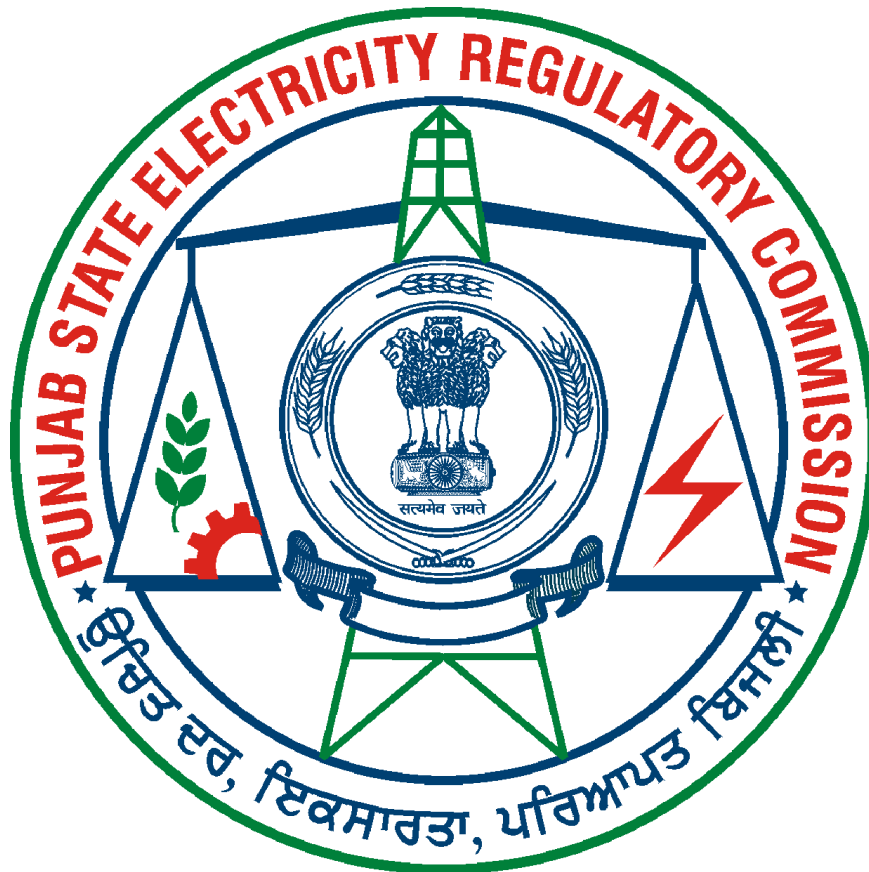


PUNJAB STATE ELECTRICITY REGULATORY COMMISSION



PSTCL

**BUSINESS PLAN INCLUDING
CAPITAL INVESTMENT PLAN ORDER
FOR MYT CONTROL PERIOD FROM
FY 2023-24 to FY 2025-26**

**PUNJAB STATE ELECTRICITY REGULATORY COMMISSION
SITE NO. 3, BLOCK B, SECTOR 18-A MADHYA MARG,
CHANDIGARH**



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Chapter 1

PETITION NO. 50 OF 2022 FILED BY PUNJAB STATE POWER TRANSMISSION 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

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 Transmission and State Load Despatch Centre (SLDC) businesses of Punjab State Transmission Corporation Limited (PSTCL). The Commission has examined the petition filed by PSTCL, facts presented by PSTCL in its various submissions and the documents adduced on the record.

1.1 Background

PSTCL has submitted that it is vested with the function of intra-State transmission of electricity in the State of Punjab and the operation of SLDC as notified by the Government of Punjab vide Notification No. 1/9/08-EB(PR) 196 dated April 16, 2010. Further, in terms of Section 39 of the Act, the Government of Punjab declared PSTCL as the State Transmission Utility (STU). PSTCL 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 Transmission and State Load Despatch Centre (SLDC) businesses of PSTCL

As per the PSERC MYT Regulations – 2019, PSTCL 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. PSTCL has submitted Capital Investment Plans for Transmission and SLDC Business and has prayed to:

- a) Admit the Petition seeking approval of Business Plan with its Capital Investment Plan for 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 Transmission and SLDC Business for FY 2023-24 to FY 2025-26 as proposed by the Petitioner in the Petition;
- c) To pass any other order/s as the Commission may deem fit and appropriate under the circumstances of the case in the interest of justice;
- d) To condone any error/omission and to give opportunity to rectify the same;
- e) The filing is being done based on the best available information and in case of any change, the Petitioner may be permitted to make further submissions, addition and alteration to this petition as may be necessary from time to time.

1.3 The petition was admitted vide Order dated 06.09.2022 and PSTCL were directed to publish a public notice inviting objections/suggestions from the general public and stakeholders. PSTCL 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 PSTCL 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 PSTCL. In response to the Order dated 06.09.2022, PSTCL submitted the information vide memo No. 842 dated 21.09.2022. Further information/clarification was sought vide Order dated 29.09.2022 and PSTCL submitted the information vide memo No. 917 dated 10.10.2022. The information submitted by PSTCL was still incomplete and PSTCL was directed to submit information/clarification vide Order dated 27.10.2022. In response to the Order dated 27.10.2022, PSTCL submitted information vide memo No. 968 dated 03.11.2022. After hearing the matter, Order was reserved vide Order dated 10.11.2022.

1.4 Objections & Public Hearing:

The Commission directed PSTCL vide Order dated 06.09.2022 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), Punjabi Tribune & Dainik Jagran (Hindi) on 13.09.2022. The relevant correspondence between the Commission and PSTCL 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.

1.5 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

2.1 Transmission Availability Trajectory

PSTCL's submission:

As per historical trends, the availability of transmission network of PSTCL has always remained higher than 99%. The MYT Regulations 2019, prescribe that the normative transmission availability for recovery of fixed cost (NATAF) should be 98.5% for AC system and 99% for incentives which shall be payable for availability above 99%. Further, no incentive shall be payable for availability beyond 99.75%.

Considering the above, PSTCL has submitted that the availability of the network will be aligned to the normative limits set as per Tariff Regulation.

Commission's Analysis:

The Commission notes that with regard to Transmission Availability trajectory, there is no change in PSERC MYT Regulations 2019 and PSERC MYT regulations 2022. Further, the Commission notes PSTCL's submission that the availability of transmission network of PSTCL has remained higher than 99% and shall be aligned to normative limits as per tariff Regulations. The Commission expects PSTCL to improve the availability further under the performance-based incentive regime.

2.2 Transmission Loss Trajectory for the 3rd Control period

PSTCL's Submissions:

The actual Transmission losses incurred by PSTCL in the first 2 years of the 2nd Control Period are as given below:

Table 1: Actual Transmission losses submitted by PSTCL for FY 2020-21 and FY 2021-22

FY 2020-21	FY 2021-22
2.50%	2.31%

PSTCL has also submitted the comparison of the prevalent transmission losses with other State Transmission Utilities as under:

Table 2: Comparison of Transmission Losses with other state utilities for FY 2020-21 and FY 2021-22

S. No	State	Transmission Loss (%)	
		Approved in the tariff order	
		FY 2020-21	FY 2021-22
1.	Andhra Pradesh	3.17	3.06
2.	Gujrat	3.50	3.60
3.	Haryana	2.15	2.10
4.	Maharashtra	3.18	3.18
5.	Rajasthan	3.33	3.31
6.	Telangana	2.71	2.64
7.	Punjab	2.50	2.31

PSTCL has further submitted that the Transmission system is being Developed for n-1 compliance in accordance with the CEA standards. Accordingly, some lines will remain underutilized which may lead to increase in no load losses thereby increasing Transmission losses. PSTCL has proposed the transmission loss for 3rd Control period as 2.50% during each year of Control Period.

Table 3: Transmission loss trajectory submitted by PSTCL for the 3rd Control Period.

FY 2023-24	FY 2024-25	FY 2025-26
2.50%	2.50%	2.50%

Commission’s Analysis:

The Transmission losses approved by the Commission in the 2nd Control Period vis-à-vis actual losses during the same period is given below:

Table 4: Transmission losses approved by the Commission in the 2nd Control Period vis-à-vis losses achieved by PSTCL

Financial Year	Transmission loss (%)	
	Approved	Actuals
2020-21	2.48%	2.50%
2021-22	2.46%	2.31%
2022-23	2.44%	Not yet available

PSTCL has projected transmission loss of 2.50% during each year of the 3rd Control period even when it has achieved transmission loss of 2.31% during FY 2021-22. The 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).

The Commission cannot consider a higher loss i.e. 2.50% in the 3rd Control period particularly when the Commission is allowing higher capital investment for the provision of higher voltage substations, augmentation of power transformers, conductors etc.. However, the Commission notes PSTCL's submission that with the development of the network to n-1 compliant system, significant reduction of losses would be difficult to achieve as some lines will remain underutilised. **Accordingly, the Commission approves the Transmission loss trajectory with reduction of 0.02% every year for the 3rd Control Period from the approved losses for FY 2022-23. Transmission losses for the Control Period shall be specified accordingly on the basis of the actual transmission losses for FY 2022-23 but will not be considered if found higher than the approved trajectory given in the Table 5 below.**

Table 5: Transmission loss trajectory approved for the 3rd Control Period*

	FY 2023-24	FY 2024-25	FY 2025-26
Transmission Loss trajectory (%)	2.42%	2.40%	2.38%
*The opening targeted losses shall be reviewed as per the actual losses of FY 2022-23 but will not be considered if higher than the approved trajectory			

Chapter 3 - Capital Investment Plan

3.1 Background

PSTCL has filed separate Capital Investment Plans for its Transmission & SLDC Businesses as per Regulation 9 of the Punjab State Electricity Regulatory Commission (Terms and Conditions for Determination of Generation, Transmission, Wheeling and Retail Supply Tariff) Regulations. In line with the provisions of the Regulations, PSTCL has undertaken the required studies and based on the above, the capital expenditure plan has been proposed under two verticals viz:

- a. Spill over schemes – Schemes initiated in the previous control periods (1st MYT & 2nd MYT) which will be completed in the ensuing control period.
- b. New Schemes comprising of:
 - envisaged/approved under the previous control periods but which will be initiated in the ensuing control period carried forward from previous control periods
 - New Schemes – Schemes planned to be initiated in the 3rd Control period.

PSTCL submitted that the planning of the intra-State Transmission System is based on Planning Criteria and philosophy specified in PSERC (State Grid Code) Regulations 2013 and Transmission Planning Criteria stipulated by Central Electricity Authority, 2013. The proposed Capital Investment Plan has been planned on the basis of envisaged power requirements as per 19th EPS projections of CEA, inputs received from SLDC and PSPCL related to system constraints, operational constraints and expected load growth and generation addition etc.

The following are the key considerations in the proposed capital investment plan:

- a) Cater to additional load requirement in the state of Punjab.
- b) System Augmentation to remove overloading in transmission lines and substations.
- c) To increase the reliability of the equipment and consequently of the transmission system so as to provide consistent availability of network.
- d) To disperse additional power availability.

The plan aims to meet the requirement of power within the state by ensuring that adequate transmission capacity is available for evacuation of power from outside the state through 400 kV network. Load flow studies have been carried out for the projected loads and the available generation for the time frame covered in the control period for various system operating conditions.

As per 19th EPS report, the energy consumption in the State of Punjab is expected to reach 75644 MUs by FY 2025-26. Similarly, the peak MW requirement in the state in FY 2025-26 is expected to be 18009 MW.

As per data made available by SLDC, the peak demand already handled in FY 2022-23 has been nearly 14311 MW. Assuming linear growth of demand of approx. 1500 MW per year, the projected peak demand for Punjab for FY 2025-26 comes out to be approx. 18811 MW.

Going forward, PSTCL has envisaged that maximum load enhancement is likely to come from Gobindgarh area (nearly 40% expected growth), Ludhiana area (25-30% expected growth), Kohara-Dhanansu belt (appx. 25-30% growth), Zirakpur-Lalru-Derabassi belt (appx. 25% growth) and Amritsar-Jalandhar belt (appx. 20% growth). Considering the projected load requirement of 18009 MW in FY 2025-26 and understanding that the generation from PSPCL units is likely to be around 6000 MW (which shall reduce to approx. 5700 MW in the absence of GGSSTP generation and the advent of Shahpur Kandi project), the balance power requirement of around 12000 MW has to be sourced from outside the state of Punjab through the 400 kV inter-state grid of PGCIL. The existing system of PSTCL transmission network has been planned for the system loading conditions of year 2023. Central Electricity Authority has fixed an inter-state power drawl limit (ATC/TTC) for each state. For Punjab the current limit is 8500 MW/9000 MW. Therefore, drawl of approx. 12000 MW of power from outside the state will result in stressing of the 400 kV inter-state grids of PGCIL.

PSTCL, based on its operational experience, has planned the following capital interventions:

- a) Augmentation/addition of transformers at 220 KV/132 kV substations of PSTCL for loads, including PSPCL load growth due to new loads including cases of load cleared by feasibility clearance committee from feasibility point of view.
- b) Augmentation of bus bars, extension in control room buildings, providing room for second source for station battery and other works relating to system strengthening as per the field requirement.
- c) Additional 220/132/66 KV line bays related to feasibility cases or as per PSTCL/PSPCL requirement.
- d) Unforeseen emergency works like replacement of old/ageing/defective power transformers.
- e) Provision for replacement of existing conductor with HTLS conductor, wherever required or use of modern technologies like monopoles etc. in case of unforeseen ROW issues.

Regarding technical justification of the works, PSTCL submitted the existing network capacity and network capacity projected to be achieved by the end of 3rd Control period as under:

Voltage Level	MVA capacity (ending March 2022)		Circuit Km (ending March 2022)	
	Ending March 2022	By the end of 3 rd Control Period	Ending March 2022	By the end of 3 rd Control Period
400 kV	5390	9390	1599.75	1701.75
220 kV	29981.5	36729	7880.14	9184.21
132 kV	4335.67	4757.67	3098.04	3307.54

PSTCL submitted the Capital investment Plan for 3rd MYT Control period as under:

Table 6: Summary of Capital Investment submitted by PSTCL for the 3rd Control Period (Rs. in Crore)

Sl. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total MYT
1.	Transmission Business	1274.26	1140.61	850.47	3265.34
2.	SLDC Business	8.28	2.13	0.93	11.34
	Total	1282.54	1142.74	851.40	3276.68

3.2 Transmission Business

The summary of the Capital Investment Plan in respect of transmission business submitted by PSTCL is provided in the following table:

Table 7: Summary of Capital Investment of transmission business for the 3rd Control Period (Rs. in Crore)

Sl. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total MYT
1.	Spill Over schemes with spill over from 1 st MYT	196.31	80.96	61.57	338.84
2.	Spill Over schemes with spill over from 2 nd MYT	769.66	479.08	107.49	1356.23
3.	New Development Schemes for 3 rd Control period	308.29	580.57	681.41	1570.27
	Total	1274.26	1140.61	850.47	3265.34

3.2.1 Ongoing/Spillover Schemes

3.2.1.1 Schemes spillover from 1st & 2nd Control Period:

PSTCL's Submission:

PSTCL has submitted the following requirement of the capital investment for spill over schemes:

Table 8: Capital Investment claimed by PSTCL for 3rd Control Period (Rs. in Crore)

Sr. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total MYT
1.	Spill Over schemes approved in 1 st Control Period	118.35	17.00	22.95	158.30
2.	Spill Over schemes approved by Board in FY 2019-20 outside 1 st Control Period	77.96	63.96	38.62	180.54
3.	Spill Over schemes approved in 2 nd Control Period	365.76	178.73	62.63	607.12
4.	Spill Over schemes approved by Board outside 2 nd Control Period	386.18	290.34	38.08	714.60
5.	P&M works approved in 2 nd MYT	17.72	10.01	6.78	34.51
	Total Spillover schemes / works	965.97	560.04	169.06	1695.07

The scheme wise expenditure submitted by PSTCL is as per **Annexure-1**.

Commission's Analysis:

In the Order dated 03.12.2019 of Capital investment Plan of PSTCL for 2nd MYT Control period, the Commission had approved Rs. 535.73 Crore and Rs. 143.86 Crore respectively for spill over schemes which were started with the approval of the Commission and also for spill over schemes outside 1st MYT approval. Further Rs. 1208.74 Crore were approved for new works planned for the 2nd MYT Control Period including Rs. 94.14 Crore approved for P&M works.

Further, the Commission in Tariff Order for FY 2020-21 capped the Capital Investment of PSTCL to Rs. 400 Crore during each year for the 2nd MYT (FY 2020-21 to FY 2022-23 keeping in view the trend of PSTCL's CAPEX during the 1st MYT Control Period, and as discussed with PSTCL during the meeting dated 24.02.2020. Liberty was given to PSTCL to prioritize the approved schemes within the above limit.

Vide letter dated 03.11.2022, PSTCL submitted in Annexure 3A & 3B that the spillover schemes / works amounting to Rs. 773.45 Crore have not been started. However, expenses of a few lacs have been incurred on tender/surveys etc.. The list of such works submitted by PSTCL is at **Annexure-2**. **The commission does not find it appropriate to consider these works amounting to Rs. 773.45 Crore as spillover works when these have not even been started. Accordingly, the Commission excludes these works from spillover works and includes these as new works.**

Regarding the Spill Over schemes approved by the Board outside 2nd Control Period, the Commission notes with concern that PSTCL plans these works with huge investment at its own without due approval of the Commission which is not as per regulation 9 of the PSERC MYT Regulations. Capital expenditure may be incurred only on emergency works beyond the approved capital investment plan. The starting of new schemes beyond approved CIP with estimated capital expenditure even higher than the approved CIP is incomprehensible and also delays the ongoing approved works. PSTCL shall submit the necessity of starting these works without approval of the Commission and Board's approval declaring these works as emergency works as per provision of the PSERC MYT Regulations within a month from issuance of this Order. How can works amounting to an investment higher than the approved CIP be considered as emergency works? It raises the question whether PSTCL is giving adequate thought and consideration to the projected CIP.

Regarding excess expenditure in CIP projects beyond projected cost in some of the spillover schemes, PSTCL has submitted that only partial cost of the schemes was inadvertently projected for approval of the Commission and the present CIP requirement given is as per the full cost of the project. The Commission directs PSTCL to submit the requisite documents to authenticate the true project cost at the time of submission of actual capital expenditure of the 2nd MYT for its true up at the end of the 2nd control period.

For scheme No. 87 (Augmentation of 132 kV GGSSTP–Asron and 132 kV GGSSTP-Ropar) PSTCL has indicated the total fund requirement as Rs. 18.96 Crore. Further, PSTCL has submitted that PSDF grant is available for this scheme and PSTCL's share for this scheme is Rs. 6.28 Crore which is required in the 3rd MYT. The Commission notes PSTCL's submission and accordingly, reduces the CIP against this scheme by Rs. 12.68 Crore (Rs. 18.96 Crore – Rs. 6.28).

Regarding P&M schemes, PSTCL has submitted that some P&M works envisaged to be carried out in the 2nd MYT Control period have been spilled over. The total approved CIP of these works is Rs. 47.71 Crore. Out of this, Rs. 13.21 Crore is likely to be spent in the 2nd MYT and PSTCL has requested for approval of the balance CIP of Rs. 34.51 Crore.

Accordingly, the Commission considers the Capital Investment Plan of Rs. 908.94 Crore (1695.07 Crore – Rs. 773.45 Crore- Rs. 12.68 Crore) for the spillover schemes of the Transmission Business of PSTCL for the 3rd MYT Control Period from FY 2023-24 to FY 2025-26.

The summary is provided in the following table:

Table 9: Summary of spill over schemes for the 3rd Control Period (Rs. in Crore)

Sl. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total MYT
1.	Spill Over schemes submitted by PSTCL (Annexure-1)	965.96	560.05	169.06	1695.07
2.	Less: spill over schemes not started yet and to be considered as new schemes (Annexure-2)	256.30	377.80	139.35	773.45
3.	Less: Reduction in CIP of Scheme No. 87 of Annexure-1 (Sr. No.72)	6.34	6.34	0.0	12.68
	Total	703.32	175.91	29.71	908.94

3.2.2 New Schemes

3.2.2.1 New Works planned for MYT plan 2023-26

PSTCL's Submission:

PSTCL has submitted capital investment for the New Works planned for MYT plan 2023-26 as given in the following table.

Table 10: Capital Investment as submitted by PSTCL (Rs. in Crore)

Sl. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total MYT
1	New Works planned for 3 rd MYT (FY2023-24 to FY2025-26) (Annexure-3)	308.29	580.57	681.41	1570.27

The scheme wise expenditure submitted by PSTCL is at Annexure-3.

