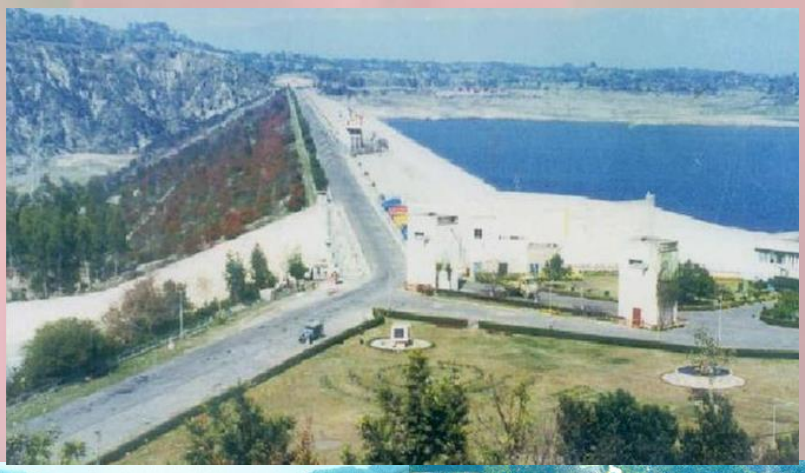
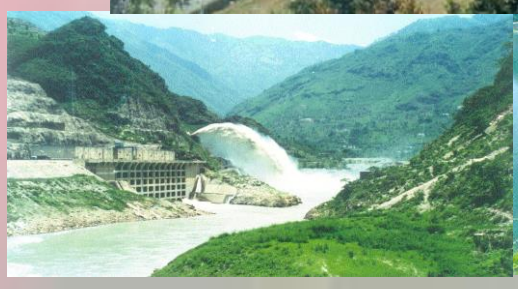
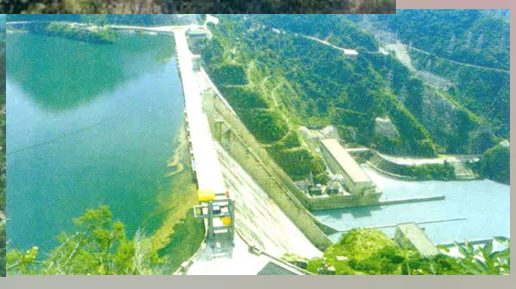
Bhakra Beas
Nation's Pride

