 2023-24	FY 2024-25	FY 2025-26	Total
1.	Loan	1382.25	1594.77	1831.57	4808.59
2.	Equity	-	-	-	-
3.	Less: Consumer Contribution	200.00	200.00	200.00	600.00
4.	Less: Govt. Grants/Subsidies	-	-	-	-
5.	<b>Total</b>	<b>1182.25</b>	<b>1394.77</b>	<b>1631.57</b>	<b>4208.59</b>

Note: Govt. Grants/Subsidies (against sponsored Schemes) have not been considered while working out the financing of capital expenditure in the distribution Business Plan for 3<sup>rd</sup> MYT Control period. However, PSPCL shall intimate the amount as and when received on account of Govt. Grants/subsidies and will take into account while working out the loan requirement for FY 2023-24 to FY 2025-26.



**Table 53: Summary of Financing Plan submitted by PSPCL and approved by the Commission (3<sup>rd</sup> control period FY 2023-24 to FY 2025-26)**

(Rs. Crore)

Sr. No.	Source of Financing	FY 2023-24	FY 2024-25	FY 2025-26	Total
	<b>PSPCL's Submission</b>				
<b>1.</b>	<b>Capital Expenditure</b>				
<b>2.</b>	Generation Business	1301.14	884.00	749.14	2934.28
<b>3.</b>	Distribution Business	1923.68	2166.39	2411.21	6501.28
<b>4.</b>	<b>Total</b>	<b>3224.82</b>	<b>3050.39</b>	<b>3160.35</b>	<b>9435.56</b>
<b>5.</b>	<b>Loan requirement (less consumer contribution of 200 Crore each year.</b>	<b>3024.82</b>	<b>2850.39</b>	<b>2960.35</b>	<b>8835.56</b>
	<b>Approved by PSERC</b>				
<b>6.</b>	<b>Capital Expenditure</b>				
<b>7.</b>	Generation Business	483.69	413.33	341.72	1238.74
<b>8.</b>	Distribution Business	1382.25	1594.77	1831.57	4808.59
<b>9.</b>	<b>Total</b>	<b>1865.94</b>	<b>2008.10</b>	<b>2173.29</b>	<b>6047.33</b>
<b>10.</b>	<b>Loan requirement (less consumer contribution of 200 Crore each year.</b>	<b>1665.94</b>	<b>1808.10</b>	<b>1973.29</b>	<b>5447.33</b>

Note: Govt. Grants/Subsidies (against sponsored Schemes) have not been considered while working out the financing of capital expenditure in the Distribution Business Plan for 3<sup>rd</sup> MYT Control period. However, PSPCL shall intimate the amount as and when received on account of Govt. Grants/subsidies and will take into account while working out the loan requirement for FY 2023-24 to FY 2025-26.

# Summary

The Commission has examined the list of works submitted by PSPCL to be executed during FY 2023-24 to FY 2025-26. Based on various submissions made by PSPCL, clarifications provided, and facts presented by PSPCL during various meetings, the Commission hereby approves the Capital Investment and Capitalisation for FY 2023-24 to FY 2025-26 i.e. for the 3<sup>rd</sup> MYT Control Period as mentioned in the tables below:

**Table 54: Summary of Capital Investment approved by the Commission**

Rs Cr.

Sr. No.	Particulars	Approved by the Commission			
		FY 2023-24	FY 2024-25	FY 2025-26	Total
1.	Generation Business (Table 38)	483.69	413.33	341.72	1238.74
2.	Distribution Business (Table 50)	1382.25	1594.77	1831.57	4808.59
3.	<b>Total Capital Investment</b>	<b>1865.94</b>	<b>2008.10</b>	<b>2173.29</b>	<b>6047.33</b>

**Table 55: Summary of Capitalisation approved by the Commission**

Rs Cr.

Sr. No.	Particulars	Approved by the Commission			
		FY 2023-24	FY 2024-25	FY 2025-26	Total
1.	Generation Business (Table 39)	367.28	528.42	277.25	1172.95
2.	Distribution Business (Table 51)	1312.40	1452.49	1668.72	4433.61
3.	<b>Total Capital Investment</b>	<b>1679.68</b>	<b>1980.91</b>	<b>1945.97</b>	<b>5606.56</b>

The Commission hereby approves the Capital Investment Plan and Capitalisation for FY 2023-24 to FY 2025-26 subject to final true up of actual expenditure.

The Order is signed and issued by the Punjab State Electricity Regulatory Commission on this day 11<sup>th</sup> of January, 2023.

Sd/-  
(Paramjeet Singh)  
Member

Sd/-  
(Viswajeet Khanna)  
Chairperson

Chandigarh

Dated: 11.01.2023