PSTCL has submitted that out of the schemes / works planned for 3rd MYT, the works amounting to Rs. 1305.03 Crore (**Annexure-4**) are more than Rs. 50 Crore and are required to be executed under TBCB (Tariff based Competitive Bidding) mode as per the notification of the Commission dated 05.11.2018. PSTCL has sought exemption from the TBCB mode in respect of two schemes on the following grounds:

1. 400kV Behman Jassa Singh:

The first stage of 400 kV switching station has already been constructed as deposit work of HMEL. The land for this work was provided by HMEL and thus PSTCL will not be able

to transfer/sell this land to a TBCB operator. The switching station is now in the possession of PSTCL. The remaining (partial) work of the same project amounting to Rs. 256.55 Crore cannot be executed under TBCB mode. Moreover, this work is of top priority and related with enhancement of ATC/TTC limits of Punjab. Tender specification for this work has been prepared and tender is to be floated shortly. PSTCL has requested the Commission to grant exemption for this work from the TBCB mode.

2. Sub Station automation System (SAS):

The implementation of SAS on 90 substations of PSTCL requires replacement/retrofitting of existing C&R panels/isolators etc. at various 220 kV substations of PSTCL, which is a scattered work. No separate ownership can be given to a TBCB operator for SAS equipment only. Moreover, DPR for PSDF grant has also been submitted to the NLDC. Hence this work cannot be executed under TBCB mode. PSTCL has requested the Commission to grant exemption for this work from TBCB mode.

PSTCL has further submitted that for the remaining works amounting to more than Rs. 50 Crore each, a request shall be submitted to the Punjab Govt. for their concurrence for exemption from TBCB mode. The outcome shall be intimated to the commission in due course.

Commission's Analysis:

The Commission agrees with PSTCL that work of Sub Station automation System (SAS) on 90 substations of PSTCL requiring replacement/retrofitting of existing C&R panels/isolators etc. at scattered 220 kV substations of PSTCL cannot be given under TBCB mode since separate ownership cannot be given to a TBCB operator for SAS equipment only. **Accordingly, the Commission allows exemption of this work from TBCB mode amounting to Rs. 107.10 Crore and allows Capital Investment of Rs. 107.10 Crore for this work to be carried out by PSTCL.**

The Commission notes that PSTCL has sought exemption of 400kV Behman Jassa Singh work on the plea that it will not be able to sell the land or allocate partial work to the TBCB operator. However, PSTCL has not submitted the related cost benefit analysis. PSTCL has stated that the Tender specifications for this work have been prepared and the tender is to be floated shortly which is against the notification dated 05.11.2018 issued by the Commission. The Commission does not have sufficient justification to agree with PSTCL that the ownership of land or allocation of partial work of 400kV Behman Jassa Singh is a hinderance in development of the project through the TBCB mode. PSTCL has not pointed out the savings/advantages if the project is undertaken through Open Tender instead of the TBCB mode. **Accordingly, the Commission at the present juncture cannot allow exemption of the work of 400kV Behman Jassa Singh from TBCB mode.**

Consequently, the Commission directs PSTCL to develop the intra state transmission projects costing more than Rs. 50 Crore through Tariff Based Competitive Bidding (TBCB) in line with the Commission's directions given vide notification dated 05.11.2018. However, PSTCL shall be at liberty to demonstrate before the Commission the cost benefit analysis/reasons/advantages along with concurrence of State Government for developing any project through Open Tender in place of the TBCB Mode to seek any relaxation thereof after providing full justification.

Accordingly, the Commission considers the Capital Investment Plan of Rs. 1145.79 Crore (1570.27 Crore + Rs. 773.45 Crore (spillover schemes being considered as new schemes)-Rs. 1197.93 Crore (schemes to be developed under TBCB mode)). The Commission approves the capital works worth Rs. 1197.93 Crore (Rs. 1305.03 Crore – Rs. 107.10 Crore) to be executed through TBCB mode for the 3rd MYT Control Period from FY 2023-24 to FY 2025-26.

Table 11: Summary of new schemes for the 3rd Control Period (Rs. in Crore)

Sl. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total MYT
1.	New schemes submitted by PSTCL	308.29	580.57	681.41	1570.27
2.	Add: spill over schemes not started yet and to be considered as new schemes	256.30	377.80	139.35	773.45
3.	Less: TBCB mode schemes	233.84	506.74	457.35	1197.93
	Total	330.75	451.63	363.41	1145.79
4	Cost of Schemes to be developed under TBCB mode	233.84	506.74	457.35	1197.93
	Total	564.59	958.37	820.76	2343.72

Dismantled Transformers: PSTCL has proposed the augmentation of many transformers in the system. The Commission had directed PSTCL to reduce the capital investment plan by optimally using the dismantled transformers. In reply, PSTCL has submitted that it has reviewed the upgradation schemes and dismantled transformers have already been adjusted. The Commission notes from PSTCL submission dated 03.11.2022 that 1 No. 50 MVA 132/66kV, 2 No. 10/12.5 MVA 132/11kV and 1 No. 10/12.5MVA 66/11kV dismantled transformers are still surplus after adjustment of dismantled transformers. PSTCL is directed to maintain an account of each and every transformer location which is being upgraded with higher rating but is otherwise functional/operational and reduce the CIP by reusing these dismantled transformers.

Based on PSTCL's submissions, the Commission has considered the following Capital Investment Plan in respect of its Transmission Business:

Table 12: Capital Investment plan of transmission Business (Rs. in Crore)

Sr. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total MYT
1.	Spill Over schemes	703.32	175.91	29.71	908.94
2.	New schemes	330.75	451.63	363.41	1145.79
	Total (1+2)	1034.07	627.54	393.12	2054.73
3.	Cost of Schemes to be developed under TBCB mode	233.84	506.74	457.35	1197.93
	Overall Total	1267.91	1134.28	850.47	3252.66

3.3 SLDC Business

3.3.1 Summary of SLDC Business

PSTCL's Submissions:

The summary of the Capital Investment Plan submitted by PSTCL is provided in the following table:

Table 13: Summary of Capital Investment submitted by PSTCL for 3rd Control Period (Rs. in Crore)

Sl. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total MYT
1	Spill Over schemes of 1 st MYT	0.78	0.40	0.00	1.18
2.	Spill Over schemes of 2 nd MYT	7.00	1.23	0.43	8.66
3.	New Development Schemes	0.50	0.50	0.50	1.50
	Total	8.28	2.13	0.93	11.34

Details of the capital investment for the SLDC Business, as proposed by PSTCL, is given in **Annexure-5**.

Commission's Analysis:

The Commission notes that two No. works are pending from the 1st MYT Control period and 3 No. works are pending from the 2nd MYT Control period. Only one new scheme / work has been planned by PSTCL for the 3rd MYT Control period. PSTCL is directed to complete all spill over schemes, including the SAMAST scheme at the earliest. The Commission considers the proposed capital investment for these schemes for the 3rd Control Period.

The summary of Capital Investment Plan being considered for Transmission Business & SLDC business is as under:

Table 14: Capital Investment plan of PSTCL (Rs. in Crore)

Sr. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total MYT
1.	Transmission Business	1034.07	627.54	393.12	2054.73
2.	SLDC Business	8.28	2.13	0.93	11.34
	Total (1+2)	1042.35	629.67	394.05	2066.07
3.	Cost of Schemes to be developed under TBCB mode	233.84	506.74	457.35	1197.93
	Total	1276.19	1136.41	851.40	3264.00

3.4 Decision of the Commission:

The Commission has noted that PSTCL has submitted a substantial capital investment of Rs. 3276.67 Crore for the 3rd MYT Control period. The Commission also notes PSTCL 's submission that at beginning of the 1st MYT Control period, the maximum demand was around 11700MW which has risen to 14311 MW in the 2nd Control period. This demand is likely to rise up to 18000MW by the end of the 3rd Control period. PSTCL has submitted that all the works identified in the CIP need to be implemented for system improvement/load growth and it will strive to complete all these works within the stipulated time.

The Commission observes that the capital expenditure of PSTCL during the last 5 years is as under:

Table 15: Capital Expenditure of PSTCL (Rs. in Crore)

Sr. No.	Financial Year	Capital expenditure (Rs. In Crore)
1.	2017-18	351
2.	2018-19	262
3.	2019-20	226
4.	2020-21	219
5.	2021-22	321

The Commission notes that the maximum capital expenditure achieved by PSTCL in any year during the last 5 years is Rs. 351 Crores. The Commission observes that the CIP sought in the 3rd MYT is much higher and does not commensurate with PSTCL's past performance in implementing capital works. The Commission had directed PSTCL to review and re-submit the list of schemes by prioritizing them. In reply, PSTCL, vide letter dated 03.11.2022, submitted that it has reviewed all the schemes and submitted a list of works worth Rs. 360.26 Crore as of 2nd priority.

The Commission further noted that during the processing of Tariff Order for FY 2020-21, it has capped the Capital Investment of PSTCL at Rs. 400 Crore during each year for the 2nd MYT from FY 2020-21 to FY 2022-23, keeping in view the trend of PSTCL's CAPEX during the 1st MYT Control Period. Also, in the tariff Order for FY 2021-22, PSTCL had submitted the revised projection of Capital Expenditure for FY 2020-21 as Rs. 200 Crore, which was approved by the Commission provisionally, considering the situation arising due to Covid-19.

Accordingly, keeping in view PSTCL's past ability to undertake capital works to the tune of Rs. 351 Crore maximum in a year during the last 5 years, the Commission approves for PSTCL a CIP of Rs. 500 Crore during each year of the 3rd MYT Control period. PSTCL is allowed to prioritize the works out of the schemes considered by the Commission in this petition at its level so as to complete them within the optimum time with specified completion targets. PSTCL shall also be at liberty to approach the Commission to enhance the capping limit if its actual capital expenditure approaches the annual capped limit of Rs.500 Crore in any of the financial years of the 3rd Control Period. Further, the Commission will also review the annual capped limit at the end of each year of the 3rd Control Period vis-a-vis the actual capital expenditure during the respective years. The Commission also approves the capital works worth Rs. 1197.93 Crore to be executed through TBCB mode for the 3rd MYT Control Period from FY 2023-24 to FY 2025-26.

Also, the Commission directs PSTCL to strictly comply with the Capital Investment Plan of the 3rd MYT Control Period and undertake no work outside the CIP except the capital expenditure required for works duly endorsed and certified by its Board as emergency works as per Regulation 9 of the PSERC 3rd MYT Regulation (2022).

The Commission considers that with the quantum of Capital Investment being allowed, PSTCL shall be able to increase its inter-state power drawl limit (ATC/TTC) to 12000MW at end of the 3rd MYT Control period as per its own submission in the petition. The Commission directs PSTCL to intimate the transmission capacity and inter-state power drawl limit (ATC/TTC) achieved by it at end of each year of the 3rd MYT Control period.

3.5 De-Capitalisation

In case of de-capitalization of assets, the cost of acquisition of such asset as on the date of decapitalization 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 capitalized.

3.6 Financing Plan

PSTCL has asked for funding of CAPEX for the third control period as given below:

Table No.16: Summary of Financing Plan of Transmission Business submitted by PSTCL (Rs. in Crore)

Sr. No.	Source of Funding	FY2023-24	FY2024-25	FY2025-26	Total MYT
1	Loan	923.77	732.78	782.77	2439.32
2	Equity	133.80	153.36	175.61	462.77
3	Consumer Contribution	-	-	-	-
4	Govt. Grants/ Subsidies	-	-	-	-
5	Total	1057.57	886.14	958.38	2902.09

The Commission notes that during the 3rd control period PSTCL has projected capital works amounting to Rs.1197.93 Crores to be executed under TBCB Mode out of which capitalization of Rs.774.03 Crores (**Annexure-8**) has been projected as per detail given below:-

Table No.17: Summary of Capitalization of Projects under TBCB Mode submitted by PSTCL (Rs. in Crores)

Sr. No.	FY2023-24	FY2024-25	FY2025-26	Total MYT
1	115.328	120.251	538.45	774.03

Therefore, from the total funding required projected by PSTCL, Rs.774.03 crores is being reduced and financing plan proportionately amended as below for transmission business is being considered:

Table No.18: Summary of Financing Plan of Transmission Business (Rs. in crores)

Sr. No.	Source of Funding	FY2023-24	FY2024-25	FY2025-26	Total MYT
1	Funding for CAPEX	1057.57	886.14	958.38	2902.09
2	Less TBCB projects	115.328	120.251	538.45	774.03
3	Funding considered	942.242	765.889	419.93	2128.06
4	Loan	823.04	633.34	342.98	1799.36
5	Equity	119.20	132.55	76.95	328.70
6	Consumer Contribution	-	-	-	-
7	Govt. Grants/ Subsidies	-	-	-	-
8	Total	942.242	765.889	419.93	2128.06

The summary of financing plan approved by the Commission for 3rd Control Period for SLDC is given in the following table:

Table 19: Summary of Financing Plan of SLDC Business (Rs. in Crore)

Sr. No	Source of Funding	FY2023-24	FY2024-25	FY2025-26	Total MYT
1	Loan	23.30	5.99	0.93	30.22
2	Equity	-	-	-	-
3	Consumer Contribution	-	-	-	-
4	Govt. Grants/ Subsidies	-	-	-	-
5	Total	23.30	5.99	0.93	30.22

The Commission notes that two works are pending from the 1st MYT Control period and 3 works are pending from the 2nd MYT Control period. Only one new scheme / work has been planned by PSTCL for the 3rd MYT Control period. PSTCL is directed to complete all spill over schemes including SAMAST scheme at the earliest. The Commission considers the proposed capital investment for these schemes for the 3rd Control Period.

The summary of Capital Investment Plan being considered for the transmission Business & SLDC business is as under:

Table 20: Capital Investment plan of PSTCL (Rs. in Crore)

Sr. No.	Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total MYT
1.	Transmission Business	1034.07	627.54	393.12	2054.73
2.	SLDC Business	8.28	2.13	0.93	11.34
	Total (1+2)	1042.35	629.67	394.05	2066.07
3.	Cost of Schemes to be developed under TBCB mode	233.84	506.74	457.35	1197.93
	Total	1276.19	1136.41	851.40	3264.00

PSTCL has submitted scheme-wise capitalization of transmission business for the 3rd Control Period (**Annexure-6**) and SLDC Business (**Annexure-7**) as detailed below:

Table 21: Capitalization of PSTCL (Rs. in Crore)

Sr. No.	Particulars	2023-24	2024-25	2025-26	Total
1	Spill Over Schemes	1077.04	603.20	391.55	2071.79
2	New Schemes	163.11	238.37	641.46	1042.94
3	New Schemes (P&M)	17.72	10.02	6.78	34.52
4	Total Transmission	1257.87	851.59	1039.79	3149.25
5	Spill Over	24.79	4.99	0.43	30.21
6	New Schemes	0.00	1.00	0.50	1.50
7	Total SLDC	24.79	5.99	0.93	31.71
8	Total Capitalization	1282.66	857.58	1040.72	3180.96

The Order is signed and issued by the Punjab State Electricity Regulatory Commission on this day 21st of December, 2022.

Sd/-
(Paramjeet Singh)
Member

Sd/-
(Viswajeet Khanna)
Chairperson

Chandigarh
Dated:

Chapter 4 - Stakeholder Consultation

Objections were invited to 'Petition for Business Plan including Capital Investment Plan for MYT Control Period from FY 2023-24 to FY 2025-26' vide Public Notice dated 13.09.2022, in line with Punjab State Electricity Regulatory Commission (Conduct of Business) Regulations, 2005 and the subsequent Amendments. The Public Hearing was held on 28.09.2022 at 11 AM in the office complex of the Commission. However, nobody appeared from the public in the public hearing and no objection has been received.

Annexures

Annexure 1 – Capital Investment Plan of Spill Over Works submitted by PSTCL

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
A Spill Over Works of 1st Control Period (From FY 2017-18 to FY 2019-20)							
1	120	220 kV S/ Stn Sherpur (Focal Point) (U/G from 66 kV grid with 220 kV side GIS and 66 kV side Conventional)		21.42	0	0	21.42
2	121	LILO of 1 ckt of 220 kV S/Stn Jamalpur - 220 kV S/StnDhandari Kalan-1 line at 220 kV S/StnSherpur (Focal Point)(Amendment 25 2018-19)		1.12	0	0	1.12
3	123	220 kV S/StnBudhlada (U/G from 66 kV)	1x160 MVA, 220/66 kV T/F	6.31	0	0	6.31
4	124	220 kV S/Stn Mansa - 220 kV S/StnBudhlada DC Line		3.75	0	0	3.75
5	128	400 kV S/StnDoraha (New at Village Dhanansu)	2x315 MVA, 400/220 kV T/Fs	17.85	0	0	17.85
6	130	(i) 400 kV Bays (ii) 220 kV Bays at 400 kV S/StnDoraha	(i) 4 Nos. (ii) 6 Nos.	13.09	0	0	13.09
7	132	400 kV Grid Dhanansu (near Doraha)	LILO of 220 kV Kohara-sahnewal (S/C) line at 400 kV Dhanansu	0	0	0	0.00
			220 kV D/C line on D/C towers (1.837 km) line length (with Dhanansu-Sahnewal conductor of Moose, 0.5 sq" and Dhansu-Kohara conductor of HTLS of	2.27	0	0	2.27

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
			Moose equivalent)				
			220 kV D/C line on Multi ckt towers (5.026 km) line length up to LILO point of existing Kohara-Sahnewal line (approx 0.5 km from Kohara) (with Dhanansu-Sahnewal conductor of Moose, 0.5 sq" and Dhansu-Kohara conductor of HTLS of Moose equivalent)	7.06	0	0	7.06
			Replacement of existing conductor of Kohara upto LILO point section with HTLS conductor of Moose equivalent (0.557 km)	0.41	0	0	0.41
			220 kV D/C line on Multi ckt towers (only stringing for changing route of LILO of GGSSTP-Kohara line (0.5 sq") at Gaunsgarh, on M/ckt towers (5.026 km approx) line length (Moose 0.5 sq" cond)	2.94	0	0	2.94

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
8	133		220 kV D/C line on D/C towers (21.957 km approx.) line length/420 sq mm ACSR Zebra) (out of the total line length of 28.437 km, 6.811 km of already existing line shall be used)	12.73	0	0	12.73
9	134 (a)		LILO of 1 circuit of 220 kV Jamalpur (BBMB)-Ganguwal line at 220 kV bus of 400 kV Dhanansu, approx, LILO length-8km (0.4 sq"), D/C on D/C towers. (New work)	4.81	0	0	4.81
10	135		220 kV Bays (2 Nos. at Doraha, 2Nos. at Kohara including double bus erection of 220 kV and 2 no. ICT bays at Dhanansu	5.36	0	0	5.36
11	136	LILO of 220 kV S/Stn Mansa - Sunam (SC) at 400 kV S/StnPatran (220 kV bus).	40 km (approx.) Line Length / 1xDC with 420 sq mm ACSR (Zebra)	1.05	0	0	1.05
12	177	220 kV S/StnFazilka (U/G from 66 kV)	220 kV S/StnFazilka (U/G from 66 kV)	7.14	5.95	14.28	27.37
13	178		400 kV S/StnMukatsar - 220 kV S/StnFazilka 220 kV DC line	8.67	8.67	8.67	26.01
14	179		220 kV Bays	2.38	2.38	0	4.76
Total (A)				118.35	17.00	22.95	158.30

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
B. Spill Over Works approved by the Board in FY 2019-20 outside the first MYT approval							
15	1a	132 kV Faridkot – Kotkapur-2 SC link (Amendment no. 16 / 2018-19)	30 Kms	11.12	0	0	11.12
16	1b		2 no. 132 kV line bays (one at each end)	2.02	0	0	2.02
17	2a	132 kV Sihora-132 kV Seh SC line	31 Kms	4.83	0	0	4.83
18	4	220 kV S/S Beas (new)	2x100 MVA 220/132 kV Auto T/F	12.14	24.99	15.23	52.36
			6x132kV line bays (Existing 3 and additional 3)	0	0	0	0.00
		132KV S/S system at Butari will be dismantled.	LILO of Butari – BBMB Jalandhar at PGCIL Jalandhar 2.5Km 0.4Sq" and subsequently LILO of PGCIL Jalandhar- Butari at Beas 22.5Km 0.4Sq"	15.58	38.97	23.39	77.94
		Bypassing 132 Kv Beas line to Tangra&Dhilwan-Beas/Butari to Ekalgadda after LILO of Dhilwan-Butari at Beas (new)	Shifting of 132kV system from 220kV Butari (1 Km length) by LILO of 132 KV Dhilwan - Butari at Beas 1.5 KMs with some portion on Modern Techniques Total Length 2.5 Km	0	0	0	0.00
			2x132kV towers dismantlement & 3nos. Towers to be erected	0	0	0	0.00
			Conversion of 132kV Tarn taran -Butari-Ekalgadda T-off to LILO 15Km 0.2 Sq"	0	0	0	0.00
			132KV D/C Beas - Ekalgadda Line 30 Kms 0.2 Sq"	0	0	0	0.00