वार्षिक रिपोर्ट

ANNUAL REPORT
2022-23







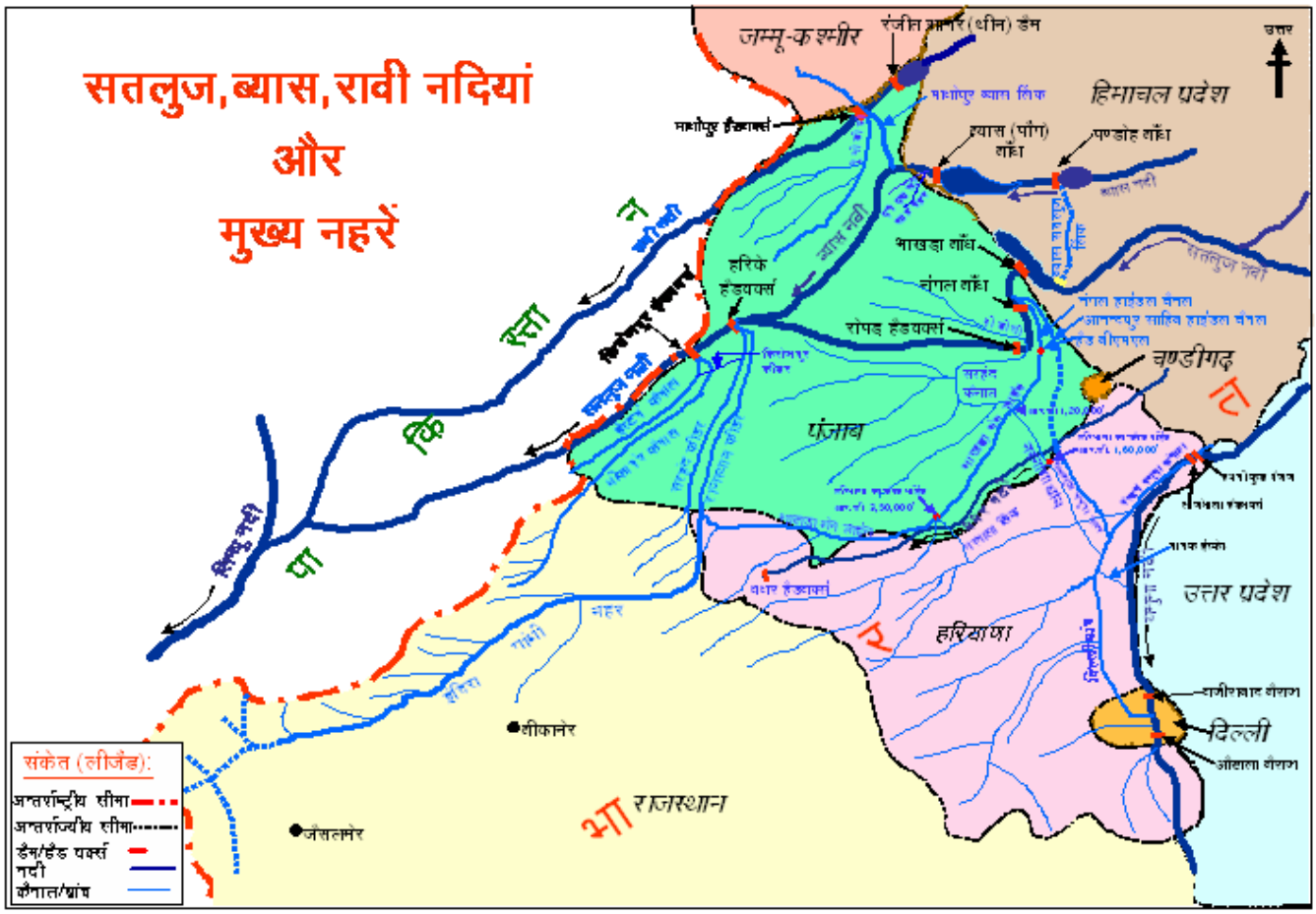
भाखड़ा ब्यास प्रबंध बोर्ड

BHAKRA BEAS MANAGEMENT BOARD

भाखड़ा ब्यास
राष्ट्र गौरव

50वीं वार्षिक रिपोर्ट

50th Annual Report
2022-2023



भाखड़ा ब्यास प्रबंध बोर्ड

Bhakra Beas Management Board

Bhakra Beas
Nation's Pride

मान्यताएँ V A L U E S

अनुशासन-कठिन परिश्रम, परिचालन श्रेष्ठता और व्यावसायिकता

Discipline- Hard work, Operational Excellence and Professionalism

लक्ष्य M I S S I O N

हमारी प्रणालियों को न्यूनतम लागत पर दक्षतापूर्वक चालू रखना

To Keep our systems running efficiently at the minimum cost

परिकल्पना V I S I O N

जलविद्युत परियोजनाओं, पारेषण, नहर प्रणालियों के परिचालन एवं अनुरक्षण तथा नवीनीकरण एवं आधुनिकीकरण और विद्यमान मूलभूत ढांचे तथा संसाधनों के सर्वोत्तम उपयोग के लिए नई जल विद्युत अंत:शक्ति का लाभ उठाने के लिए उच्च मानकों की स्थापना में विद्युत क्षेत्र में अग्रणी रहना और एक ट्रेंडसेटर बनना।

To lead and be a trendsetter in Power Sector by establishing high standards in Operation & Maintenance, Renovation & Modernization of Hydel Projects, Transmission System availability, Canal Systems and by exploiting new Hydro Power Potential with optimal utilization of existing infrastructure and resources.