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
19	7	OPGW		16.8	0	0	16.80
20	10	220 kV Dhandari Kalan - 2	2x160 MVA, 220/66 kV T/F at new location to be added (with complete new ICT bays	11.90	0	0	11.90
21	11		dismantlement of 2x100 MVA T/F for creating space for double bus bar	1.19	0	0	1.19
22	12		interconnecting 66 kV double bus bar of dhandarikalán 1-dhandarikalán 2	2.38	0	0	2.38
Total (B)				77.96	63.96	38.62	180.54
C : Spill over of New Works planned for the 2nd Control Period from FY 2020-21 to 2022-23							
23	1	400 kV S/s Ropar New Grid (in the premises of GGSSTP)	Establishment of 400 kV AIS station along with auxiliary, control room building, Gantry structure, extension provision etc.	0	0	0	0.00
24	2		400 kV S/s with 2x500 MVA, 400/220 kV ICTs	35.70	0	0	35.70
25	3		400 kV bays = 4 Nos	41.80	0	0	41.80
26	4		220 kV bays = 10 Nos	8.33	0	0	8.33
27	5		Connectivity of 220 kv bus of 400 kv Ropar with existing 220 kv bus of GGSTP Ropar with 4 Nos. Twin moose ckts (Approx. Length 1 km)	5.12	0	0	5.12

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
28	6		LILO of one ckt of 400 kV Ludhiana PGCIL– Koldam at proposed 400 kV S/s Ropar, LILO Length = 15 km (approx.), Triple Conductor (Snowbird)	22.52	0	0	22.52
29	7		LILO of 2nd ckt of 400 kV Ludhiana PGCIL– Koldam at proposed 400 kV S/s Ropar, LILO Length = 15 km (approx.), Triple Conductor (Snowbird)	6.96	20.92	0	27.88
30	8		400 kV bays = 2 Nos	8.925	0	0	8.93
31	9	400 kV Dhanansu(already planned) its additional 400 kV link required	LILo of 2nd ckt of 400 kV Jalandhar– Kurukshetra D/c line at Dhanansu. (Quad Moose), LILo length = 5 km (approx.)	2.37	0	0	2.37
32	10		400 kV bays 2 no.	1.79	1.79	0	3.57
33	12 (A)	220 KV Banga	Add 1x100 MVA, 220/132 kV Auto T/F.	11.90	0	0	11.90
34	14	220kV G.T. Road Ludhiana (New GIS) or (in Ludhiana area)Including SAS for RS 1cr.	220 kV S/s G.T. Road Ludhiana (New GIS Grid in the premises of existing 66 kV S/s G.T. Road Ludhiana) or (in Ludhiana area) with 2x160MVA, 220/66 kV T/F	0	0	0	0.00

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
35	15		LILO of 220 kV Ladowal - Gaunsgarh (DC) lines both ckts. at 220 kV G.T. Road Ludhiana. LILO Length = 7KM (appx.), conductor size 0.4sq" (2xDC lines).	0.24	0	0	0.24
36	16		220 kV bays = 4 Nos.	0	0	0	0.00
37	17		66 kV bays = 4 Nos.	0	0	0	0.00
38	18	220 kV Gobindgarh S/s (New Grid in the near by area of existing 220 kV S/s Gobindgarh-I). Includind SAS for RS 1cr. (Pharmaceuticals Wazirabad new)	220 kV S/s Gobindgarh (New) with 2x160MVA, 220/66 kV T/F.	11.90	19.04	15.47	46.41
39	19		LILO of 220 kV Gobindgarh-I - BassiPathana at 220 kV Gobindgarh, LILO length appx. 1 KM (DC on DC) with 0.4sq" conductor.	1.40	1.40	0	2.80
40	20		LILO of 220 kV GGSSTP - Gobindgarh-I at 220 kV Gobindgarh (new), LILO length 1 KM (appx.) 0.4sq" conductor, DC on DC.	1.40	1.40	0	2.80
41	21		220 kV bays = 4 No.	0	0	0	0.00
42	22		66 kV bays = 6 No.	0	0	0	0.00

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
43	23	220 kV Nawanpind (new grid in the premises of 66 kV S/s Nawanpind)Includ ind SAS for RS 1cr. Amedment No. 17/21-22	2x100 MVA, 220/66 kV T/F including 4 No. 220 kV line bays, 2 T/F bays and 1 Bus coupler bay and associated 66 kV bays) including SAS .	16.07	16.07	0	32.13
44	24		LILO of 220 kV Verpal – Wadalagranthian and Verpal-Udhoke lines at proposed DC line at proposed 220 kV S/s Nawanpind. 2xDC, conductor size0.4sq", LILO length 1 KM.	1.55	0.97	0	2.52
45	27	Additional link	Stringing of lIndckt. Of 220kV Mukatsar-Ghubayaline,con ductor size 0.4sq", Line length 40.3 KM	5.52	2.20	0	7.72
46	29	Augmentation/add itions of transformers at 220/132 kV level.	For augmentation and addition of 220 kV as well as 132 kV transformers, as per the unforeseen/emergent loading requirements, an approximate provision of 5 Cr..s per year (i.e. 3 transformers per year) has been made.	11.90	11.90	0	23.80
47	30	New 220 kV Giaspura including SAS of RS 1 cr.	Under study	0.238	0	0	0.24

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
48	31	New 220 kV JhokeHariHar (New)	U/g of 66 kV Jhoke Harihar to 220 kV with installation of 1X 100 MVA, 220/66 kV T/F (including 2 Nos. line bays, 1 No. T/F bay and 1 No. B/C bay)	14.28	8.33	7.14	29.75
49	32	220 kV Gurdaspur including SAS of RS 1 cr	LILO of one ckt of 220 kV wadalagranthian-sarna line DC on DC 2xDC, conductor size 0.4sq", LILO length 5 km(approx)	1.37	0	0	1.37
50	33		2x100MVA, 220/66kV T/F including 2 no. 220kV line bays	19.04	0	0	19.04
51	36		132 kVMoga I - Dhaleke DC link arrangement by making use of existingnetwork, conductor size 0.2sq", LILO length 7 km (approx)	0.32	0.32	0.32	0.96
52	39	i) 220 kV Singhawala	Addl. 1x100 MVA, 220/66 kV T/F.	9.82	0	0	9.82
53	45	vii) 220 kV Khassa	Aug. of 12.5 MVA, 66/11 kV to 20 MVA, 66/11 kV T/F.	2.38	0	0	2.38
54	46	viii) 220 kV Algon	Aug. of 12.5 MVA, 66/11 kV to 20 MVA, 66/11 kV T/F.	2.38	0	0	2.38
55	54	xvi) 220 kV Himmatpura	Aug. of 12.5 MVA, 66/11 kV to 20 MVA, 66/11 kV T/F.	2.48	0	0	2.48
56	60	xxii) 132kV Ferozshah	Aug. of 12.5 MVA, 132/11 kV to 20 MVA, 132/11 kV T/F.	2.38	0	0	2.38

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
57	61	xxiii) 132kV Manasingh Wala	Aug. of 12.5 MVA, 132/11 kV to 20 MVA, 132/11 kV T/F.	2.38	0	0	2.38
58	62	xxiv) 132kV Jallalabad	Aug. of 12.5 MVA, 66/11 kV to 20 MVA, 66/11 kV T/F.	2.38	0	0	2.38
59	63	xxvi) 132kV Kathunangal	Aug. of 12.5 MVA, 132/11 kV to 20 MVA, 132/11 kV T/F.	2.38	0	0	2.38
60	69	Augmentation of bus bars, extension in control room building, providing room for second source for station battery etc.	For strengthening of bus – bar arrangement, extension in control room building for the existing 220/132 kV grids of PSTCL, as per the requirement of P&M from time to time, a provision of about 20 Cr..s (i.e. 7,7,6 Cr..s per year) has been made.	10.71	1.19	0	11.90
61	70	Additional 220/132/66 kV line bays related with feasibility cases or as per PSPCL requirement.	As per the requirement of PSPCL, for the load released through feasibility cases, a provision of about 25 Cr..s per year has been made for erection of 66/132/220 kV bays at various grids of PSTCL. (i.e. 8,8,9 Cr..s per year)	13.69	0.60	0	14.28

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
62	71	Second source of battery at various 220/132 kV S/s of PSTCL	Balance work for 49 Nos grids (out of these 31 Nos are 220 kV & remaining 18 Nos are 132 kV S/s) Total cost = 15 Cr..s (with 70% PSDF funding & remaining to be arranged through capital investment)	4.76	1.19	0	5.95
63	72	90 nos PSTCL grids (220 kV) to be provided with SAS. Report already sent for PSDF funding if approved, these stations will be upgraded.	Cost of one station for SAS provision is Rs 4 Cr..s out of this 70% is PSDF funding & balance 30% shall be through capital investment.	23.80	47.60	35.70	107.10
64	74	Replacement of existing conductor of 220 kV Gobindgarh - 400kV Rajpura (DC) with HTLS of suitable capacity.	L.S. Provision in @ Rs. 40 Cr.. per year	4.2	0	0	4.20
65	75	Additional of 14 No T/f on account of making (N-1) complaint system for those grids where only one T/f existing (Annexure-C).	.A provision of Rs. 25 Cr.. for 2020-21, Rs 25 Cr.. for 2021-22 & Rs 20 Cr.. For 2022-23 have been made. Augmentation shall be made for grid stations as per the space availability & loading conditions	30.35	24.40	0	54.74
66	77	132 kV works Bilaspur	Replacement of 1x12.5 MVA, 132/11 kV with 1x20 MVA, 132/11 kV T/F	2.43	0.00	0	2.43
67	78	132 kV Nawanshahar.	Addl. 1x20 MVA, 132/11 kV T/F	3.21	0.00	0	3.21

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
68	87	Augmentation of 132 kV GGSSTP - Asron) 6 KM (0.2sq") and 132 kV GGSSTP - Ropar (19.76 KM) 0.2sq".	Replacement of existing conductor of line with suitable HTLS conductor (on same towers) having a capacity of at least 800A.	9.48	9.48	0	18.96
69	88	CE/ P&M Agenda No. 145/2017-18 dtd 20.09.17. Best Practices recommended by Protection Sub Committee of NRPC inoperation & construction of Sub Stations	Installation of 999 Nos. CVTs at various 220 kV lines for Distance Relay protection	5.95	5.95	0	11.90
70	91	OPGW link between SKPP-RSD- 220 kV Sarna & SKPP-220 kV Sarna		0	4	4	8.00
Total (C)				365.76	178.73	62.63	607.12
D: Spill over of Works approved outside 2nd MYT 2020-23 by Petition/BOD approval							
1	Amendment No. 21/2020-21	400 kv S/S Nakodar	Replacement of 1x315 MVA, 400/220 KV ICT with 1x500 MVA, 400/220 KV ICT	14.28	0	0	14.28
			Cost of dismantlement of 1x315 MVA, 400/220 KV ICT at 400 KV Nakodar	0.00	0	0	0.00
			Construction of 1 No. ICT bay and 1 No. 220 kV bay at 400 kV Nakodar with interlinking link of 220 kV	3.93	0	0	3.93
			Replacement of 2nd 315 MVA, 400/220 KV ICT with 2nd 500 MVA, 400/220 KV ICT	18.09	0	0	18.09

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
			Cost of dismantlement of 2nd 315 MVA, 400/220 KV ICT at 400 KV Nakodar	0.83	0	0	0.83
2	Amendments No.08/2021-22	220K S/S Baghapurana	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	6.19	7.14	0	13.33
		220KV S/S Jhunir	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Talwandi Sabo	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Sandhwan	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Katorewala	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Kotkaror	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Bottian Wala	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Himmatpura	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Abohar	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Dharamkot	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Rehana Jattan	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Katorewala	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Bottian Wala	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.24	0	0	0.24

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
		220KV S/S Talwandi Sabo	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Mansa	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Himmatpura	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Jagraon	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.24	0.119	0	0.36
		220KV S/S Mastewala	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.24	0.01	0	0.25
		220KV S/S Lalton Kalan	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Dharamkot	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Mandi Gobindgarh G-1	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Chajjli	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Dhuri	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Mehal Kalan	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.24	0	0	0.24
		220KV S/S Badshahpur	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.24	0	0	0.24
		132KV S/S Moga -2 (Dhalleke)	1 No. bus coupler between 16/20 MVA 132/11 kV T-1 & 20 MVA 132/11 kV T-2	0.24	0	0	0.24

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
		132KV S/S Samadh Bhai	1 No. bus coupler between 20 MVA 132/11 kV T-1 & 16/20 MVA 132/11 kV	0.24	0	0	0.24
		220 kV S/S Katorewala	1 No. bus coupler between 20 MVA 66/11 kV T-2 & 10/12.5 MVA 66/11 kV T-4	0.24	0	0	0.24
		220 kV S/S Passiana	1 No. 11 kV bus coupler	0.24	0	0	0.24
		220 kV S/S Majitha	1 No. 11 kV bus coupler	0.24	0	0	0.24
3	Amendments No.18/2 021-22	Upgradation of 66 kV substation Old Patiala to 220 kV substation.	2X100 MVA, 220/66 kV T/F With 2 No. 220 kV line bays, 2 No. T/f bays and 1No. Bus coupler bay	8.33	15.47	14.28	38.08
			LILO of one Ckt. of 220 kV Bahadurgarh-Devigarh line (DC on DC 19 km Zebra conductor 420 mm ²)	8.93	0	0	8.93
4	Amendments No.19/2 021-22	400 KV S/stn.Dhanansu.	1x500 MVA, additional 400/220 kV ICT at 400 kV Dhanasu along with 400 kV ICT Bay, 2 nos. 400 KV line Bays, 2 nos. 400 kv Tie Bays, 400 kv Future Bay, 220 kv ICT Bay	22.61	22.61	0	45.22
			LILO of 400 kvNakodar-Kurukshetra line at 400 KvDhanansu with Quad Moose Conductor	11.49	11.49	0	22.98

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
5	Amendment No. 15/2021-22	Evacuation sytem of Shahpur Kandi Hydel Project	220 kV RSD to 220 kV Shahpur Kandi PH-I (SC on DC, 0.5 sq.in, line length 16 km, LILO length 0.5 km approx)	7	7	0	14.00
			220 kV Shahpur Kandi PH-II to 220 kV Sarna (SC on DC, HTLS of 1200 A capacity, line length 18 km approx)	7	7	0	14.00
6	Amendments No.23/2021-22	220kV S/S Jhordan (New) including Substation Automation System SAS of 1 cr.	2x100MVA, 220/66kV T/F with 2 no. 220kV line bays and 1 no. Bus coupler bay including SAS and Civil works.	19.64	22.02	0	41.66
			LILO of one ckt. Of 220kV PakhowalMehal Kalan transmission line (9kM Zebra conductor 420 mm2) at 220kV Jhordan (New).	6.25	9.8	0	16.05
			4 nos 66kV line bays.	0	0	0	0.00
7	Amendments No.24/2021-22.	400 kV S/S BehmanJassa Singh.	2x500 MVA, additional 400/220 kV ICT at 400 kV BehmanJassa Singh along with 2 no. 400 kV ICT Bays, 2 nos. 400 KV line Bays, 2 nos. 400 kv Tie Bays, 400 kv Future Bay, 2 no.220 kv ICT Bays, 220 KV Bus coupler bay, 220 KV Transfer bus coupler bay, 8 nos 220 kv line bays.	36.89	74.97	23.8	135.66

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
			LILO of 400 kv Talwandi Sabo-Nakodar line at 400 KvBehmanJassa Singh(line length-16 km , Twin Moose conductor (Work and review)	50	60	0	110.00
			220 KV D/C line (with OPGW) from 400 KV BehmanJassa Singh to 220kV Talwandi Sabo (Line length -8km, 0.4 sq")	0	0	0	0.00
			LILO of 220 KV Mansa-Talwandi Sabo at 220 KV Maur (Line length - 9km, 0.4 sq")	0	0	0	0.00
			LILO of both circuits of HPCL Mittal -220 KV Mansa at 220 KV bus of 400 KV BehmanJassa Singh(3x2 KM DC on DC , 0.4sq")	0	0	0	0.00
			220 KV D/C line on D/C towers from 400 kvBehmanJassa Singh to GNDTP Bathinda with multi circuit towers in GNDTP premises (Line length -35km , 0.4 sq")	0	0	0	0.00
			6 nos 220 kv bays 2 each at 220 kv Talwandi sabo, Maur& GNDTP.	0	5.95	0	5.95
8	Amendments No.25/2 021-22	220 kv S/S Kharar.	Augmentation of 1 No. 100 MVA T/F at 220kv S/S Kharar to 160 MVA.	12.14	0	0	12.14

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
9	Amendments No.26/2 021-22	220 kV Line Verpal-Patti	Shifting of 220 kV S/C Patti-Verpal line from 220 kV Verpal to 400 kV Amritsar (3km,0.4 sq")	0	0	0	0.00
10	Amendments No.27/2 021-22	220 kV S/S Mohali-2.	220 kV 2 No. Bays	2.62	0.36	0	2.98
11	Amendments No.28/2 021-22	220 kV S/S Wadala Granthian.	Additional 3rd 220/132 kV, 100 MVA Auto T/f	12.26	0	0	12.26
12	Amendments No.29/2 021-22	Installation of capacitor banks at Various S/Stns.		7.56	0	0	7.56
		220K S/S Doraha	4X10.860 MVAR, 66 KV Capacitor Bank at 220K S/S Doraha	0	0	0	0.00
		220KV S/S Sandhwan	2X10.860 MVAR, 66 KV Capacitor Bank	0.01	0	0	0.01
		220KV S/S Dharamkot	2X10.860 MVAR, 66 KV Capacitor Bank	0.01	0	0	0.01
		220KV S/S Banur	2X10.860 MVAR, 66 KV Capacitor Bank	0.01	0	0	0.01
		220KV S/S Dasuya	2X10.860 MVAR, 66 KV Capacitor Bank	0.01	0	0	0.01
		220KV S/S Tibber	2X10.860 MVAR, 66 KV Capacitor Bank	0.01	0	0	0.01
		220KV S/S Chogwan	2X10.860 MVAR, 66 KV Capacitor Bank	0.01	0	0	0.01
		220KV S/S Chola Sahib	2X10.860 MVAR, 66 KV Capacitor Bank	0.01	0	0	0.01
		220KV S/S Banga	2X10.860 MVAR, 132 KV Capacitor Bank	0.01	0	0	0.01
		220KV S/S Butari	2X10.860 MVAR, 132 KV Capacitor Bank	0.01	0	0	0.01
		220KV S/S Hoshiarpur	6X10.860 MVAR, 66 KV Capacitor Bank	0.01	0	0	0.01

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
		220 kV S/S KotlaJanga	3X10.860 MVAR, 132KV Capacitor Bank	0.01	0	0	0.01
13	Amendment No. 01/2022-23	220 kV Mubarikpur (U/G from 66 kV substation Mubarikpur)	U/G of 66 kV Mubarikpur to 220 kV with installation of 2X160 MVA, 220/66 kV transformer (including 2 Nos. line bays, 2 No. T/F bays and 1 No. B/C bay)	15.47	22.61	0	38.08
			a. LILO of 220 kV Mohali-2 – Derabassi line at 220 kV Mubarikpur (U/G from 66 kV) (LILO Length: 3.5 km approx., 0.4", D/C on D/C)	2.22	0	0	2.22
			b. Substation Automation System (SAS) for Rs. 1 Crore.	1.19	0	0	1.19
14	Amendment No. 02/2022-23	220K S/S Banur	Augmentation of 1 no. 100 MVA Transformer at 220 kV Sub-station Banur to 160 MVA	12.14	0	0	12.14
15	Amend 04/22-23	400 KV PGCIL, Amritsar	Shifting of 220kV S/C Rashiana-Verpal line from 220kV Verpal to 400kV Amritsar (3 K.M., 0.4sq").	0	0	0	0.00
16	Amend 06/22-23	220K S/S MGG-1	Augmentation of 2 no. 100 MVA 220/66 KV Transformer at 220 kV Sub-station MGG-1 to 160 MVA	12.14	0	0	12.14

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
17	Amend 07/22-23	220K S/S Chitti (U/G from 66 KV)	Creation of 220 KV Chitti with 1 x 160 MVA T/F (fed from LILO of 220 KV SC line, (2 line bays, 1 T/F bay and 1 B/C bay).	15.47	23.8	0	39.27
			LILO of one ckt. of 400 kV Nakodar – Kartarpur D/C line at 220 kV Chitti (LILO length – 2.5 km, 0.4sq")	3.47	0	0	3.47
18	Amend ment no. 8/22-23	132 KV Nakodar	1 No. 3rd Additional 20 MVA, 132/11 kV T/F	2.62	0	0	2.62
		220 KV S/S Banga	1 No. 3rd Additional 20 MVA 132/11 kV T/F	2.62	0	0	2.62
		220 KV Goraya	1 No. 3rd Additional 20 MVA 132/11 kV T/F	2.62	0	0	2.62
		220 KV Singhawala (Moga)	1 No. 20 MVA 66/11 KV T/f	2.62	0	0	2.62
		132 Moga- 2 (Dhalleke)	1 No. 3rd Additional 20 MVA 132/11 kV T/F	2.62	0	0	2.62
		132 KV Moga-I	1 No. 3rd Additional 20 MVA 132/11 kV T/F	2.62	0	0	2.62
		220 KV Gounsgarh	1 No. 4th Additional 20 MVA 66/11 kV T/F	2.38	0	0	2.38
		220 KV BassiPathana	1 No. 3rd Additional 20 MVA 66/11 kV T/F	2.38	0	0	2.38
		220 KV Humbran	1 No. 3rd Additional 20 MVA 66/11 kV T/F	2.38	0	0	2.38
		220 KV Ajitwal	1 No. 3rd Addl. 66/11 KV 12.5 MVA T/F (spare T/f from system to be used).	1.43	0	0	1.43

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
		220 KV Ghubaya	Aug. of 1 no. 20 MVA with 31.5 MVA, 66/11 KV	3.57	0	0	3.57
		220 KV Amloh	1 No. 4th Additional 20 MVA 66/11 kVT/F	2.74	0	0	2.74
		220 KV Saidpura (Dera Bassi)	Aug. of 1 no. 20 MVA with 31.5 MVA, 66/11 KV	3.57	0	0	3.57
		220 KV Kharar	1 No. 4th Additional 20 MVA 66/11 kVT/F	2.38	0	0	2.38
		220 KV Chogawan	1 No. 3rd Additional 20 MVA 66/11 kVT/F	2.62	0	0	2.62
		220 kV Kohara	Aug. of 1 no. 20 MVA with 31.5 MVA, 66/11 KV {Additional 12.5 MVA, 66/11 kV T/f planned in MYT2020-23 Sr. No. 55 may be considered as deleted }	3.57	0	0	3.57
		220 KV Civil Lines Amritsar	1 No. 3rd Addl. 66/11 KV 12.5 MVA T/F (spare T/f from system to be used).	1.43	0.00	0	1.43
19	Amendment 16/22-23	Rearrangement of connectivity of Transmission lines in Patiala Circle to control the existing overloading of certain lines	a. Termination of 220 kV Rajpura - 400 kV FagganMajra circuit at 220 kV Bahadurgarh	0.35	0	0	0.35
			b. Connecting 220 kV Devigarh to 220 kV Rajpura	0.52	0	0	0.52
			c. Connecting 400 kV Rajpura to 220 kV Rajpura (including new link of approx. 5 km length, D/C on D/C)	3.65	0	0	3.65

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
			d. Connecting 400 KV Rajpura to 220 kV Mohali-1 (one circuit direct and one circuit via 220 kV Banur, on D/C line, including new link of approx. 7km length, D/C on D/C)	5.11	0	0	5.11
			e. 2 Nos. 220 kV bays at 400 kV Rajpura	7.14	0	0	7.14
			f. 220 kV Side bus extension arrangement to be made at 400 kV Rajpura for providing suitable space for 2 Nos 220 kV Bays	0.12	0	0	0.12
Total (D)				386.18	290.34	38.08	714.60
E: P&M Works							
1	6	Tan Delta and Resistive kit for testing of Transformer oil	-	0.45	0.00	0.00	0.45
2	7	PT/CVT testing kit for ODTL	-	0.39	0.00	0.00	0.39
3	8	Remote Control operation of 400kV S/S's Muktsar, Nakodar and Makhu	-	1.76	0.00	0.00	1.76
4	10	Online partially discharge kit equipment for 400 kV ICT at 400kV S/s. (14 No.)	-	5.57	5.88	4.74	16.19
5	11	CRM- Contact Resistance measurement meter for maintenance gangs	-	1.00	0.00	0.00	1.00

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition/ scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
6	18	Providing RCC Roads in 220kV S/S to facilitate movement of heavy vehicle loaded with equipment.	-	3.7	0.00	0.00	3.70
7	19	Providing PCC in the yard area in 220kV S/s	-	3.02	2.00	0.00	5.02
8	7 no. of Table 22	OPGW laid by PGCIL under package V on turnkey basis	-	1.83	2.13	2.04	6.00
Total (E)				17.72	10.01	6.78	34.51
Total Spill over of Transmission works				965.97	560.04	169.06	1695.07

Annexure 2 – List of works with no expenditure except for a few lac expenditure on tender/survey

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
1	4	220 kV S/S Beas (new)	2x100 MVA 220/132 kV Auto T/F	12.14	24.99	15.23	52.36
			6x132kV line bays (Existing 3 and additional 3)	0.00	0.00	0.00	0.00
		132KV S/S system at Butari will be dismantled.	LILO of Butari – BBMB Jalandhar at PGCIL Jalandhar 2.5Km 0.4Sq" and subsequently LILO of PGCIL Jalandhar-Butari at Beas 22.5Km 0.4Sq"	15.58	38.97	23.39	77.94
		Bypassing 132 Kv Beas line to Tangra&Dhilwan -Beas/Butari to Ekalgadda after LILO of Dhilwan-Butari at Beas (new)	Shifting of 132kV system from 220kV Butari (1 Km length) by LILO of 132 KV Dhilwan - Butari at Beas 1.5 KMs with some portion on Modern Techniques Total Length 2.5 Km	0.00	0.00	0.00	0.00
			2x132kV towers dismantlement & 3nos. Towers to be erected	0.00	0.00	0.00	0.00
			Conversion of 132kV Tarn taran - Butari-Ekalgadda T-off to LILO 15Km 0.2 Sq"	0.00	0.00	0.00	0.00
			132KV D/C Beas - Ekalgadda Line 30 Kms 0.2 Sq"	0.00	0.00	0.00	0.00
2	14	220kV G.T. Road Ludhiana (New GIS) or (in Ludhiana area)Includind SAS for RS 1cr.	220 kV S/s G.T. Road Ludhiana (New GIS Grid in the premises of existing 66 kV S/s G.T. Road Ludhiana) or (in Ludhiana area) with 2x160MVA, 220/66 kV T/F	0.00	0.00	0.00	0.00

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
3	15		LILO of 220 kV Ladowal - Gaunsgarh (DC) lines both ckts. at 220 kV G.T. Road Ludhiana. LILO Length = 7KM (appx.), conductor size 0.4sq" (2xDC lines).	0.24	0.00	0.00	0.24
4	16		220 kV bays = 4 Nos.	0.00	0.00	0.00	0.00
5	17		66 kV bays = 4 Nos.	0.00	0.00	0.00	0.00
6	23	220 kV Nawanpind (new grid in the premises of 66 kV S/s Nawanpind) Including SAS for RS 1cr. Amendment No. 17/21-22	2x100 MVA, 220/66 kV T/F including 4 No. 220 kV line bays, 2 T/F bays and 1 Bus coupler bay and associated 66 kV bays) including SAS .	16.07	16.07	0.00	32.13
7	24		LILO of 220 kV Verpal – Wadalagrathian and Verpal-Udhoke lines at proposed DC line at proposed 220 kV S/s Nawanpind. 2xDC, conductor size 0.4sq", LILO length 1 KM.	1.55	0.97	0.00	2.52
8	27	Additional link	Stringing of 11ndckt. Of 220kV Mukatsar-Ghubayaline, conductor size 0.4sq", Line length 40.3 KM	5.52	2.20	0.00	7.72
9	30	New 220 kV Giaspura including SAS of RS 1 cr.	Under study	0.24	0.00	0.00	0.24
10	91	OPGW link between SKPP-RSD- 220 kV Sarna & SKPP-220 kV Sarna		0.00	4.00	4.00	8.00

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
11	72	90 nos PSTCL grids (220 kV) to be provided with SAS. Report already sent for PSDF funding if approved, these stations will be upgraded.	Cost of one station for SAS provision is Rs 4 Cr..s out of this 70% is PSDF funding & balance 30% shall be through capital investment.	23.80	47.60	35.70	107.10
12	177	220 kV S/Stn Fazilka (U/G from 66 kV)	220 kV S/Stn Fazilka (U/G from 66 kV)	7.14	5.95	14.28	27.37
13	178		400 kV S/Stn Mukatsar - 220 kV S/Stn Fazilka 220 kV DC line	8.67	8.67	8.67	26.01
14	179		220 kV Bays	2.38	2.38	0.00	4.76
15	Amendments No.18/2021-22	Upgradation of 66 kV substation Old Patiala to 220 kV substation.	2X100 MVA, 220/66 kV T/F With 2 No. 220 kV line bays, 2 No. T/f bays and 1No. Bus coupler bay	8.33	15.47	14.28	38.08
LILo of one Ckt. of 220 kV Bahadurgarh-Devigarh line (DC on DC 19 km Zebra conductor 420 mm ²)			8.93	0.00	0.00	8.93	
16	Amendment No. 15/2021-22	Evacuation system of Shahpur Kandi Hydel Project	220 kV RSD to 220 kV Shahpur Kandi PH-I (SC on DC, 0.5 sq.in, line length 16 km, LILo length 0.5 km approx)	7.00	7.00	0.00	14.00
			220 kV Shahpur Kandi PH-II to 220 kV Sarna (SC on DC, HTLS of 1200 A capacity, line length 18 km approx)	7.00	7.00	0.00	14.00
17	Amendments No.23/2021-22	220kV S/S Jhordan (New) including Substation Automation System SAS of 1 cr.	2x100MVA, 220/66kV T/F with 2 no. 220kV line bays and 1 no. Bus coupler bay including SAS and Civil works.	19.64	22.02	0.00	41.65

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
			LILO of one ckt. Of 220kV Pakhowal Mehal Kalan transmission line (9KM Zebra conductor 420 mm2) at 220kV Jhordan (New).	6.25	9.80	0.00	16.05
			4 nos 66kV line bays.	0.00	0.00	0.00	0.00
18	Amendments No.24/2021-22.	400 kV S/S Behman Jassa Singh.	2x500 MVA, additional 400/220 kV ICT at 400 kV Behman Jassa Singh along with 2 no. 400 kV ICT Bays, 2 nos. 400 KV line Bays, 2 nos. 400 kv Tie Bays, 400 kv Future Bay, 2 no.220 kv ICT Bays, 220 KV Bus coupler bay, 220 KV Transfer bus coupler bay, 8 nos 220 kv line bays.	36.89	74.97	23.80	135.66
			LILO of 400 kv Talwandi Sabo-Nakodar line at 400 KvBehman Jassa Singh(line length-16 km , Twin Moose conductor (Work and review)	50.00	60.00	0.00	110.00
			220 KV D/C line (with OPGW) from 400 KV Behman Jassa Singh to 220kV Talwandi Sabo (Line length - 8km, 0.4 sq")	0.00	0.00	0.00	0.00
			LILO of 220 KV Mansa-Talwandi Sabo at 220 KV Maur (Line length -9km, 0.4 sq")	0.00	0.00	0.00	0.00

Sr. No.	Sr No. as per CIP Order	Particulars	Network Addition	FY 2023-24	FY 2024-25	FY 2025-26	Total Cost (Rs. Cr)
			LILO of both circuits of HPCL Mittal -220 KV Mansa at 220 KV bus of 400 KV Behman Jassa Singh(3x2 KM DC on DC , 0.4sq")	0.00	0.00	0.00	0.00
			220 KV D/C line on D/C towers from 400 kv Behman Jassa Singh to GNDTP Bathinda with multi circuit towers in GNDTP premises (Line length -35km , 0.4 sq")	0.00	0.00	0.00	0.00
			6 nos 220 kv bays 2 each at 220 kv Talwandi sabo, Maur& GNDTP.	0.00	5.95	0.00	5.95
19	Amend 07/22-23	220K S/S Chitti (U/G from 66 KV)	Creation of 220 KV Chitti with 1 x 160 MVA T/F (fed from LILO of 220 KV SC line, (2 line bays, 1 T/F bay and 1 B/C bay).	15.47	23.80	0.00	39.27
			LILO of one ckt. of 400 kv Nakodar – Kartarpur D/C line at 220 kv Chitti (LILO length – 2.5 km, 0.4sq")	3.47	0.00	0.00	3.47
Total Spill over of Transmission works				256.30	377.80	139.35	773.45

Annexure 3 – Capital Investment Plan of New works submitted by PSTCL

Sr. No.	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total
TS Works						
1	220 kV S/S GNDTP	Additional 160 MVA, 220/66 kV transformer including 66kV busbar extension (2x50MVA 132/66KV will be spared)	14.71	0.00	0.00	14.71
2	Upgradation of 66 kV Bhalaiana to 220 kV sub-station.	Creation of 220kV Bhalaiana with 2x100MVA, 220/66kV T/F (2 line bays, 2 T/F bays & 1no. Bus Coupler bay)	3.21	6.42	9.64	19.27
		LILO of S/C 220 kV Muktsar – 220 kV Malout line (LILO length 1km, 0.4Sq").				
3	Upgradation of 66 kV Guru Har Sahai to 220 kV sub-station	Creation of 220kV Guru Har-sahai with 2x100MVA , 220/66kV T/F (4 line bays at Guru Har Sahai, 2bays each at Ghubaya&Jhoke Hari Har, 2 T/F bays & 1no. bus coupler bay)	13.24	26.48	39.72	79.44
		D/C line from 220 kV Ghubaya and D/C line from 220 kV Jhoke Hari Har (Line length (35km & 30km, 0.4Sq").				
4	Upgradation of 132 kV Samadh Bhai to 220 kV level	Creation of 220kV Samadh Bhai with 1x100MVA , 220/132kV T/F (4 line bays, 1 T/F bay & 1no. Bus Coupler Bay)	8.03	12.05	20.09	40.17
		LILO of both circuits of 220 kV Baghapurana – Bajakhana line (LILO Length - 8km, 0.4Sq").				
5	Upgradation of 66 kV Chaherhu to 220 kV level (2nd 100MVA, 220/66kV T/F for N-1)	Creation of 220kV Chaheru with 2x100MVA , 220/66kV T/F (4 line bays, 2 T/F bays & 1no. Bus coupler bay)	5.10	10.20	15.30	30.60
		LILO of 400 kV Nakodar – 220 kV Hoshiarpur and Nakodar - Rehana Jattan 220 kV Ckts at Proposed 220 kV S/S Chaheru (LILO Length - 6km + 6km, 0.4 Sq")				
6	Upgradation of 66 kV Gill Road Ludhiana to 220 kV level (Under Study)	Creation of 220kV Gill Road Ludhiana with 2X160MVA 220/66KV T/F (4 line bays (2 at Proposed Gill road and 2 at Ferozepur road), 2 T/F bays & 1no. bus coupler bay)	0.24	0.00	0.00	0.24

Sr. No.	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total
		D/C line (6km, 0.4Sq") from 220 kV Ferozepur Road Ludhiana on multi circuit towers/modern techniques.				
7	Upgradation of 66 kV Bija/Chawa to 220 kV level	Creation of 220kV Bija/Chawa with 2x100MVA, 220/66kV T/F (2 nos. line bays, 2 T/F bays & 1no. Bus Coupler bay) LILO of one circuit of upcoming Dhanasu - Doraha 220 KV line at Bija (12km, 0.4Sq")	4.78	9.56	14.34	28.68
8	Upgradation of 66 kV Bhadson to 220 kV level.	Creation of 220kV Bhadson with 2x100MVA, 220/66kV T/F (6 line bays (2 at Amlloh and 4 at Bhadson), 2 T/F bays & 1no. Bus Coupler Bay) D/C line from 400 kV PGCIL Patiala (16km, 0.4Sq") and D/C line from 220 kV Amlloh (12km, 0.4Sq").	15.35	23.02	38.37	76.74
9	Upgradation of 66 kV Chourwala to 220 kV level	Creation of 220kV Chourwala with 2x160MVA, 220/66kV T/F (4 line bays, 2 T/F bays & 1no. Bus Coupler Bay) LILLO of both circuits of 400 kV Rajpura – 220 kV Gobindgarh-1 line (HTLS) (8 km, 0.4Sq" HTLS equivalent)	13.61	20.41	34.02	68.04
10	Upgradation of 66 kV Toot to 220 kV level.	Creation of 220kV Toot with 2x100MVA, 220/66kV T/F (2 line bays, 2 T/F bay & 1no. Bus Coupler Bay) LILLO of one circuit of 400 kV Makhu – 220 kV Algon line at Proposed 220KV s/s Toot (7km, 0.4Sq")	4.07	8.13	12.20	24.40
11	Double bus arrangement at 220 kV Mandi Gobindgarh – 2		0.00	0.00	16.66	16.66
12	Upgradation of 132 kV Jandiala Guru to 220 kV level	Creation of 220kV Jandiala Guru with 2x100MVA, 220/132kV T/F (2 line bays, 2 T/F bays & 1no. Bus Coupler Bay)	8.36	12.54	20.90	41.79

Sr. No.	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total
		LILO of 220 kV Butari – Verpal circuit on multi-circuit Tower/Modern techniques at Jandiala Guru (4km, 0.4Sq")				
13	Upgradation of 132 kV Tanda to 220 kV level	Creation of 220kV Tanda with 1x100MVA, 220/132kV T/F and 1x100MVA, 220/66KV T/F (2 line bays, 2 T/F bays & 1no. Bus Coupler Bay)	8.74	13.11	21.84	43.68
		LILO of S/C 220 kV BBMB Jalandhar-Dasuya line (4.5Km, 0.4Sq")				
14	Upgradation of 132 kV Sri Hargobindpur to 220 kV level (1X100 MVA 220/132 kV + 1x100 220/66 kV - already planned 3rd 220/132 kV Auto transformer at Wadala Granthian be dropped) (132 kV line from WG and 132/66 KV TFs will be spared)	Creation of 220kV Sri Hargobindpur with 1x100MVA, 220/132kV & 1x100MVA, 220/66kV T/Fs (2 line bays, 2 T/F bays & 1no. Bus Coupler Bay)	8.01	16.02	24.03	48.06
		220 KV D/C Line From Proposed 400 KV S/S Wadala Granthian (28km, 0.4Sq")				
15	Re-arrangement to provide 2nd connectivity to 220 kV S/s Naraingarh	Double circuit from 220kV Khassa-Chogawan, 12 Km, 0.4 Sq"	10.81	16.22	27.04	54.07
		Disconnecting 220kV Khassa -Civil Line ASR circuit and Chogawan- Khassa circuits from Khassa and diverting them to Naraingarh				
		1 no. circuit between 220kV Chogawan - Nariangarh and 1no. circuit between 220kV Civil Line ASR - Nariangarh, D/c line with 12.5 Km 0.4Sq"				
16	220 kV S/S Bajakhana	Double bus arrangement at Bajakhana	9.82	9.82	0.00	19.64

Sr. No.	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total
17	220KV S/S Goraya (Addl. 220/66KV 100MVA T/F for N-1 compliance)	Connectivity of 220KV Noormehal with 220KV Goraya with D/C line (length - 25km, 0.4Sq") (LILO of both circuits of BBMB Jalandhar-Jamalpur line at Goraya subject to approval of Power Sub-committee of BBMB)	10.47	26.16	15.70	52.33
18	400KV Wadala Granthian	Stage 1: Creation of 400kV Wadala Granthian with 2x500MVA, 400/220kV ICTs (2no. 400 kV line bays, 2no. 400 kV ICT bays, 2 no. 400 kV Tie Bays, 4 no. 220 kV Line bays, 4 no. 220 kV bus interconnection bay, 2 no. 220 kV ICT bays, 1 no. 220 kV TBC bay, 1 no. 220 kV BC bay) LILO of 1 circuit of 400 kV Moga - Kishanpur line (20km, Quad Moose)	0.00	90.21	90.21	180.42
		Stage 2: Addl. 1X500 MVA, 400/220 kV ICT (2 line bays, 1 ICT bays & 2 no. Tie Bays) LILO of 2nd circuit of 400 kV Moga - Kishanpur line (20km, Quad moose)				
19	400 kV Makhu	To give second ISTS connectivity	0.00	0.00	0.00	0.00
20	220 kV Sultanpur	LILO of one circuit 220 kV Kanjli-Science city at 220 kV Sultanpur with Moose conductor (28Kms, 0.5 Sq")	0.00	24.16	24.16	48.31
21	To provide second source to 220 kV S/S Badhni Kalan		0.00	0.00	0.00	0.00
22	220 kV Jadla	LILO of MISS Ganguwal-Dhanansu at Jadla (2 km, 0.4")	0.00	2.89	2.89	5.77
23	220KV PGCIL Panchkula (Barwala) - Derabassi Line	220KV PGCIL Panchkula (Barwala)-Derabassi Line (D/C) (14km, 0.4Sq")	0.00	0.00	26.45	26.45