भाखड़ा ब्यास
राष्ट गौरव

भाखड़ा बांध का सामने/नीचे से दृष्य
Bhakra Dam – Downstream View

"भाखड़ा नंगल परियोजना में कुछ आश्चर्यजनक है, कुछ विस्मयकारी है, कुछ ऐसा है जिसे देखकर आपके दिल में हिलोरें उठती हैं। भाखड़ा, पुनरुत्थित भारत का नवीन मन्दिर है और यह भारत की प्रगति का प्रतीक है"

Bhakra Nangal Project is something tremendous, something stupendous, something which shakes you up when you see it. Bhakra, the new temple of resurgent India, is the symbol of India's progress."

Members of the Board
During The Year 2022-2023

Chairman	
Sh. Sanjay Srivastava	01.04.2022 to 31.03.2023
Member/Representative	
Government of India	
Sh. Raghuraj Madhav Rajendran	01.04.2021 to 30.11.2022
Sh. Mohammad Afzal	01.12.2022 to 31.03.2023
Sh. A.K. Pal	01.04.2022 to 31.03.2023
Partner States	
Punjab	
Sh. Sarvjit Singh	01.04.2022 to 18.04.2022
Sh. Krishan Kumar	18.04.2022 to 31.03.2023
Haryana	
Sh. Devender Singh	01.04.2022 to 31.07.2022
Sh. A.K. Singh	08.08.2022 to 02.11.2022
Sh. Pankaj Aggarwal	02.11.2022 to 31.03.2023
Rajasthan	
Dr. Prithvi Raj	01.04.2022 to 18.04.2022
Sh. Anand Kumar	18.04.2022 to 28.10.2022
Sh. Shikhar Agarwal	28.10.2022 to 31.03.2023
Himachal Pradesh	
Sh. Ram Subhag	01.4.2022 to 13.07.2022
Sh. R.D. Dhiman	14.07.2022 to 31.12.2022
Sh. Prabodh Saxena	01.01.2023 to 31.03.2023
Member/Irrigation	
Sh. Sanjay Srivastava	01.04.2022 to 01.01.2023
(Addl. Charge of Member/Irrigation)	
Sh. Sanjeev Dutt Sharma	02.01.2023 to 31.03.2023
Member/Power	
Sh. Harminder Singh	01.04.2022 to 30.11.2022
Sh. S.S. Dadwal	30.12.2022 to 28.02.2023

बोर्ड के सदस्य (31.3.2023 को)
MEMBERS OF BOARD (AS ON 31.3.2023)

Sh.A.K.Pal, IAS
(Representative, Govt. of India)
Commissioner, Indus,
Ministry of Water Resource,
New Delhi

Sh. Sanjay Srivastava,
Chairman
Bhakra Beas Management Board,
Chandigarh

Sh. Raghuraj Madhav Rajendran
Member, Govt. of India
Joint Secretary/Hydro,
Ministry of Power,
New Delhi

Sh. Prabodh Saxena, IAS
(Representative, Govt. of HP),
Chief Secretary to Government of
Himachal Pradesh,
Shimla

.

Sh Krishan Kumar, IAS
(Representative, Govt. of Punjab),
Secretary, Irrigation
Department,
Govt. of Punjab, Chandigarh

Sh. Prithvi Raj, IAS,
Govt. of Rajasthan, Jaipur
Secretary,
Water Resources Department, Govt. of
Rajasthan,Jaipur

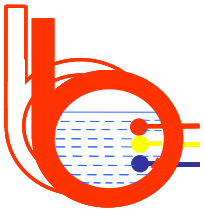
Sh Pankaj Aggarwal, IAS
(Representative, Govt. of Haryana),
Commissioner & Secretary
Govt. of Haryana, Haryana Irrigation
and Water Resources, Cepartment,
Chandigarh

Sh.Harminder Singh,
Member(Power),
(Whole Time Member)
Bhakra Beas Management Board,
Chandigarh
(01.04.2022 to 30.11.2022)