Sr. No.	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total
24	Strengthening of Verka-Mall Mandi Link and to establish link with Civil Lines ASR	(A) Disconnecting 132 kV Verka - Mal Mandi link and 132 kV Verka - Jayantipura link.	0.00	0.00	0.00	0.00
		(B) Connecting 132 kV Mal Mandi with 132 kV Jayantipur.	19.74			19.74
		(C) Connecting 132 kV Civil lines ASR with 132 kV Verka. (overhead 15 km + 1 km modern techniques)	14.38			14.38
		(D) Connecting 132 kV Civil lines ASR with 132 kV Mal Mandi. (overhead 26 km + 1 km underground)		32.00		32.00
25	Requirement of Capacitor bank at various S/Stns as per CPRI report.	Under study as per CPRI report	0.00	0.00	0.00	0.00
26	400 kV Rajpura	4th 500 MVA additional T/F	5.95	32.13	0.00	38.08
27	To curtail overloading during N-1 conditions of Shanan-Kangra-Pathankot corridor	Under Study	0.00	0.00	0.00	0.00
28	S/C on D/C line from 400 kV Dhuri to 220 kV Bhawanigarh. Bay available at 400 kV Dhuri (18 km)		0.00	0.00	23.88	23.88
29	220 kV Hoshiarpur	2nd source connectivity to Hoshiarpur via D/C on D/C line 220 kV Dasuya-Hoshiarpur (40 km, 0.4 sq") & using existing MCKT Towers	12.57	18.86	31.43	62.86
30	220 kV Banga (Nawanshehar)	Replacement of 2x50MVA 132/66 kV transformers with 2x100MVA 220/66 kV transformers	0.00	10.85	10.85	21.69

Sr. No.	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total
31	220 kV S/S Chajji	Augmenatton of 66 kV single bus bar from double conductor to quadruple conductor	0.60	0.00	0.00	0.60
32	400KV Dhuri to 400KV Patran	To increase ISTS point of drawl for ATC/TTC and injection of nuclear Power from Fatehabad via TBCB Patran	0.00	0.00	0.00	0.00
33	Double bus bar arrangement at 220 kV Butari	Making 220 kV Bus of Butari as double and shifting of 220/132 kV T/F of Butari to 220 kV Jandiala	1.07	1.07	0.00	2.14
34	220 kV D/C link between 220 kV S/S Butari and 400 kV S/S Wadala Granthian	220 kV D/C Link between 220 kV S/S Butari and 400 kV S/S Wadala Granthian, (35 km, 0.4 Sq" conductor)	0.00	13.20	26.41	39.61
35	Upgradation of 66 kV Ajnala to 220 kV level	Creation of 220 kV Ajnala with 1X160MVA + 1X100 MVA, 220/66 kV T/Fs (2 line bays, 2 T/F bays & 1no. Bus Coupler Bay)	5.79	11.58	17.37	34.74
		LILO of S/C line 220 kV FatehgarhChurian - 220 kV Civil Lines Amritsar (LILO length 18 km, 0.4Sq")				
36	Upgradation of 66 kV Bhagta Bhai ka to 220 kV level	Creation of 220kV Bhagta Bhai Ka with 1X160MVA + 1X100MVA, 220/66kV T/Fs (4 line bays, 2 T/F bays & 1no. Bus Coupler Bay)	7.02	14.03	21.05	42.10
		LILO of both circuits of 220 kV Himmatpura - GHTP Line (Line length 24 km, 0.4Sq")				
37	Upgradation of 66 kV Aerocity to 220 kV level (GIS substation)	Under Study	0.00	0.00	0.00	0.00
38	Upgradation of 66 kV Kurali to 220 kV level	Under Study	0.00	0.00	0.00	0.00

Sr. No.	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total
39	Upgradation of 66 kV Bhabat to 220 kV level	Under Study				0.00
40	220 kV MGG-3	Aug. of 2x100 220/66 kV T/f with 2x160MVA 220/66 kV T/F	12.54		12.54	25.08
41	220 kV Maur	Addl. 220/66 kV 100 MVA T/F		10.85		10.85
42	220 kV Kartarpur	Aug. of 100 MVA, 220/66 kV T/f to 160 MVA		12.53		12.53
43	220 kV S/S Jhokeharihar (Amend No. 11/2021-22)	1 No. Additional 220/66 kV 100 MVA T/F			10.85	10.85
44	220 kV Maur	Addl. 66/11 KV, 20 MVA T/F		3.57		3.57
45	220 kV Talwandi sabo	Aug. of 66/11 kV, 12.5 MVA T/f to 20 MVA	3.25			3.25
46	220 kV Bottianwala	Aug. of 66/11 kV, 12.5 MVA T/f to 20 MVA			3.25	3.25
47	220 kV Baghapurana	Aug. of 66/11 kV, 12.5 MVA T/f to 20 MVA		3.25		3.25
48	132 kV Bhogpur	Aug. of 132/11 kV, 12.5 MVA T/f to 20 MVA		3.09		3.09
49	132 kV Sosan	Addl 12.5 MVA, 132/11 V T/F with CR Extension	4.22			4.22
50	220 kV Devigarh	Addl 66/11 kV, 12.5 MVA T/F with CR Extension	3.57			3.57
51	132 kV Chamkaur Sahib	1 No. 12.5 MVA, 66/11 kV T/F with CR extension	3.57			3.57
52	132 kV Kotakpura-1	Aug. of 12.5 MVA, 132/11 kV T/f to 20 MVA, 66/11 kV T/F		3.12		3.12
53	220 kV Kotkaror	Addl. 66/11 kV, 12.5 MVA T/f including CR Extension	3.57			3.57
54	220 kV Badni Kalan	Addl. 66/11 kV, 20 MVA T/f including CR Extension		3.57		3.57
55	220 kV Barnala (Handiaya)	Addl. 10/12.5MVA, 66/11 kV T/F		3.57		3.57
56	220 kV Dhanaula	Addl. 10/12.5 MVA, 66/11 kV T/F with CR extension		3.57		3.57
57	220 kV Pakhowal	Aug. of 10/12.5 MVA, 66/11 kV with 20 MVA, 66/11 kV T/F		3.25		3.25

Sr. No.	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total
58	220 kV Hoshiarpur (Hoshiarpur-Chohal Loading)	To replace 12.5 MVA and 20 MVA, 132/11 kV T/fs with 2X20 MVA, 66/11 kV T/Fs	3.12		3.12	6.24
59	132 kV Swadi Kalan	extension in Control room	0.36			0.36
60	220 kV Malerkotla	extension in Control room	0.36			0.36
61	3 No. Truck mounted hydraulic cranes i.e. Loader 05 Ton Capacity	Loaders are used for Loading/unloading of various equipment of transm,ission system, erection of various electrical substation equipment including Power transformers. The same vehcile may also be utilised as truck for shifting of material and T&P etc.	1.81			1.81
62	3 No. Filtration set 6000 LPH capacity with operating voltage of 415V (3 Phase)	The filtration sets are used for dehydration and filtration of transformer oil, required during erection of all Power transformers.	1.67	0.00	0.00	1.67
63	1 No. Vacuum drying Plant/ Oven For 100MVA P/T/Fs	The Vacuum Drying Plant is suitable for drying the active parts of transformers in an Autoclave by using the classical drying method.	4.76	0.00	0.00	4.76
64	220 kV S/S Sahnewal	To make 66 kV double bus bar arrangement (remaining part of existing 66 kV lines) needs to be shifted to newly erected/ to be erected 66 kV line bays. Due to involvement of shifting of 66 kV lines the expenditure needs to be revised.	0.00	1.67	0.00	1.67
65	400 kV Dhanasu	Sub-station Capacity enhancement	0.00	0.00	0.00	0.00
66	Replacement of Disc Insulators of 400 kV PSTCL lines with Polymer Insulators		2.38	4.76	4.76	11.90

Sr. No.	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total
67	Makhu, Rajpura, Mukatsar/ BehmanJassa Singh (Malkana), and Dhanansu	4nos. 400 kV, 125 MVAR Reactors				0.00
68	Miscellaneous	Augmentation of bus bars, extension in control room building, providing room for second source for station battery etc.	11.90	11.90	11.90	35.70
69	Miscellaneous	Augmentation/additions of T/fs at 220/132/66 kV S/Stns of PSTCL.	11.90	11.90	11.90	35.70
70	Miscellaneous	Additional 220/132/66 kV line bays related with feasibility cases or as per PSPCL/PSTCL Requirement	11.90	11.90	11.90	35.70
71	Miscellaneous	Unforeseen emergency works	11.90	11.90	11.90	35.70
Total (A)			298.43	565.52	666.66	1530.60
72	-	Procurement of Fork lifter for Jamsher Store and Procurement of Weighing Machine for PSTCL Stores	0.12	0.00	0.00	0.12
73	-	Procurement of IT related Hardware items, Software Licences, Cyber security related and unforeseen Capital expenditure	1.00	1.00	1.00	3.00
Total (B)			1.12	1.00	1.00	3.12
74	-	To provide/replace ACs in existing 220 KV & 400 KV S/S's	0.50	0.50	0.50	1.50
75	-	To provide man lifter cum working platform at new 400 KV S/Ss i.e BehmanJassa Singh, Dhanansu and Ropar	2.50	0.00	0.00	2.50
76	-	15 KV Insulation Tester for new 400 KV & 220 KV S/Ss (15 No.)	0.40	0.40	0.40	1.20
77	-	T&P for new upcoming S/Ss and existing S/Ss	0.20	0.20	0.20	0.60
78	-	T&P for new upcoming S/Ss and existing lines inc. new HTLS lines	0.20	0.20	0.20	0.60

Sr. No.	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total
79	-	Camera for testing porcelain disc insulators (One No.)	0.25	0.00	0.00	0.25
80	-	Tower footing resistance sets (5 Nos i.e one per circle)	0.00	0.15	0.00	0.15
81	-	High end Contact resistance meter (1 No.)	0.15	0.00	0.00	0.15
82	-	High end Earth tester cum soil resistivity measurement (1 No.)	0.20	0.00	0.00	0.20
83	-	Up-gradation of existing BDV Kits (2 Nos.) from OEM as per new IEC standards for ODTL	0.06	0.00	0.00	0.06
84	-	PCB (polychlorinated Biphenyl) test kit for oil as per new IEC standards	0.30	0.00	0.00	0.30
85	-	Up-gradation of HPLC kit of ODTL from OEM to conduct additional oil tests of metal passivator and DBDS as per new IEC standards	0.15	0.00	0.00	0.15
86	-	Up-gradation of two existing omicron relay test kits for advanced distance relay testing functions	0.10	0.00	0.00	0.10
87	-	OTDR (1) for T&C Cell under Communication circle	0.28	0.00	0.00	0.28
88	-	Medium end Earth testers (25)	0.00	0.00	0.50	0.50
89	-	Low end thermo-vision cameras for TL gangs (5)	0.00	0.00	0.50	0.50
90	-	Cable fault locator	0.00	2.00	0.00	2.00
91	-	Cable analyser	0.00	0.00	4.00	4.00
92	-	Up-gradation of old ULDC fibre optic system (Comm.)	1.25	2.00	2.00	5.25
93	-	Remote Control Operation along with VMS of 400kV S/SS's BehmanJassa Singh, Dhanasu and Ropar	0.00	0.00	3.00	3.00
94	-	Up-gradation of server cum gateways of existing SAS equipped sub-stations with IEC 60870-5-104 licenses	0.20	0.00	0.00	0.20
95	-	SAS software along with relevant licenses and associated hardware	0.00	0.60	0.00	0.60

Sr. No.	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Total
96	-	For Cyber Security- intrusion detection system and hardware based firewall for SAS equipped S/Ss	0.00	6.00	0.00	6.00
97	-	Construction of safety walls between transformers in adjacent bays	2.00	2.00	2.00	6.00
98	-	Transformer diagnosis system with facility of all types of major tests in-built in one kit	0.00	0.00	0.45	0.45
Total (C)			8.74	14.05	13.75	36.54
Total [A+B+C]			308.29	580.57	681.41	1570.27

Annexure 4 – WORKS COSTING MORE THAN 50 CRORES under TBCB Mode.

S.No.	Sr. No.(as per CIP submitted)	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Capex requirement for 3rd CP
SPILL OVER WORK SCHEMES							
1	4	220 kV S/S Beas (new)	2x100 MVA 220/132 kV Auto T/F	12.14	24.99	15.23	52.36
		132KV S/S system at Butari will be dismantled.	6x132kV line bays (Existing 3 and additional 3)	0.00	0.00	0.00	0.00
		Bypassing 132 Kv Beas line to Tangra & Dhilwan-Beas/Butari to Ekalgadda after LILO of Dhilwan-Butari at Beas (new)	LILO of Butari – BBMB Jalandhar at PGCIL Jalandhar 2.5Km 0.4Sq" and subsequently LILO of PGCIL Jalandhar-Butari at Beas 22.5Km 0.4Sq"	15.58	38.97	23.39	77.94
			Shifting of 132kV system from 220kV Butari (1 Km length) by LILO of 132 KV Dhilwan - Butari at Beas 1.5 KMs with some portion on Modern Techniques Total Length 2.5 Km	0.00	0.00	0.00	0.00
			2x132kV towers dismantlement & 3nos. Towers to be erected	0.00	0.00	0.00	0.00
			Conversion of 132kV Tarn taran - Butari-Ekalgadda T-off to LILO 15Km 0.2 Sq"	0.00	0.00	0.00	0.00
			132KV D/C Beas - Ekalgadda Line 30 Kms 0.2 Sq"	0.00	0.00	0.00	0.00
2	72	90 nos PSTCL grids (220 kV) to be provided with SAS. Report already sent for PSDF funding if approved, these stations will be upgraded.	Cost of one station for SAS provision is Rs 4 Cr..s out of this 70% is PSDF funding & balance 30% shall be through capital investment.	23.80	47.60	35.70	107.10

S.No.	Sr. No.(as per CIP submitted)	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Capex requirement for 3rd CP
	Amendments No.18/2021-22.	Upgradation of 66 kV substation Old Patiala to 220 kV substation		17.26	15.47	14.28	47.01
3	Amendments No.24/2021-22.	400 kV S/S Behman Jassa Singh.	2x500 MVA, additional 400/220 kV ICT at 400 kV Behman Jassa Singh along with 2 no. 400 kV ICT Bays, 2 nos. 400 KV line Bays, 2 nos. 400 kv Tie Bays, 400 kv Future Bay, 2 no.220 kv ICT Bays, 220 KV Bus coupler bay, 220 KV Transfer bus coupler bay, 8 nos 220 kv line bays.	36.89	74.97	23.8	135.66
			LILO of 400 kv Talwandi Sabo-Nakodar line at 400 KvBehmanJassa Singh(line length-16 km , Twin Moose conductor (Work and review)	50.00	60.00	0.00	110.00
			220 KV D/C line (with OPGW) from 400 KV BehmanJassa Singh to 220kv Talwandi Sabo (Line length - 8km, 0.4 sq")	0.00	0.00	0.00	0.00
			LILO of 220 KV Mansa-Talwandi Sabo at 220 KV Maur (Line length -9km, 0.4 sq")	0.00	0.00	0.00	0.00
			LILO of both circuits of HPCL Mittal -220 KV Mansa at 220 KV bus of 400 KV BehmanJassa Singh(3x2 KM DC on DC , 0.4sq")	0.00	0.00	0.00	0.00

S.No.	Sr. No.(as per CIP submitted)	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Capex requirement for 3rd CP
			220 KV D/C line on D/C towers from 400 kvBehmanJassa Singh to GNDTP Bathinda with multi circuit towers in GNDTP premises (Line length -35km , 0.4 sq")	0.00	0.00	0.00	0.00
			6 nos 220 kv bays 2 each at 220 kv Talwandi sabo, Maur& GNDTP.	0	5.95	0	5.95
NEW WORKS SCHEMES							
1	3	Upgradation of 66 kV Guru Har Sahai to 220 kV sub-station	Creation of 220kV Guru Har-sahai with 2x100MVA , 220/66kV T/F (4 line bays at Guru Har Sahai, 2bays each at Ghubaya&Jhoke Hari Har, 2 T/F bays & 1no. bus coupler bay) D/C line from 220 kV Ghubaya and D/C line from 220 kV Jhoke Hari Har (Line length (35km & 30km, 0.4Sq").	13.24	26.48	39.72	79.44
2	5	Upgradation of 66 kV Chaherhu to 220 kV level (2nd 100MVA, 220/66kV T/F for N-1)	Creation of 220kV Chaherhu with 2x100MVA , 220/66kV T/F (4 line bays, 2 T/F bays & 1no. Bus coupler bay) LILO of 400 kV Nakodar – 220 kV Hoshiarpur and Nakodar - Rehana Jattan 220 kV Ckts at Proposed 220 kV S/S Chaherhu (LILO Length - 6km + 6km, 0.4 Sq")	5.10	10.20	15.30	30.60
3	8	Upgradation of 66 kV Bhadson to 220 kV level.	Creation of 220kV Bhadson with 2x100MVA, 220/66kV T/F (6 line	15.35	23.02	38.37	76.74

S.No.	Sr. No.(as per CIP submitted)	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Capex requirement for 3rd CP
			bays (2 at Amlah and 4 at Bhadson), 2 T/F bays & 1no. Bus Coupler Bay)D/C line from 400 kV PGCIL Patiala (16km, 0.4Sq") and D/C line from 220 kV Amlah (12km, 0.4Sq").				
4	9	Upgradation of 66 kV Chourwala to 220 kV level	Creation of 220kV Chourwala with 2x160MVA, 220/66kV T/F (4 line bays, 2 T/F bays & 1no. Bus Coupler Bay) LILO of both circuits of 400 kV Rajpura – 220 kV Gobindgarh-1 line (HTLS) (8 km, 0.4Sq" HTLS equivalent)	13.61	20.41	34.02	68.04
5	14	Upgradation of 132 kV Sri Hargobindpur to 220 kV level (1X100 MVA 220/132 kV + 1x100 220/66 kV - already planned 3rd 220/132 kV Auto transformer at Wadala Granthian be dropped) (132 kV line from WG and 132/66 KV TFs will be spared)	Creation of 220kV Sri Hargobindpura with 1x100MVA, 220/132kV & 1x100MVA, 220/66kV T/Fs (2 line bays, 2 T/F bays & 1no. Bus Coupler Bay) 220 KV D/C Line From Proposed 400 KV S/S Wadala Granthian (28km, 0.4Sq")	8.01	16.02	24.03	48.06
6	15	Re-arrangement to provide 2nd connectivity to 220 kV S/s Naraingarh	Double circuit from 220kV Khassa-Chogawan, 12 Km, 0.4 Sq" Disconnecting 220kV Khassa -Civil Line ASR circuit and Chogawan- Khassa circuits from Khassa and diverting them to Naraingarh	10.81	16.22	27.04	54.07

S.No.	Sr. No.(as per CIP submitted)	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Capex requirement for 3rd CP
			1 no. circuit between 220kV Chogawan - Nariangarh and 1no. circuit between 220kV Civil Line ASR - Nariangarh, D/c line with 12.5 Km 0.4Sq"				
7	17	220KV S/S Goraya (Addl. 220/66KV 100MVA T/F for N-1 compliance)	Connectivity of 220KV Noor mehel with 220KV Goraya with D/C line (length - 25km, 0.4Sq") (LILO of both circuits of BBMB Jalandhar-Jamalpur line at Goraya subject to approval of Power Sub-committee of BBMB)	10.47	26.16	15.70	52.33
8	18	400KV Wadala Granthian	<p>Stage 1: Creation of 400kV Wadala Granthian with 2x500MVA, 400/220kV ICTs (2no. 400 kV line bays, 2no. 400 kV ICT bays, 2 no. 400 kV Tie Bays, 4 no. 220 kV Line bays, 4 no. 220 kV bus interconnection bay, 2 no. 220 kV ICT bays, 1 no. 220 kV TBC bay, 1 no. 220 kV BC bay)</p> <p>LILO of 1 circuit of 400 kV Moga - Kishanpur line (20km, Quad Moose)</p> <p>Stage 2: Addl. 1X500 MVA, 400/220 kV ICT (2 line bays, 1 ICT bays & 2 no. Tie Bays)</p> <p>LILO of 2nd circuit of 400 kV Moga - Kishanpur line</p>	0.00	90.21	90.21	180.42

S.No.	Sr. No.(as per CIP submitted)	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Capex requirement for 3rd CP
			(20km, Quad moose)				
9	29	220 kV Hoshiarpur	2nd source connectivity to Hoshiarpur via D/C on D/C line 220 kV Dasuya-Hoshiarpur (40 km, 0.4 sq") & using existing MCKT Towers	12.57	18.86	31.43	62.86
10	34	220 kV D/C link between 220 kV S/S Butari and 400 kV S/S Wadala Granthian	220 kV D/C Link between 220 kV S/S Butari and 400 kV S/S Wadala Granthian, (35 km, 0.4 Sq" conductor)	0.00	13.20	26.41	39.61
11	35	Upgradation of 66 kV Ajnala to 220 kV level	Creation of 220 kV Ajnala with 1X160MVA + 1X100 MVA, 220/66 kV T/Fs (2 line bays, 2 T/F bays & 1no. Bus Coupler Bay) LILO of S/C line 220 kV FatehgarhChurian - 220 kV Civil Lines Amritsar (LILO length 18 km, 0.4Sq")	5.79	11.58	17.37	34.74

S.No.	Sr. No.(as per CIP submitted)	Substation Name	Scope of work	FY 2023-24	FY 2024-25	FY 2025-26	Capex requirement for 3rd CP
12	36	Upgradation of 66 kV Bhagta Bhai ka to 220 kV level	Creation of 220kV Bhagta Bhai Ka with 1X160MVA + 1X100MVA, 220/66kV T/Fs (4 line bays, 2 T/F bays & 1no. Bus Coupler Bay) LILO of both circuits of 220 kV Himmatpura - GHTP Line (Line length 24 km, 0.4Sq")	7.02	14.03	21.05	42.10
Total				257.64	554.34	493.05	1305.03

Annexure 5 – Capital Investment Plan of SLDC Business submitted by PSTCL.