Sh. Sanjeev Dutt Sharma

Member (Irrigation)
Bhakra Beas Management Board,
Chandigarh

विषयसूची
CONTENTS



भाखड़ा ब्यास
राष्ट गौरव

अध्याय-1

Chapter-1

प्रस्तावना

Introduction

1.1 BBMB - ORIGIN

- Bhakra-Nangal Project was taken up immediately after independence of India in the joint collaboration of the erstwhile State of Punjab and the State of Rajasthan.
- After re-organization of Punjab, ***Bhakra Management Board*** was constituted on 1st October, 1967 under the Punjab Re-organization Act, 1966 for administration, operation and maintenance of ***Bhakra-Nangal*** Project.
- The works of ***Beas Projects*** were entrusted to ***Beas Construction Board*** as per the provisions of the Punjab Re-organization Act, 1966. On completion of Beas Projects, these were transferred to ***Bhakra Management Board*** on 15th May,1976 and it was re-named as ***Bhakra Beas Management Board*** as per the provisions of the Punjab Re-organization Act.

1.2 FUNCTIONS

- Administration, Operation & Maintenance of Bhakra-Beas Projects.
- Regulation of the supply of water from Bhakra-Beas Projects to the States of Punjab, Haryana and Rajasthan.
- Regulation of the supply of power generated at Bhakra-Beas Projects to the states of Punjab, Haryana, Rajasthan, Himachal Pradesh& U.T. Chandigarh.
- Any other function as the Central Government may assign after consultation with the Governments of States of Haryana, Punjab & Rajasthan.
- The Govt. of India in the year 1999 entrusted additional functions of providing & performing engineering and related technical consultancy services in field of Hydro Electric Projects & Irrigation Projects.
- Ministry of Power has assigned the work of construction and execution of 2x20 MW Baggi Power House to BBMB vide letter No.5-4/1/2019-BBMB dated 22nd October, 2019.

1.3 Power Wing

General Review

The Power Wing is entrusted with the administration, operation and maintenance of Power Houses, Transmission System and System Load Dispatch Centre (SLDC) of BBMB and Consultancy Services in field of Hydro Electric Projects.

Installed Capacity
(As on 31.3.2023)

HYDRO POWER PLANT:

Power House	**No. of machine X Capacity of machine**	**Installed Capacity (MW)**
Bhakra (Right Bank)	5x157	785.00
Bhakra (Left Bank)	4x126+1x108	612.00
Ganguwal	1x27.99 + 2x24.20	76.39
Kotla	1x28.94 + 2x24.20	77.34
Dehar	6x165	990.00
Pong	6x66	396.00
	Total	**2936.73**

ROOF TOP SOLAR:

Location	**Capacity (kWp)**
Jalandhar	125
Jamalpur	130
Narela	20
Delhi	80
Jagadhari	70
Panipat	285.19
Kurukshetra	113.93
Bhiwani	283.24
Hisar	49.5
Chandigarh	175
Ganguwal	100
Nangal	950
Talwara	790
Sangrur	60
Dhulkote	94.13
Samaypur	49.91
Total Installed Capacity	**3375.90**

Transmission System
(As on 31.3.2023)

BBMB Transmission System spreading over the states of Himachal Pradesh Punjab, Haryana UT Chandigarh and Delhi operates in integrated manner with Northern Regional Power Grid. The Transmission System of BBMB Comprises as under :-

Sr. No.	Description	No. of Sub Station	Line Length (Ckt. KM)
1.	400 KV	2	573.95
2.	220 KV	13	2773.54
3.	132 KV	-	21.72
3.	66 KV	1	90.00
Total		**16**	**3459.21**

System Load Dispatch Center (SLDC)

The System load dispatch Center (SLDC) of Bhakra Beas Management Board is assigned with the responsibility of Round the Clock Monitoring, Operation and Control of BBMB Transmission and Generation Assets.

1.4 Irrigation Wing

General Review

The Irrigation Wing is entrusted with the administration, maintenance and operation of the following Project components:-

I. Bhakra-Nangal Project

(a) Bhakra Dam & Reservoir and Works appurtenant thereto including Nangal Workshop and Nangal Township.

(b) Nangal Dam and Nangal Hydel Channel.