Sr No. as per CIP Order	Particulars	Scope of Work	FY 2023-24	FY 2024-25	FY 2025-26	Total
1	Scheme for providing 45 Nos Remote Terminal Units for SCADA/EMS system at 220 & 132 KV Substations of PSTCL in Punjab (Spill over from 1st MYT)	Supply and Installation of 45 nos. RTUs.	0.08	0.00	0.00	0.08
2	Centralised AC system, Furniture & Fixtures (including office ACs)(Spill over from 1st MYT)	Centralised AC system, Furniture & Fixtures (including office ACs)	0.70	0.40	0.00	1.10
Total (A)			0.78	0.40	0.00	1.18
(B) : Spill Over Works of 2nd MYT Control Period (From FY 2020-23)						
4	Implementation of SAMAST scheme in Punjab (Procurement of meters, communication equipments and Hardware and software for Scheduling, Accounting, Metering and settlement of transaction of Electricity)(Spill over from 2nd MYT)	Implementation of SAMAST scheme in Punjab.	4.00	0.00	0.00	4.00
5	Procurement/ Replacement of RTUs for various substations of PSTCL (66 nos. RTUs) (Spill over from 2nd MYT)	Out of 66 No, 45 No. RTU have been procured out of which 44 nos. have been installed. Fresh tender enquiry shall be floated for remaining 21 nos. RTUs + 9 nos. more RTUs against future/damaged/outlived RTUs.	2.50	0.23	0.00	2.73

Sr No. as per CIP Order	Particulars	Scope of Work	FY 2023-24	FY 2024-25	FY 2025-26	Total
6	Extension of SLDC Building (Spill over from 2nd MYT)	Extension of building Shall be required for equipment under ULDC Phase 3/New Parking Shed/UNMS(Unified Network Management System) project	0.50	1.00	0.43	1.93
Total (B)			7.00	1.23	0.43	8.66
Total C (A+B) (Cost of Spill Over Works)			7.78	1.63	0.43	9.84
New works for MYT 2023-26						
7	Purchase of equipment/software.as per instructions of central agencies like NLDC, NCIIPC, CERT-IN, for cyber security etc. or any other unforeseen SLDC related works.	Purchase of IT equipment/software.as per instructions of central agencies like NLDC, NCIIPC, CERT-IN, for cyber security etc. or any other unforeseen SLDC related works (i.e. for RTU, IT, SAMAST, etc.)	0.50	0.50	0.50	1.50
8	ULDC Phase III (Under Study)	Replacement of SCADA System. The proposal for this work is under review at center level. This work will be covered under capital works only in case proposal of execution through tariff mode is rejected.	As per MoP, this project is to be implemented by CTU (PGCIL), the modalities of which are under discussion stage.			
Total (D) (New Works Cost)			0.5	0.5	0.5	1.50
Total			8.28	2.13	0.93	11.34

Sr.No.	Sr No. as per CIP Order	Particulars	Network Addition	2023-24	2024-25	2025-26	Total
(A) Spill Over Works of 1st Control Period (FY 2017-18 to FY 2019-20)							
1	120	220 kV S/Stn Sherpur (Focal Point) (U/G from 66 kV grid with 220 kV side GIS and 66 kV side		48.08	0	0	48.08
2	121	LILO of both ckts of 220 kV S/Stn Jamalpur - 220 kV S/Stn Dhandari Kalan-1 line at 220 kV S/Stn Sherpur (Focal Point)(Amendment 25 2018-19)		3.01	0	0	3.01
3	123	220 kV S/StnBudhlada (U/G from 66 kV)		22.267	0	0	22.267
4	124	220 kV S/Stn Mansa - 220 kV S/Stn Budhlada DC Line		25.05	0	0	25.05
5	128	400 kV S/Stn Doraha (New at Village Dhanansu)	0	61.8755	0	0	61.8755
6	130	(i) 400 kV Bays (ii) 220 kV Bays at 400 kV S/Stn Doraha	0	11.9	14.28	0	26.18
7	132	400 kV Grid Dhanansu (near Doraha)	LILO of 220 kV Kohara-sahnewal (S/C) line at 400 kVDhanansu	0	0	0	0
			220 kV D/C line on D/Ctowers (1.837 km) line length (with Dhanansu-Sahnewal conductor of Moose, 0.5 sq" and Dhansu-Kohara conductor of HTLS of Moose equivalent)	2.265	0	0	2.265
			220 kV D/C line on Multi ckt towers (5.026km) line length up to LILO point of existing Kohara-Sahnewal line (approx 0.5 km from Kohara) (with Dhanansu-Sahnewal conductor of Moose, 0.5 sq" and Dhansu-Kohara conductor of HTLS of Moose equivalent)	14.01	0	0	14.01
			Replacement of existing conductor of Kohara upto LILO pointsection with HTLS conductor of Moose equivalent (0.557 km)	0.409	0	0	0.409
			220 kV D/C line on Multi ckt towers (only stringing for changing route of LILO of GGSSTP-Kohara line (0.5 sq") at Gaunsgarh, on M/ckt towers (5.026 km approx) line length (Moose 0.5 sq" cond)	2.94	0	0	2.94

8	133		220 kV D/C line on D/Ctowers (21.957 km approx.) line length/420 sq mm ACSR Zebra) (out of the total line length of 28.437 km, 6.811 km of already existing line shall be used)	29.41	0	0	29.41
9	134 (a)		LILO of 1 circuit of 220kV Jamalpur (BBMB)- Ganguwal line at 220 kV bus of 400 kV Dhanansu, approx, LILO length-8km (0.4 sq"), D/C on D/C towers. (New work)	10.37	0	0	10.37
10	135		220 kV Bays (2 Nos. atDoraha, 2Nos. at Kohara including double bus erection of 220 kV and 2 no. ICT bays at Dhanansu	14.28	0	0	14.28
11	136	LILO of 220 kV S/Stn Mansa - Sunam (SC) at 400 kV S/StnPatran (220 kV bus).	40 km (approx.) Line Length / 1xDC with 420sq mm ACSR (Zebra)	28.89	0	0	28.89
12 to 15	172-175	1. Aug/Strengthening of bus bars 2. Extension in Switchyard buildings, Provision for AC etc. 3. Provision for Reactive Compensation 4. Addition of bays/system strengthening required on account of RE generation	0	3.57	0	0	3.57
16	177	220 kV S/Stn Fazilka (U/G from 66 kV)	220 kV S/Stn Fazilka (U/G from 66 kV)	2.38	1.19	23.8	27.37
17	178		400 kV S/Stn Mukatsar - 220 kV S/Stn Fazilka 220 kV DC line	0	0	26.01	26.01
18	179		220 kV Bays	0	5.95	0	5.95
		Total (A)		280.7065	21.42	49.81	351.937
(B) Table No.13: Spill Over Works approved by the Board in FY 2019-20 outside the first MYT approval							
19	1a	132 kV Faridkot – Kotkapur-	30 Kms	11.12	0	0	11.12
20	1b	2 SC link (Amendment no.		2.023	0	0	2.023
21	2a	132 kV Sihora-132 kV Seh SC line	31 Kms	15.54	0	0	15.54
22	4	220 kV S/S Beas (new)	2x100 MVA 220/132 kV Auto T/F	12.138	24.99	15.232	52.36
			6x132kV line bays(Existing 3 and additional 3)	0	0	0	0
		132KV S/S system at Butari will be dismantled.	LILO of Butari – BBMBJalandhar at PGCIL Jalandhar 2.5Km 0.4Sq" and subsequently LILO of PGCIL Jalandhar- Butari at Beas 22.5Km 0.4Sq"	0	0	77.94	77.94

		Bypassing 132 Kv Beas line to Tangra & Dhilwan-Beas/Butari to Ekalgadda after LILO of Dhilwan-Butari at Beas (new)	Shifting of 132kV system from 220kV Butari (1 Km length) by LILO of 132 KV Dhilwan - Butari at Beas 1.5 KMs with some portion on Modern Techniques Total Length 2.5 Km	0	0	0	0
			2x132kV towers dismantlement & 3nos. Towers to be erected	0	0	0	0
			Conversion of 132kV Tarn taran -Butari-Ekalgadda T-off to LILO 15Km 0.2 Sq"	0	0	0	0
			132KV D/C Beas - Ekalgadda Line 30 Kms 0.2 Sq"	0	0	0	0
23	7	OPGW		57.76	0	0	57.76
24	10	220 kV Dhandari		11.9	0	0	11.9
25	11	Kalan - 2		1.19	0	0	1.19
26	12			4.23	0	0	4.23
		Total (B)		115.901	24.99	93.172	234.063
(C) Table No.17: Spill over of New Works planned for the 2nd Cotnrol Period from FY 2020-21 to 2022-23							
27	1	400 kV S/s Ropar New Grid		0	0	0	0
28	2	(in the premises of		35.7	0	0	35.7
29	3	GGSSSTP)		23.8	41.95	0	65.75
30	4			10.234	1.666	0	11.9
31	5			7.854	0	0	7.854
32	6		LILO of one ckt of 400 kV Ludhina PGCIL–Koldam at proposed 400 kV S/s Ropar, LILO Length = 15 km (approx.), Triple Conductor (Snowbird)	30.445	0	0	30.445
33	7		LILO of 2nd ckt of 400 kV Ludhina PGCIL–Koldam at proposed 400 kV S/s Ropar, LILO Length = 15 km (approx.), Triple Conductor (Snowbird)	0	27.88	0	27.88
34	8			8.925	0	0	8.925
35	9	400 kV Dhanansu(already planned) its additional 400 kV link required	LILO of 2nd ckt of 400 kV Jallandhar–Kurukshetra D/c line at Dhanansu. (Quad Moose), LILO length = 5 km (approx.)	2.37	0	0	2.37
36	10		400 kV bays 2 no.	0	3.57	0	3.57
37	12 (A)	220 KV Banga		11.9	0	0	11.9
38	14	220kV G.T. Road Ludhiana		0	0	0	0
39	15	(New GIS) or (in Ludhiana area)Includind SAS for RS 1cr.	LILO of 220 kV Ladawal - Gaunsgarh (DC) lines both ckts. at 220 kV G.T. Road Ludhiana. LILO Length = 7KM (appx.), conductor size 0.4sq" (2xDC lines).	0.238	0	0	0.238
40	16			0	0	0	0
41	17			0	0	0	0
42	18	220 kV Gobindgarh S/s		9.52	4.76	36.89	51.17

43	19	(New Grid in the near by area of existing 220 kV S/s Gobindgarh-I). Including SAS for RS 1cr. (Pharmaceuticals Wazirabad new)	LILO of 220 kV Gobindgarh-I - Bassi Pathana at 220 kV Gobindgarh, LILO length appx. 1 KM (DC on DC) with 0.4sq" conductor.	0	2.8	0	2.8
44	20		LILO of 220 kV GGSSTP - Gobindgarh-I at 220 kV Gobindgarh (new), LILO length 1 KM (appx.) 0.4sq" conductor, DC on DC.	0	2.8	0	2.8
45	21			0	0	0	0
46	22			0	0	0	0
47	23	220 kV Nawanpind (new grid in the premises of 66 kV S/s Nawanpind)Including SAS for RS 1cr. Amedment No. 17/21-22		11.9	20.23	0	32.13
48	24		LILO of 220 kV Verpal – Wadalagrathian and Verpal-Udhoke lines at proposed DC line at proposed 20 kV S/s Nawanpind. 2xDC, conductor size 0.4sq", LILO length 1 KM.	0	4.07	0	4.07
49	27	Additional link	Stringing of IIInd ckt. Of 220kV Mukatsar-Ghubaya line,conductor size 0.4sq", Line length 40.3 KM	0	7.72	0	7.72
50	29	Augmentation/additions of transformers at 220/132 kV level.	(L.S. provision)	11.93213	11.9	0	23.8321
51	30	New 220 kV Giaspura including SAS of RS 1 cr.	0	0.238	0	0	0.238
52	31	New 220 kV Jhoke HariHar (New)		14.28	8.33	7.14	29.75
53	32	220 kV Gurdaspur including SAS of RS 1 cr	LILO of one ckt of 220 kV wadalagrathian-sarna line DC on DC 2xDC, conductor size 0.4sq", LILO length 5 km(approx)	7.53	0	0	7.53
54	33			24.99	0	0	24.99
55	36	220 KV Dhaleke (GIS) including SAS of Rs. 1 Cr.	132 kVMoga I - Dhaleke DC link arrangement by making use of existing network,conductor Size 0.2sq", LILO length 7km(approx)	0	0	2.45	2.45
56	39	i) 220 kV Singhawala	0	19.4565	0	0	19.4565
57	45	vii) 220 kV Khassa	0	2.38	0	0	2.38
58	46	viii) 220 kV Algon	0	2.38	0	0	2.38
59	54	xvi) 220 kV Himmatpura	0	2.38	0	0	2.38
60	60	xxii) 132kV Ferozshah	0	2.38	0	0	2.38
61	61	xxiii) 132kV Manasingh Wala	0	2.38	0	0	2.38
62	62	xxiv) 132kV Jallalabad		2.38	0	0	2.38
63	63	xxvi) 132kV Kathunangal	0	2.38	0	0	2.38
64	69	Augmentation of bus bars, extension in control room building, providing room for second source for station battery etc.	0	10.71	1.19	0	11.9

65	70	Additional 220/132/66 kV line bays related with feasibility cases or as per PSPCL requirement.	0	13.685	0.595	0	14.28
66	71	Second source of battery at various 220/132 kV S/s of PSTCL	0	6.545	1.19	0	7.735
67	72	90 nos PSTCL grids (220 kV) to be provided with SAS. Report already sent for PSDF funding if approved, these stations will be upgraded.	0	23.8	47.6	35.7	107.1
68	74	Replacement of existing conductor of 220 kV Gobindgarh - 400kV Rajpura (DC) with HTLS of suitable capacity.	Revised	32.2	0	0	32.2
69	75	Additional of 14 No T/f on account of making (N-1) complaint system for those grids where only one T/f existing (Annexure-C).		30.345	24.395	0	54.74
70	77	132 kV works Bilaspur		2.4276	0	0	2.4276
71	78	132 kV Nawanshahar.	0	3.213	0	0	3.213
72	87	Augmentation of 132 kV GGSSTP - Asron) 6 KM 0.2sq") and 132 kV GGSSTP - Ropar (19.76 KM) 0.2sq".	Replacement of existing conductor of line with suitable HTLS conductor (on same towers) having a capacity of at least 800A.	0	18.96	0	18.96
73	88	CE/ P&M Agenda No. 145/2017-18 dtd 20.09.17. Best Practices recommended by Protection Sub Committee of NRPC in operation & construction of Sub Stations		5.95	5.95	0	11.9
74	91	OPGW link between SKPP-RSD- 220 kV Sarna & SKPP 220 kV Sarna		0	0	8	8
		Total (C)		376.85	237.56	90.18	704.58
		Total Spill Over (A+B+C)=D		773.46	283.97	233.16	1290.58
(E) Spill Over of works approved outside 2nd MYT 2020-23 by Petition/BOD approval							
1	Amendment No. 21/2020-21	400 kv S/S Nakodar	Replacement of 1x315 MVA, 400/220 KV ICT with 1x500 MVA, 400/220 KV ICT	14.28	0	0	14.28
			Cost of dismantlement of 1x315 MVA, 400/220 KV ICT at 400 KV Nakodar	0	0	0	0
			Construction of 1 No. ICT bay and 1 No. 220 kV bay at 400 kV Nakodar with interlinking link of 220 kV	7.497	0	0	7.497
			Replacement of 2nd 315 MVA, 400/220 KV ICT with 2nd 500 MVA, 400/220 KV ICT	18.088	0	0	18.088

			Cost of dismantlement of 2nd 315 MVA, 400/220 KV ICT at 400 KV Nakodar	0.833	0	0	0.833
2	Amendments No.08/2021-22	220K S/S Baghapurana	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	6.188	7.14	0	13.328
		220KV S/S Jhunir	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Talwandi Sabo	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Sandhwan	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Katorewala	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Kotkaror	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Bottian Wala	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Himmatpura	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Abohar	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Dharamkot	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Rehana Jattan	1 No. bus coupler between 220 bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Katorewala	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Bottian Wala	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Talwandi Sabo	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Mansa	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Himmatpura	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Jagraon	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.238	0	0.119	0.357
		220KV S/S Mastewala	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.238	0.01	0	0.248
		220KV S/S Lalton Kalan	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Dharamkot	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.238	0	0	0.238
220KV S/S Mandi Gobindgarh G-1	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.238	0	0	0.238		
220KV S/S Chajji	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.238	0	0	0.238		

		220KV S/S Dhuri	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Mehal Kalan	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.238	0	0	0.238
		220KV S/S Badshahpur	1 No. bus coupler between 66 kV bus bar-1 & bus-bar-2	0.238	0	0	0.238
		132KV S/S Moga -2 (Dhalleke)	1 No. bus coupler between 16/20 MVA 132/11 kV T-1 & 20 MVA 132/11 kV T-2	0.238	0	0	0.238
		132KV S/S Samadh Bhai	1 No. bus coupler between 20 MVA 132/11 kV T-1 & 16/20 MVA 132/11 kV	0.238	0	0	0.238
		220 kV S/S Katorewala	1 No. bus coupler between 20 MVA 66/11 kV T-2 & 10/12.5 MVA 66/11 kV T-4	0.238	0	0	0.238
		220 kV S/S Passiana	1 No. 11 kV bus coupler	0.238	0	0	0.238
		220 kV S/S Majitha	1 No. 11 kV bus coupler	0.238	0	0	0.238
3	Amendments No.18/2021-22	Upgradation of 66 kV substation Old Patiala to 220 kV substation.	2X100 MVA, 220/66 kV T/F With 2 No. 220 kV line bays, 2 No. T/f bays and 1No. Bus coupler bay	2.38	3.57	32.13	38.08
			LILO of one Ckt. of 220 kV Bahadurgarh-Devigarh line (DC on DC 19 km Zebra conductor 420 mm ²)	0	17.86	0	17.86
4	Amendments No.19/2021-22	400 KV S/stn. Dhanansu.	1x500 MVA, additional 400/220 kV ICT at 400 kV Dhanasu along with 400 kV ICT Bay, 2 nos. 400 KV line Bays, 2 nos. 400 kv Tie Bays, 400 kv Future Bay, 220 kv ICT Bay	17.85	27.37	0	45.22
			LILO of 400 kv Nakodar-Kurukshetra line at 400 Kv Dhanansu with Quad Moose Conductor	0	22.98	0	22.98
5	Amendment No. 15/2021-22	Evacuation sysytem of Shahpur Kandi Hydrel Project	220 kV RSD to 220 kV Shahpur Kandi PH-I (SC on DC, 0.5 sq.in, line length 16 km, LILO length 0.5 km approx)	0	14	0	14
			220 kV Shahpur Kandi PH-II to 220 kV Sarna (SC on DC, HTLS of 1200 A capacity, line length 18 km approx)	0	14	0	14
6	Amendments No.23/2021-22	220kV S/S Jhordan (New) including Substation Automation System SAS of 1 cr.	2x100MVA, 220/66kV T/F with 2 no. 220kV line bays and 1 no. Bus coupler bay including SAS and Civil works.	0	42.84	0	42.84

			LILO of one ckt. Of 220kV Pakhowal Mehal Kalan transmission line (9km Zebra conductor 420 mm ²) at 220kV Jhordan (New).	0	16.05	0	16.05
			4 nos 66kV line bays.	0	0	0	0
7	Amendments No.24/2021-22.	400 kV S/S Behman Jassa Singh.	2x500 MVA, additional 400/220 kV ICT at 400 kV Behman Jassa Singh along with 2 no. 400 kV ICT Bays, 2 nos. 400 KV line Bays, 2 nos. 400 kv Tie Bays, 400 kv Future Bay, 2 no.220 kv ICT Bays, 220 KV Bus coupler bay, 220 KV Transfer bus coupler bay, 8 nos 220 kv line bays.	0	9.52	126.14	135.66
			LILO of 400 kv Talwandi Sabo-Nakodar line at 400 Kv Behman Jassa Singh(line length-16 km , Twin Moose conductor (Work and review)	90	60	0	150
			220 KV D/C line (with OPGW) from 400 KV Behman Jassa Singh to 220kV Talwandi Sabo (Line length - 8km, 0.4 sq")	0	0	0	0
			LILO of 220 KV Mansa-Talwandi Sabo at 220 KV Maur (Line length -9km, 0.4 sq")	0	0	0	0
			LILO of both circuits of HPCL Mittal -220 KV Mansa at 220 KV bus of 400 KV Behman Jassa Singh(3x2 KM DC on DC , 0.4sq")	0	0	0	0
			220 KV D/C line on D/C towers from 400 kv Behman Jassa Singh to GNDTP Bathinda with multi circuit towers in GNDTP premises (Line length -35km , 0.4 sq")	0	0	0	0
			6 nos 220 kv bays 2 each at 220 kv Talwandi sabo, Maur & GNDTP.	0	5.95	0	5.95
8	Amendments No.25/2021-22	220 kV S/S Kharar.	Augmentation of 1 No. 100 MVA T/F at 220kV S/S Kharar to 160 MVA.	12.138	0	0	12.138
9	Amendments No.26/2021-22	220 kV Line Verpal-Patti	Shifting of 220 kV S/C Patti-Verpal line from 220 kV Verpal to 400 kV Amritsar (3km,0.4 sq")	3.34	0	0	3.34

10	Amendments No.27/2021-22	220 kV S/S Mohali-2.	220 kV 2 No. Bays	2.38	0.595	0	2.975
11	Amendments No.28/2021-22	220 kV S/S Wadala Granthian.	Additional 3rd 220/132 kV, 100 MVA Auto T/f	12.257	0	0	12.257
12	Amendments No.29/2021-22	Installation of capacitor banks at Various S/Stns.		7.5565	0	0	7.5565
		220K S/S Doraha	4X10.860 MVAR, 66 KV Capacitor Bank at 220K S/S Doraha	0	0	0	0
		220KV S/S Sandhwan	2X10.860 MVAR, 66 KV Capacitor Bank	0.01	0	0	0.01
		220KV S/S Dharamkot	2X10.860 MVAR, 66 KV Capacitor Bank	0.0119	0	0	0.0119
		220KV S/S Banur	2X10.860 MVAR, 66 KV Capacitor Bank	0.0119	0	0	0.0119
		220KV S/S Dasuya	2X10.860 MVAR, 66 KV Capacitor Bank	0.0119	0	0	0.0119
		220KV S/S Tibber	2X10.860 MVAR, 66 KV Capacitor Bank	0.0119	0	0	0.0119
		220KV S/S Chogwan	2X10.860 MVAR, 66 KV Capacitor Bank	0.0119	0	0	0.0119
		220KV S/S Chola Sahib	2X10.860 MVAR, 66 KV Capacitor Bank	0.0119	0	0	0.0119
		220KV S/S Banga	2X10.860 MVAR, 132 KV Capacitor Bank	0.0119	0	0	0.0119
		220KV S/S Butari	2X10.860 MVAR, 132 KV Capacitor Bank	0.0119	0	0	0.0119
		220KV S/S Hoshiarpur	6X10.860 MVAR, 66 KV Capacitor Bank	0.0119	0	0	0.0119
		220 kV S/S Kotla Janga	3X10.860 MVAR, 132KV Capacitor Bank	0.0119	0	0	0.0119
13	Amendment No. 01/2022-23	220 kV Mubarikpur (U/G from 66 kV substation Mubarikpur)	U/G of 66 kV Mubarikpur to 220 kV with installation of 2X160 MVA, 220/66 kV transformer (including 2 Nos. line bays, 2 No. T/F bays and 1 No. B/C bay)	0	38.08	0	38.08
			a. LILO of 220 kV Mohali-2 – Derabassi line at 220 kV Mubarikpur (U/G from 66 kV) (LILO Length: 3.5 km approx., 0.4", D/C on D/C)	2.22	0	0	2.22
			b. Substation Automation System (SAS) for Rs. 1 Crore.	1.19	0	0	1.19
14	Amendment No. 02/2022-23	220K S/S Banur	Augmentation of 1 no. 100 MVA Transformer at 220 kV Sub-station Banur to 160 MVA	12.138	0	0	12.138
15	Amend 04/22-23	400 KV PGCIL, Amritsar	Shifting of 220kV S/C Rashiana-Verpal line from 220kV Verpal to 400kV Amritsar (3 K.M., 0.4sq").	0.48	0	0	0.48
16	Amend 06/22-23	220K S/S MGG-1	Augmentation of 2 no. 100 MVA Transformer at 220 kV Sub-station MGG-1 to 160 MVA	12.138	0	0	12.138

17	Amend 07/22-23	220K S/S Chitti (U/G from 66 KV)	Creation of 220 KV Chitti with 1 x 160 MVA T/F (fed from LILO of 220 KV SC line, (2 line bays, 1 T/F bay and 1 B/C bay).	0	39.27	0	39.27
			LILO of one ckt. of 400 kV Nakodar – Kartarpur D/C line at 220 kV Chitti (LILO length – 2.5 km, 0.4sq")	3.47	0	0	3.47
18	Amendmen tno. 8/22-23	132 KV Nakodar	1 No. 3rd Additional 20 MVA, 132/11 kV T/F	2.618	0	0	2.618
		220 KV S/S Banga	1 No. 3rd Additional 20 MVA 132/11 kVT/F	2.618	0	0	2.618
		220 KV Goraya	1 No. 3rd Additional 20 MVA 132/11 kVT/F	2.618	0	0	2.618
		220 KV Singhawala (Moga)	1 No. 20 MVA 66/11 KV T/f	2.618	0	0	2.618
		132 Moga- 2 (Dhalleke)	1 No. 3rd Additional 20 MVA 132/11 kVT/F	2.618	0	0	2.618
		132 KV Moga-I	1 No. 3rd Additional 20 MVA 132/11 kVT/F	2.618	0	0	2.618
		220 KV Gounsgarh	1 No. 4th Additional 20 MVA 66/11 kVT/F	2.38	0	0	2.38
		220 KV Bassi Pathana	1 No. 3rd Additional 20 MVA 66/11 kVT/F	2.38	0	0	2.38
		220 KV Humbran	1 No. 3rd Additional 20 MVA 66/11 kVT/F	2.38	0	0	2.38
		220 KV Ajitwal	1 No. 3rd Addl. 66/11 KV 12.5 MVA T/F (spare T/f from system to be used).	1.428	0	0	1.428
		220 KV Ghubaya	Aug. of 1 no. 20 MVA with 31.5 MVA, 66/11 KV	3.57	0	0	3.57
		220 KV Amloh	1 No. 4th Additional 20 MVA 66/11 kVT/F	2.737	0	0	2.737
		220 KV Saidpura (Dera Bassi)	Aug. of 1 no. 20 MVA with 31.5 MVA, 66/11 KV	3.57	0	0	3.57
		220 KV Kharar	1 No. 4th Additional 20 MVA 66/11 kVT/F	2.38	0	0	2.38
		220 KV Chogawan	1 No. 3rd Additional 20 MVA 66/11 kVT/F	2.618	0	0	2.618
		220 kV Kohara	Aug. of 1 no. 20 MVA with 31.5 MVA, 66/11 KV {Additional 12.5 MVA, 66/11 kV T/f planned in MYT2020-23 Sr. No. 55 may be considered as deleted }	3.57	0	0	3.57
220 KV Civil Lines Amritsar	1 No. 3rd Addl. 66/11 KV 12.5 MVA T/F (spare T/f from system to be used).	1.428	0	0	1.428		
19	Amendment 16/22-23	Rearrangement of connectivity of Transmission lines in Patiala Circle to control the existing overloading of certain lines	a. Termination of 220 kV Rajpura - 400 kV Faggan Majra circuit at 220 kV Bahadurgarh	0.69	0	0	0.69
			b. Connecting 220 kV Devigarh to 220 kV Rajpura	0.515	0	0	0.515

		c. Connecting 400 kV Rajpura to 220 kV Rajpura (including new link of approx. 5 km length, D/C on D/C)	7.3	0	0	7.3
		d. Connecting 400 KV Rajpura to 220 kV Mohali-1 (one circuit direct and one circuit via 220 kV Banur, on D/C line, including new link of approx. 7km length, D/C on D/C)	10.22	0	0	10.22
		e. 2 Nos. 220 kV bays at 400 kV Rajpura	7.14	0	0	7.14
		f. 220 kV Side bus extension arrangement to be made at 400 kV Rajpura for providing suitable space for 2 Nos 220 kV Bays	0.119	0	0	0.119
		Total (E)	303.5875	319.235	158.389	781.212
		Total= D+E=F	1077.0432	603.201	391.551	2071.79

capitalization for New Schemes for the 3rd control period - Transmission

Annexure-6

Sr. No.	Substation Name	Scope of work	2023-24	2024-25	2025-26	Total
(A) TS Works						
1	220 kV S/S GNDTP	Additional 160 MVA, 220/66 kV transformer including 66kV busbar extension (2x50MVA 132/66KV will be spared)	14.709828	0	0	14.709828
2	Upgradation of 66 kV Bhalaiana to 220 kV sub-station.	Creation of 220kV Bhalaiana with 2x100MVA, 220/66kV T/F (2 line bays, 2 T/F bays & 1no. Bus Coupler bay)	0	0	0	0
		LILO of S/C 220 kV Muktsar – 220 kV Malout line (LILO length 1km, 0.4Sq").	0	0	0	0
3	Upgradation of 66 kV Guru Har Sahai to 220 kV sub-station	Creation of 220kV Guru Har-sahai with 2x100MVA , 220/66kV T/F (4 line bays at Guru Har Sahai, 2bays each at Ghubaya & Jhoke Hari Har, 2 T/F bays & 1no. bus coupler bay)	0	0	0	0
		D/C line from 220 kV Ghubaya and D/C line from 220 kV Jhoke Hari Har (Line length (35km & 30km, 0.4Sq").	0	0	0	0
4	Upgradation of 132 kV Samadh Bhai to 220 kV level	Creation of 220kV Samadh Bhai with 1x100MVA , 220/132kV T/F (4 line bays, 1 T/F bay & 1no. Bus Coupler Bay)	0	0	40.1744	40.1744
		LILO of both circuits of 220 kV Baghapurana – Bajakhana line (LILO Length - 8km, 0.4Sq").	0	0	0	0
5	Upgradation of 66 kV Chaherhu to 220 kV level (2nd 100MVA, 220/66kV T/F for N-1)	Creation of 220kV Chaheru with 2x100MVA , 220/66kV T/F (4 line bays, 2 T/F bays & 1no. Bus coupler bay)	0	0	0	0

		LILO of 400 kV Nakodar – 220 kV Hoshiarpur and Nakodar - Rehana Jattan 220 kV Ckts at Proposed 220 kV S/S Chaheru (LILo Length - 6km + 6km, 0.4 Sq")	0	0	0	0
6	Upgradation of 66 kV Gill Road Ludhiana to 220 kV level (Under Study)	Creation of 220kV Gill Road Ludhiana with 2X160MVA 220/66KV T/F (4 line bays (2 at Proposed Gill road and 2 at Ferozepur road), 2 T/F bays & 1no. bus coupler bay)	0.238	0	0	0.238
		D/C line (6km, 0.4Sq") from 220 kV Ferozepur Road Ludhiana on multi circuit towers/modern techniques.	0	0	0	0
7	Upgradation of 66 kV Bija/Chawa to 220 kV level	Creation of 220kV Bija/Chawa with 2x100MVA, 220/66kV T/F (2 nos. line bays, 2 T/F bays & 1no. Bus Coupler bay)	0	0	0	0
		LILo of one circuit of upcoming Dhanasu - Doraha 220 KV line at Bija (12km, 0.4Sq")	0	0	0	0
8	Upgradation of 66 kV Bhadson to 220 kV level.	Creation of 220kV Bhadson with 2x100MVA, 220/66kV T/F (6 line bays (2 at Amloh and 4 at Bhadson), 2 T/F bays & 1no. Bus Coupler Bay)	0	0	76.7431	76.7431
		D/C line from 400 kV PGCIL Patiala (16km, 0.4Sq") and D/C line from 220 kV Amloh (12km, 0.4Sq").	0	0	0	0
9	Upgradation of 66 kV Chourwala to 220 kV level	Creation of 220kV Chourwala with 2x160MVA, 220/66kV T/F (4 line bays, 2 T/F bays & 1no. Bus Coupler Bay)	0	0	68.0442	68.0442

		LILO of both circuits of 400 kV Rajpura – 220 kV Gobindgarh-1 line (HTLS) (8 km, 0.4Sq" HTLS equivalent)	0	0	0	0
10	Upgradation of 66 kV Toot to 220 kV level.	Creation of 220kV Toot with 2x100MVA, 220/66kV T/F (2 line bays, 2 T/F bay & 1no. Bus Coupler Bay)	0	0	0	0
		LILO of one circuit of 400 kV Makhu – 220 kV Algon line at Proposed 220KV s/s Toot (7km, 0.4Sq")	0	0	0	0
11	Double bus arrangement at 220 kV Mandi Gobindgarh – 2		0	0	16.66	16.66
12	Upgradation of 132 kV Jandiala Guru to 220 kV level	Creation of 220kV Jandiala Guru with 2x100MVA, 220/132kV T/F (2 line bays, 2 T/F bays & 1no. Bus Coupler Bay)	0	0	41.7928	41.7928
		LILO of 220 kV Butari – Verpal circuit on multi-circuit Tower/Modern techniques at Jandiala Guru (4km, 0.4Sq")	0	0	0	0
13	Upgradation of 132 kV Tanda to 220 kV level	Creation of 220kV Tanda with 1x100MVA, 220/132kV T/F and 1x100MVA, 220/66KV T/F (2 line bays, 2 T/F bays & 1no. Bus Coupler Bay)	0	0	43.6849	43.6849
		LILO of S/C 220 kV BBMB Jalandhar-Dasuya line (4.5Km, 0.4Sq")	0	0	0	0
14	Upgradation of 132 kV Sri Hargobindpur to 220 kV level (1X100 MVA 220/132 kV + 1x100 220/66 kV - already planned 3rd 220/132 kV Auto transformer at Wadala Granthian be dropped) (132 kV line from WG and 132/66 KV TFs will be spared)	Creation of 220kV Sri Hargobindpur with 1x100MVA, 220/132kV & 1x100MVA, 220/66kV T/Fs (2 line bays, 2 T/F bays & 1no. Bus Coupler Bay)	0	0	0	0
		220 KV D/C Line From Proposed 400 KV S/S Wadala Granthian (28km, 0.4Sq")	0	0	0	0

15	Re-arrangement to provide 2nd connectivity to 220 kV S/s Naraingarh	Double circuit from 220kV Khassa-Chogawan, 12 Km, 0.4 Sq"	10.81472	16.2221	27.0368	54.0736
		Disconnecting 220kV Khassa -Civil Line ASR circuit and Chogawan- Khassa circuits from Khassa and diverting them to Naraingarh	0	0	0	0
		1 no. circuit between 220kV Chogawan - Nariingarh and 1no. circuit between 220kV Civil Line ASR - Nariingarh, D/c line with 12.5 Km 0.4Sq"	0	0	0	0
16	220 kV S/S Bajakhana	Double bus arrangement at Bajakhana	0	19.635	0	19.635
17	220KV S/S Goraya (Addl. 220/66KV 100MVA T/F for N-1 compliance)	Connectivity of 220KV Noormehal with 220KV Goraya with D/C line (length - 25km, 0.4Sq") (LILO of both circuits of BBMB Jalandhar-Jamalpur line at Goraya subject to approval of Power Sub-committee of BBMB)	0	0	52.3279	52.32787
18	400KV Wadala Granthian	Stage 1: Creation of 400kV Wadala Granthian with 2x500MVA, 400/220kV ICTs (2no. 400 kV line bays, 2no. 400 kV ICT bays, 2 no. 400 kV Tie Bays, 4 no. 220 kV Line bays, 4 no. 220 kV bus interconnection bay, 2 no. 220 kV ICT bays, 1 no. 220 kV TBC bay, 1 no. 220 kV BC bay) LILO of 1 circuit of 400 kV Moga - Kishanpur line (20km, Quad Moose)	0	0	0	0

		Stage 2: Addl. 1X500 MVA, 400/220 kV ICT (2 line bays, 1 ICT bays & 2 no. Tie Bays) LILO of 2nd circuit of 400 kV Moga - Kishanpur line (20km, Quad moose)	0	0	0	0
19	400 kV Makhu	To give second ISTS connectivity	0	0	0	0
20	220 kV Sultanpur	LILO of one circuit 220 kV Kanjli- Science city at 220 kV Sultanpur with Moose conductor (28Kms, 0.5 Sq")	0	0	48.314	48.314
21	To provide second source to 220 kV S/S Badhni Kalan		0	0	0	0
22	220 kV Jadla	LILO of MISS Ganguwal- Dhanansu at Jadla (2 km, 0.4")	0	0	5.7715	5.7715
23	220KV PGCIL Panchkula (Barwala) - Derabassi Line	220KV PGCIL Panchkula (Barwala)- Derabassi Line (D/C) (14km, 0.4Sq")	0	0	26.4537	26.4537
24	Strengthening of Verka-Mall Mandi Link and to establish link with Civil Lines ASR	(A) Disconnecting 132 kV Verka - Mal Mandi link and 132 kV Verka - Jayantipura link.	0	0	0	0
		(B) Connecting 132 kV Mal Mandi with 132 kV Jayantipur.	19.7421	0	0	19.7421
		(C) Connecting 132 kV Civil lines ASR with 132 kV Verka. (overhead 15 km + 1 km modern techniques)	14.3752	0	0	14.3752
		(D) Connecting 132 kV Civil lines ASR with 132 kV Mal Mandi. (overhead 26 km + 1 km underground)	0	31.9991	0	31.9991
25	Requirement of Capacitor bank at various S/Stns as per CPRI report.	Under study as per CPRI report	0	0	0	0
26	400 kV Rajpura	4th 500 MVA additional T/F	0	38.08	0	38.08

27	To curtail overloading during N-1 conditions of Shanan-Kangra- Pathankot corridor	Under Study	0	0	0	0
28	S/C on D/C line from 400 kV Dhuri to 220 kV Bhawanigarh. Bay available at 400 kV Dhuri (18 km)		0	0	23.8833	23.8833
29	220 kV Hoshiarpur	2nd source connectivity to Hoshiarpur via D/C on D/C line 220 kV Dasuya-Hoshiarpur (40 km, 0.4 sq") & using existing MCKt Towers	0	0	62.8558	62.8558
30	220 kV Banga (Nawanshehar)	Replacement of 2x50MVA 132/66 kV transformers with 2x100MVA 220/66 kV transformers	0	10.8469	10.8469	21.6937
31	220 kV S/S Chajjli	Augmenattion of 66 kV single bus bar from double conductor to quadruple conductor	0.595	0	0	0.595
32	400KV Dhuri to 400KV Patran	To increase ISTS point of drawl for ATC/TTC and injection of nuclear Power from Fatehabad via TBCB Patran	0	0	0	0
33	Double bus bar arrangement at 220 kV Butari	Making 220 kV Bus of Butari as double and shifting of 220/132 kV T/F of Butari to 220 kV Jandiala	0	2.142	0	2.142
34	220 kV D/C link between 220 kV S/S Butari and 400 kV S/S Wadala Granthian	220 kV D/C Link between 220 kV S/S Butari and 400 kV S/S Wadala Granthian, (35 km, 0.4 Sq" conductor)	0	0	0	0
35	Upgradation of 66 kV Ajnala to 220 kV level	Creation of 220 kV Ajnala with 1X160MVA + 1X100 MVA, 220/66 kV T/Fs (2 line bays, 2 T/F bays & 1no. Bus Coupler Bay)	0	0	0	0
		LILO of S/C line 220 kV Fatehgarh Churian - 220 kV Civil Lines Amritsar (LILo length 18 km, 0.4Sq")	0	0	0	0