II. BEAS PROJECT

a) Unit-I (BSL Project)

Beas Satluj Link Project comprising Pandoh Dam, Pandoh-Baggi Tunnel, Sundernagar Hydel Channel, Balancing Reservoir, Sundernagar-Satluj Tunnel & connected civil works and townships at Sundernagar, Slapper and Pandoh, Hospital, School, Rest House etc.

b) Unit-II (Beas Dam at Pong)

Beas Dam at Pong including reservoir, outlet works, spillway and works appurtenant there to and Talwara Township

National Hydrology Project (NHP)

Bhakra Beas Management Board (BBMB) has already set up Earth Receiving Station (ERS) at Chandigarh for Inflow Flood Forecasting (i.e. short term 3 days and medium term 7 to 10 days) for optimum utilization of Bhakra and Pong Reservoirs and Canal Network.

भाखड़ा ब्यास
राष्ट गौरव

अध्याय-2

Chapter-2

बोर्ड के निर्णय

Decision of Board

2.1 Meetings of the Board held during the Year 2022-23

The Board held three meetings during the period 01-04-2022 to 31-03-2023 i.e. 242th to 244th meetings.

1. 242 th meeting of the Board held on 15.07.2022
2. 243th meeting of the Board held on 09.12.2022
3. 244th meeting of the Board held on 24.03.2023

2.2 Important Decisions Taken in the Board Meetings

2.2.1 242th meeting of the Board held on 15.07.2022

Item No. 242.02

Signing of Pre-Implementation Agreement (PIA) with respect to Baggi Hydro Electric Project (HEP).

Special Secretary, BBMB while explaining the agenda note, stated that the MoU received from GoHP for implementation of Baggi Hydro Electric Project was placed before the Board in its 233rd meeting held on 20.12.2019. Some of the important conditions contained in the MoU included were supply of 12% free power to GoHP, 1% additional free power for Local Area Development Fund (LADF), pre-commissioning LADF @1.5% of the project cost and supply of 100 units of free power for 10 years to the project affected families. After detailed deliberations, the Board in its 234th & 235th meetings, consented these provisions of MoU and allowed BBMB to proceed with signing of MoU with GoHP. In pursuance to the approval accorded by the Board, BBMB submitted the Detailed Project Report (DPR) of Baggi Project to GoHP for techno-economic clearance on 17th Nov., 2020 and also requested GoHP to sign the MoU. However, GoHP vide letter dated 11.05.2022 forwarded a new document namely “Pre-Implementation Agreement (PIA)” in place of already approved MoU to be signed between BBMB and DoE, GoHP before execution of the Project. It was further intimated that some of the clauses of the PIA were not in consonance with MoU earlier approved by the Board and accordingly the GoHP was requested to review & delete the additional clauses. Thereafter, GoHP deleted some of the additional clauses but some of the additional clauses have not been dropped. The PIA is attached with the agenda.

Initiating the discussions, Member (Haryana) stated that most of the civil structure required for commissioning of Baggi Power House was raised at the time of construction of BSL Project i.e., much before the annunciation of Hydro Power Policy by the GoI and GoHP, which mandates supply of free power to the home State in which Hydro Power Project is being commissioned. However, on the insistence of GoHP and in broader National Interest to harness the hydro power, the partner States of BBMB had agreed to provide free power from project to the GoHP as per their policy. Since the primary concerns of the GoHP has already been addressed by BBMB, they should not press for such additional conditions, which are unnecessarily delaying the execution of project.

Representative of Member (Himachal) explained that the terms and conditions of PIA are as per the policy approved by GoHP for all Hydro Power Projects in the State. Further, on the request of BBMB, GoHP has already dropped many conditions of the PIA, wherever it was possible.

Member (Power), BBMB stated that the GoHP being a partner in the proposed Baggi HEP, such conditions should not be imposed by GoHP. In this regard, the representative of Member (Himachal) stated that the clauses are as per the policy guidelines of Swaran Jayanti Policy and are being made applicable on all projects being commissioned in the state including central sector projects. He however assured that the clauses mentioned in the PIA, particularly the punitive clauses such as levy of extension fee etc., shall be invoked by GoHP only in exceptional circumstances and as per applicability to the Baggi Project and not as a matter of rule. He requested the Board to consider and approve the PIA forwarded by GoHP.

Special Secretary, BBMB informed that for evacuation of power from Baggi HEP, it is mentioned in the PIA that “Evacuation of power beyond the interconnection point shall be based on mutually agreed wheeling charges or determination by the competent regulatory body, as the case may be.” In this regard, Member (Haryana) desired to know the wheeling charges applicable in case of Baggi HEP. Special Secretary, BBMB informed that the wheeling charges are about Rs 1.03 Lac per MW per month, which works out to about 40 paisa per unit in case of Baggi HEP. Chairman, BBMB further informed that BBMB is exploring the possibility of erecting its own transmission line from Baggi to Dehar, for which

detailed survey is to be carried out, so as to arrive at best techno-economic solution, however, there are several constraints like availability of ROW, forest clearance, etc., which also needs to be considered.

Member (Haryana) desired to know whether BBMB will have to pay any transmission charges to HP even after erection of own transmission line by BBMB. In this regard, the representative of GoHP confirmed that in case BBMB erects its own transmission line, then BBMB will not have to pay any transmission charges or wheeling charges to HPTCL.

The Board deliberated in detail the various clauses of Pre-Implementation Agreement (PIA) particularly those which were not there in the already approved MoU and authorized BBMB to sign the "Pre-Implementation Agreement (PIA)", as submitted by DoE, GoHP vide letter dated 07.07.2022 except applicability of the subsequent amendment in the Swaran Jyanti Energy Policy of the GoHP on the agreement.

Item No. 242.03

To place an order on M/s SJVN Limited to setup grid connected Ground Mounted Solar Power Plants at four different locations of BBMB, aggregating to 18MW on Build Own Operate (BOO) basis for 25 years at a levelized tariff discovered through tariff based competitive bidding.

Special Secretary, informed that during the 233rd Board meeting (20.12.2019), the Board directed to float a single NIT for installation of 4 No. Ground Mounted Solar Power Plant with aggregate capacity of 18MW (10MW+ 4MW+2MW+2MW). Punjab Energy Development Agency (PEDA) floated the tender at upper levelized ceiling tariff of Rs 2.66 per Unit excluding the cost of transmission line on tariff based competitive bidding (TBCB) on Build Own Operate (BOO) basis. PEDA informed that even after several extensions, only a single bid has been received at ceiling tariff of Rs. 2.66 per unit. The case was put up for approval in the 241st Board meeting held on 16.03.2022, wherein after deliberations it was decided that BBMB should negotiate with M/s SJVNL, as only one bid has been received and also PSPCL must confirm the waiver of LTA & SLDC charges expeditiously for 10MW solar plant located in Talwara.

In view of decision of Board, a committee was constituted to negotiate with M/s SJVNL. During negotiation, M/s SJVNL has agreed to reduce the levelized

tariff from Rs.2.66 to Rs.2.63 i.e. reduction by 03 paisa. Special Secretary, BBMB further informed that the matter regarding waiver of LTA & SLDC charges was also taken up with PSPCL, whereupon PSPCL vide their letter dated 19.05.2022 has replied that the matter was considered and it has been decided that BBMB shall file a petition before PSERC in this regard.

Chairman, BBMB informed the Board that the discovered tariff of Rs.2.63 per KWh for this 18 MW Ground Mounted Solar Plants is quite reasonable in comparison to the tariffs of similar capacity solar plants in the country and these solar plants will help the partner states to lower their APPC rates and also to meet their RPO obligations. He further indicated that the order will be placed only if PSERC allows waiver of LTA charges for 10MW solar plant located in Talwara. However, for remaining 3 solar plants totaling 8MW (4MW+2MW+2MW), the waiver of PSERC is not required as power from these projects are pooled in BBMB own system and the order can be placed with the firm straight away after Board approval without waiting for the waiver from PSERC.

Before filing a petition in PSERC for waiver of LTA & SLDC charges for 10MW solar plant located in Talwara, approval of Board for acceptance of levelized tariff of Rs. 2.63 per unit as negotiated with SJVNL is required.

Member (Haryana) desired to know the tariff of solar plants being setup in the state of Rajasthan. In this regard, Addl. Chief Engineer/RVPNL intimated that the tariff being discovered in the solar plants of capacity 500 MW and above is in the range of Rs. 2.20 – 2.25 per unit in Rajasthan but in the plants of lower capacity the tariff is much higher. He further intimated that Rajasthan Electricity Regulatory Commission has approved the tariff of Rs. 3.14 under PM-KUSUM Scheme.