36	Upgradation of 66 kV Bhagta Bhai ka to 220 kV level	Creation of 220kV Bhagta Bhai Ka with 1X160MVA + 1X100MVA, 220/66kV T/Fs (4 line bays, 2 T/F bays & 1no. Bus Coupler Bay)	0	0	0	0
		LILO of both circuits of 220 kV Himmatpura - GHTP Line (Line length 24 km, 0.4Sq")	0	0	0	0
37	Upgradation of 66 kV Aerocity to 220 kV level (GIS substation)	Under Study	0	0	0	0
38	Upgradation of 66 kV Kurali to 220 kV level	Under Study	0	0	0	0
39	Upgradation of 66 kV Bhabat to 220 kV level	Under Study	0	0	0	0
40	220 kV MGG-3	Aug. of 2x100 220/66 kV T/f with 2x160MVA 220/66 kV T/F	12.540339	0	12.5403	25.080678
41	220 kV Maur	Addl. 220/66 kV 100 MVA T/F	0	10.8477	0	10.847683
42	220 kV Kartarpur	Aug. of 100 MVA, 220/66 kV T/f to 160 MVA	0	12.5307	0	12.5307
43	220 kV S/S Jhoke harihar (Amend No. 11/2021-22)	1 No. Additional 220/66 kV 100 MVA T/F	0	0	10.8528	10.8528
44	220 kV Maur	Addl. 66/11 kV, 20 MVA T/F	0	3.57	0	3.57
45	220 kV Talwandi sabo	Aug. of 66/11 kV, 12.5 MVA T/f to 20 MVA	3.2487	0	0	3.2487
46	220 kV Bottianwala	Aug. of 66/11 kV, 12.5 MVA T/f to 20 MVA	0	0	3.2487	3.2487
47	220 kV Baghapurana	Aug. of 66/11 kV, 12.5 MVA T/f to 20 MVA	0	3.2487	0	3.2487
48	132 kV Bhogpur	Aug. of 132/11 kV, 12.5 MVA T/f to 20 MVA	0	3.094	0	3.094
49	132 kV Sosan	Addl 12.5 MVA, 132/11 V T/F with CR Extension	4.2245	0	0	4.2245
50	220 kV Devigarh	Addl 66/11 kV, 12.5 MVA T/F with CR Extension	3.57	0	0	3.57
51	132 kV Chamkaur Sahib	1 No. 12.5 MVA, 66/11 kV T/F with CR extension	3.57	0	0	3.57
52	132 kV Kotakpura-1	Aug. of 12.5 MVA, 132/11 kV T/f to 20 MVA, 66/11 kV T/F	0	3.1178	0	3.1178
53	220 kV Kotkaror	Addl. 66/11 kV, 12.5 MVA T/f including CR Extension	3.57	0	0	3.57
54	220 kV Badni Kalan	Addl. 66/11 kV, 20 MVA T/f including CR Extension	0	3.57	0	3.57

55	220 kV Barnala (Handiaya)	Addl. 10/12.5MVA, 66/11 kV T/F	0	3.57	0	3.57
56	220 kV Dhanaula	Addl. 10/12.5 MVA, 66/11 kV T/F with CR extension	0	3.57	0	3.57
57	220 kV Pakhowal	Aug. of 10/12.5 MVA, 66/11 kV with 20 MVA, 66/11 kV T/F	0	3.2487	0	3.2487
58	220 kV Hoshiarpur (Hoshiarpur-Chohal Loading)	To replace 12.5 MVA and 20 MVA, 132/11 kV T/fs with 2X20 MVA, 66/11 kV T/Fs	3.1178	0	3.1178	6.2356
59	132 kV Swadi Kalan	extension in Control room	0.357	0	0	0.357
60	220 kV Malerkotla	extension in Control room	0.357	0	0	0.357
61	3 No. Truck mounted hydraulic cranes i.e. Loader 05 Ton Capacity	Loaders are used for Loading/unloading of various equipment of transmission system, erection of various electrical substation equipment including Power transformers. The same vehicle may also be utilised as truck for shifting of material and T&P etc.	1.8088	0	0	1.8088
62	3 No. Filtration set 6000 LPH capacity with operating voltage of 415V (3 Phase)	The filtration sets are used for dehydration and filtration of transformer oil, required during erection of all Power transformers.	1.666	0	0	1.666
63	1 No. Vacuum drying Plant/ Oven For 100MVA P/T/Fs	The Vacuum Drying Plant is suitable for drying the active parts of transformers in an Autoclave by using the classical drying method.	4.76	0	0	4.76

64	220 kV S/S Sahnewal	To make 66 kV double bus bar arrangement (remaining part of existing 66 kV lines) needs to be shifted to newly erected/ to be erected 66 kV line bays. Due to involvement of shifting of 66 kV lines the expenditure needs to be revised.	0	1.666	0	1.666
65	400 kV Dhanasu	Sub-station Capacity enhancement	0	0	0	0
66	Replacement of Disc Insulators of 400 kV PSTCL lines with Polymer Insulators		2.38	4.76	4.76	11.9
67	Makhu, Rajpura, Mukatsar/ Behman Jassa Singh (Malkana), and Dhanansu	4nos. 400 kV, 125 MVAR Reactors	0	0	0	0
68	Miscellaneous	Augmentation of bus bars, extension in control room building, providing room for second source for station battery etc.	11.9	11.9	11.9	35.7
69	Miscellaneous	Augmentation/additions of T/fs at 220/132/66 kV S/Stns of PSTCL.	11.9	11.9	11.9	35.7
70	Miscellaneous	Additional 220/132/66 kV line bays related with feasibility cases or as per PSPCL/PSTCL Requirement	11.9	11.9	11.9	35.7
71	Miscellaneous	Unforeseen emergency works	11.9	11.9	11.9	35.7
Total (A)			153.24	223.32	626.71	1003.27
(B) HIS&D Works						
72	-	Procurement of Fork lifter for Jamsher Store and Procurement of Weighing Machine for PSTCL Stores	0.12	0	0	0.12
73	-	Procurement of IT related Hardware items, Software Licences, Cyber security related and unforeseen Capital expenditure	1	1	1	3
Total (B)			1.12	1	1	3.12

(C) P&M Works						
74	-	To provide/replace ACs in existing 220 KV & 400 KV S/S's	0.5	0.5	0.5	1.5
75	-	To provide man lifter cum working platform at new 400 KV S/Ss i.e Behman Jassa Singh, Dhanansu and Ropar	2.5	0	0	2.5
76	-	15 KV Insulation Tester for new 400 KV & 220 KV S/Ss (15 No.)	0.4	0.4	0.4	1.2
77	-	T&P for new upcoming S/Ss and existing S/Ss	0.2	0.2	0.2	0.6
78	-	T&P for new upcoming S/Ss and existing lines inc. new HTLS lines	0.2	0.2	0.2	0.6
79	-	Camera for testing porcelain disc insulators (One No.)	0.25	0	0	0.25
80	-	Tower footing resistance sets (5 Nos i.e one per circle)	0	0.15	0	0.15
81	-	High end Contact resistance meter (1 No.)	0.15	0	0	0.15
82	-	High end Earth tester cum soil resistivity measurement (1 No.)	0.2	0	0	0.2
83	-	Up-gradation of existing BDV Kits (2 Nos.) from OEM as per new IEC standards for ODTL	0.06	0	0	0.06
84	-	PCB (polychlorinated Biphenyl) test kit for oil as per new IEC standards	0.3	0	0	0.3
85	-	Up-grading of HPLC kit of ODTL from OEM to conduct additional oil tests of metal passivator and DBDS as per new IEC standards	0.15	0	0	0.15
86	-	Up-gradation of two existing omicron relay test kits for advanced distance relay testing functions	0.1	0	0	0.1

87	-	OTDR (1) for T&C Cell under Communication circle	0.28	0	0	0.28
88	-	Medium end Earth testers (25)	0	0	0.5	0.5
89	-	Low end thermo-vision cameras for TL gangs (5)	0	0	0.5	0.5
90	-	Cable fault locator	0	2	0	2
91	-	Cable analyser	0	0	4	4
92	-	Up-gradation of old ULDC fibre optic system (Comm.)	1.25	2	2	5.25
93	-	Remote Control Operation along with VMS of 400kV S/SS's Behman Jassa Singh, Dhanasu and Ropar	0	0	3	3
94	-	Up-gradation of server cum gateways of existing SAS equipped substations with IEC 60870-5-104 licenses	0.2	0	0	0.2
95	-	SAS software along with relevant licenses and associated hardware	0	0.6	0	0.6
96	-	For Cyber Security-intrusion detection system and hardware based firewall for SAS equipped S/Ss	0	6	0	6
97	-	Construction of safety walls between transformers in adjacent bays	2	2	2	6
98	-	Transformer diagnosis system with facility of all types of major tests in-built in one kit	0	0	0.45	0.45
Total (C)			8.74	14.05	13.75	36.54
Total [A+B+C]			163.11	238.37	641.46	1042.94

Capitalization for P&M Works for the 3rd Control Period

Annexure-6
(Rs. Crore)

Sr.No.	Sr No. as per CIP Order	Particulars	Network Addition	2023-24	2024-25	2025-26	Total
1	6	Tan Delta and Resistive kit for testing of Transformer oil	-	0.45	0	0	0.45
2	7	PT/CVT testing kit for ODTL	-	0.39	0	0	0.39
3	8	Remote Control operation of 400kV S/S's Muktsar, Nakodar and Makhu	-	1.76	0	0	1.76
4	10	Online partially discharge kit equipment for 400 kV ICT at 400kV S/s. (14 No.)	-	5.57	5.88	4.74	16.19
5	11	CRM- Contact Resistance measurement meter for maintenance gangs	-	1	0	0	1
6	18	Providing RCC Roads in 220kV S/S to facilitate movement of heavy vehicle loaded with equipment.	-	3.7	0	0	3.7
7	19	Providing PCC in the yard area in 220kV S/s	-	3.02	2	0	5.02
8	7 no. of Table 22	OPGW laid by PGCIL under package V on turnkey basis	-	1.83	2.13	2.04	6
Total				17.72	10.02	6.78	34.52

Summary

(Rs. Crores)

Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total
Spill Over Schemes	1077.04	603.20	391.55	2071.79
New Schemes	163.11	238.37	641.46	1042.94
New Schemes P&M	17.72	10.02	6.78	34.52
Total Transmission	1257.87	851.59	1039.79	3149.25

capitalization for 3rd Control Period SLDC Works

Annexure-7

	Sr No. as per CIP	Particulars	Scope of Work	2023-24	2024-25	2025-26	Total
Works which have been Completed or likely to be completed on or before 31.03.2023							
1	-	Procurement of 80 Nos Energy meters (Emergent Work Approved through Petition No 63/2021)	80 No. Interface Energy meters were procured in 2021-22 as emergent work for upcoming metering points/defective meters and for completion of SAS Project by P&M . This work approved by BOD and PSERC vide order dated 02.03.2022 against petition no 63/2021. Material has been received and is being installed on need basis.	0	0	0	0
Total (A)				0	0	0	0
(A) : Spill Over Works of 1st MYT Control Period (From FY 2017-20)							
1	1	Scheme for providing 45 Nos Remote Terminal Units for SCADA/EMS system at 220 & 132 KV Substations of PSTCL in Punjab (Spill over from 1st MYT)	Supply and Installation of 45 nos. RTUs.	1.271	0	0	1.271
2	2	Centralised AC system, Furniture & Fixtures (including office ACs)(Spill over from 1st MYT)	Centralised AC system, Furniture & Fixtures (including office ACs)	1	0.4	0	1.4
3	3	IT equipments including Server, computer, Displays, software etc. for SLDC, Web site and its offices. (Spill over from 1st MYT)	IT equipments including Server, computer, Displays, software etc. for SLDC, Web site and its offices.	0	0	0	0
Total (A)				2.271	0.4	0	2.671
(B) : Spill Over Works of 2nd MYT Control Period (From FY 2020-23)							
4	4	Implementation of SAMAST scheme in Punjab (Procurement of meters, communication equipments and Hardware and software for Scheduling, Accounting, Metering and settlement of transaction of Electricity)(Spill over from 2nd MYT)	Implementation of SAMAST scheme in Punjab.	22.52	0	0	22.52

5	5	Procurement/ Replacement of RTUs for various substations of PSTCL (66 nos. RTUs) (Spill over from 2nd MYT)	Out of 66 No, 45 No. RTU have been procured out of which 44 nos. have been installed. Fresh tender enquiry shall be floated for remaining 21 nos. RTUs + 9 nos. more RTUs against future/damaged/outlived RTUs.	0	3.085	0	3.085
6	6	Extension of SLDC Building (Spill over from 2nd MYT)	Extension of building Shall be required for equipment under ULDC Phase 3/New Parking Shed/UNMS(Unified Network Management System) project	0	1.5	0.43	1.93
Total (B)				22.52	4.585	0.43	27.535
Total C= (A+B) (Cost of Spill Over Works)				24.791	4.985	0.43	30.206
(D) New works for MYT 2023-26							
1		Purchase of equipment/software. as per instructions of central agencies like NLDC, NCIIPC, CERT-IN, for cyber security etc. or any other unforeseen SLDC related works.	Purchase of IT equipment/software.as per instructions of central agencies like NLDC, NCIIPC, CERT-IN, for cyber security etc. or any other unforeseen SLDC related works (i.e. for RTU, IT, SAMAST, etc.)	0	1	0.5	1.5
2		ULDC Phase III (Under Study)	Replacement of SCADA System. The proposal for this work is under review at center level. This work will be covered under capital works only in case proposal of execution through tariff mode is rejected.				
Total (D) (New Works Cost)				0	1	0.5	1.5
Grand Total (C) +(D)				24.791	5.985	0.93	31.706

Summary		(Rs. Crores)			
Particulars	FY 2023-24	FY 2024-25	FY 2025-26	Total	
Spill Over	24.79	4.99	0.43	30.21	
New Schemes	0.00	1.00	0.50	1.50	
Total	24.79	5.99	0.93	31.71	

Capitalization of Projects under TBCB Mode

Annexure-8

(1) Capitalization for Spill Over Schemes- Transmission

Sr.No.	Sr No. as per CIP Order	Particulars	Network Addition	FY 2023-24	FY 2024-25	FY 2025-26	Total
(B) Spill Over works approved by the Board in FY 2019-20 outside the first MYT approval							
22	4	220 kV S/S Beas (new)	2x100 MVA 220/132 kV Auto T/F	12.138	24.99	15.23	52.36
			6x132kV line bays (Existing 3 and additional 3)	0	0	0	0
		132KV S/S system at Butari will be dismantled.	LILO of Butari – BBMB Jalandhar at PGCIL Jalandhar 2.5Km 0.4Sq" and subsequently LILo of PGCIL Jalandhar-Butari at Beas 22.5Km 0.4Sq"	0	0	77.94	77.94
(C) Spill Over works approved outside 2nd MYT 2020-23 by Petition/Board approval							
3	Amendments No.18/2021-22	Upgradation of 66 kV substation Old Patiala to 220 kV substation.	2X100 MVA, 220/66 kV T/F With 2 No. 220 kV line bays, 2 No. T/f bays and 1No. Bus coupler bay	2.38	3.57	32.13	38.08
7	Amendments No.24/2021-22.	400 kV S/S Behman Jassa Singh.	2x500 MVA, additional 400/220 kV ICT at 400 kV Behman Jassa Singh along with 2 no. 400 kV ICT Bays, 2 nos. 400 KV line Bays, 2 nos. 400 kv Tie Bays, 400 kv Future Bay, 2 no.220 kv ICT Bays, 220 KV Bus coupler bay, 220 KV Transfer bus coupler bay, 8 nos 220 kv line bays.	0	9.52	126.14	135.66
			LILo of 400 kv Talwandi Sabo-Nakodar line at 400 Kv Behman Jassa Singh(line length-16 km , Twin Moose conductor (Work and review)	90	60	0	150
			6 nos 220 kv bays 2 each at 220 kv Talwandi sabo, Maur & GNDTP.	0	5.95	0	5.95
Total				104.518	104.03	251.44	459.99

(2) Capitalisation for New Schemes for the 3rd control period - Transmission

Sr. No.	Substation Name	Scope of work	2023-24	2024-25	2025-26	Total
(A) TA Works						
3	Upgradation of 66 kV Guru Har Sahai to 220 kV sub-station	Creation of 220kV Guru Har-sahai with 2x100MVA , 220/66kV T/F (4 line bays at Guru Har Sahai, 2bays each at Ghubaya & Jhoke Hari Har, 2 T/F bays & 1no. bus coupler bay)	0	0	0	0
5	Upgradation of 66 kV Chaherhu to 220 kV level (2nd 100MVA, 220/66kV T/F for N-1)	Creation of 220kV Chaheru with 2x100MVA , 220/66kV T/F (4 line bays, 2 T/F bays & 1no. Bus coupler bay)	0	0	0	0
8	Upgradation of 66 kV Bhadson to 220 kV level.	Creation of 220kV Bhadson with 2x100MVA, 220/66kV T/F (6 line bays (2 at Amlah and 4 at Bhadson), 2 T/F bays & 1no. Bus Coupler Bay)	0	0	76.74	76.74
9	Upgradation of 66 kV Chourwala to 220 kV level	Creation of 220kV Chourwala with 2x160MVA, 220/66kV T/F (4 line bays, 2 T/F bays & 1no. Bus Coupler Bay)	0	0	68.04	68.04
14	Upgradation of 132 kV Sri Hargobindpur to 220 kV level (1X100 MVA 220/132 kV + 1x100 220/66 kV - already planned 3rd 220/132 kV Auto transformer at Wadala Granthian be dropped) (132 kV line from WG and 132/66 KV TFs will be spared)	Creation of 220kV Sri Hargobindpur with 1x100MVA, 220/132kV & 1x100MVA, 220/66kV T/Fs (2 line bays, 2 T/F bays & 1no. Bus Coupler Bay)	0	0	0	0

15	Re-arrangement to provide 2nd connectivity to 220 kV S/s Naraingarh	Double circuit from 220kV Khassa-Chogawan, 12 Km, 0.4 Sq"	10.81	16.221	27.04	54.07
17	220KV S/S Goraya (Addl. 220/66KV 100MVA T/F for N-1 compliance)	Connectivity of 220KV Noormehal with 220KV Goraya with D/C line (length - 25km, 0.4Sq") (LILO of both circuits of BBMB Jalandhar-Jamalpur line at Goraya subject to approval of Power Sub-committee of BBMB)	0	0	52.33	52.33
18	400KV Wadala Granthian	Stage 1: Creation of 400kV Wadala Granthian with 2x500MVA, 400/220kV ICTs (2no. 400 kV line bays, 2no. 400 kV ICT bays, 2 no. 400 kV Tie Bays, 4 no. 220 kV Line bays, 4 no. 220 kV bus interconnection bay, 2 no. 220 kV ICT bays, 1 no. 220 kV TBC bay, 1 no. 220 kV BC bay) LILO of 1 circuit of 400 kV Moga - Kishanpur line (20km, Quad Moose)	0	0	0	0
29	220 kV Hoshiarpur	2nd source connectivity to Hoshiarpur via D/C on D/C line 220 kV Dasuya-Hoshiarpur (40 km, 0.4 sq") & using existing MCkt Towers	0	0	62.86	62.86

34	220 kV D/C link between 220 kV S/S Butari and 400 kV S/S Wadala Granthian	220 kV D/C Link between 220 kV S/S Butari and 400 kV S/S Wadala Granthian, (35 km, 0.4 Sq" conductor)	0	0	0	0
35	Upgradation of 66 kV Ajnala to 220 kV level	Creation of 220 kV Ajnala with 1X160MVA + 1X100 MVA, 220/66 kV T/Fs (2 line bays, 2 T/F bays & 1no. Bus Coupler Bay)	0	0	0	0
36	Upgradation of 66 kV Bhagta Bhai ka to 220 kV level	Creation of 220kV Bhagta Bhai Ka with 1X160MVA + 1X100MVA, 220/66kV T/Fs (4 line bays, 2 T/F bays & 1no. Bus Coupler Bay)	0	0	0	0
Total			10.81	16.221	287.01	314.04
Grand Total			115.328	120.251	538.45	774.03