After detailed deliberations, Board approved the following proposal:

i. Subject to waiver of LTA & SLDC charges by PSERC, to place an order on M/s SJVN Limited to setup 10MW Grid connected Ground Mounted Solar Power Plant on Build Own Operate (BOO) basis for 25 years at a levelized tariff of Rs. 2.63 per Unit excluding the cost of transmission line and as per the terms and conditions of Power Purchase Agreement and Land Rent Agreement.

ii. To place an order on M/s SJVN Limited to setup 3 no. grid connected Ground Mounted Solar Power Plant with an aggregate capacity of 8

MWp (4MW+2MW+2MW) on Build Own Operate (BOO) basis for 25 years at a levelized tariff of Rs. 2.63 per Unit excluding the cost of transmission line and as per the terms and conditions of Power Purchase Agreement and Land Rent Agreement.

ii. Apportion the power generated from 3 No. SPPs proposed to be setup at Talwara & Pong Dam between the partner state power utilities of BBMB as per their share quota in the Pong Power House and power generated from the SPP at Village Neilla as per the share quota of partner state power utilities of BBMB in the Bhakra Complex Power Houses.

iii. Erection, Testing & Commissioning of transmission lines from Gantry of solar power substation to the BBMB / PSPCL substation, for evacuation of power at an estimated cost of Rs. 2.09 Crore, in the scope of BBMB. However, expenditure shall be incurred on actual basis.

iv. Approval for Land Rent Agreement and PPA.

Item No. 242.04

To place an order on M/s SJVN Limited to setup 15MW grid connected Floating Solar Power Plant at Nangal Dam Reservoir, near village Neilla, Distt Bilaspur Himachal Pradesh on Build Own Operate (BOO) basis for 25 years at a levelized tariff discovered through tariff based competitive bidding.

Special Secretary, BBMB informed that earlier this agenda was placed before the Board in 241st board meeting held on 16.03.2022 and it was decided that this agenda item may be deferred to next meeting for further deliberations and final decision. BBMB may explore possibility of subsidy or VGF available for floating Solar Power plant.

Special Secretary, BBMB further apprised board that matter was taken up with MNRE and MNRE vide letter dated 04.07.2022 has informed that currently there is no such subsidy/funding available with them for such plants.

Chairman, BBMB informed that there was fair completion for the selection of the bidder and after several rounds in e-Reverse bidding, a competitive tariff of Rs 3.26 per unit has been discovered with M/s SJVNL as L-1 bidder. He

further stated that as per data collected by BBMB, the discovered tariff of Rs.3.26 per KWh for this 15 MW Floating Solar Plant is quite reasonable in comparison to the tariff of other recently commissioned / ordered floating type solar plants of similar size elsewhere in the country. He further stressed that BBMB has lot of potential for setting-up floating solar power in the reservoirs of Bhakra & Pong Dams and the experience gained after commissioning of this 15 MW floating solar plant would enable BBMB to exploit the huge potential most optimally.

Member (Haryana) desired to know whether there are any transmission charges applicable in this case. In this regard, Member (Power) clarified that are no transmission charges payable in this case as BBMB proposes to erect its own transmission line for evacuation of power from the project.

Member (Rajasthan) and Member (H.P) agreed with the proposal, as this project shall provide valuable experience which would be helpful in taking up larger floating solar projects in future in BBMB reservoirs. Member (Punjab) also consented the proposal.

After detailed deliberations, Board approved the following proposal:

i. To place an order on M/s SJVN Limited to setup a 15MW grid connected Floating Solar Power Plant on Build Own Operate (BOO) basis for 25 years at a Levelized tariff of Rs. 3.26 per Unit excluding the cost of transmission line and as per the terms and conditions of Power Purchase Agreement and Water & Land Rent Agreement.

ii. To apportion the power generated from the proposed solar power plant amongst power utilities of the partner states of BBMB as per their share quota in the Bhakra Complex Power Houses.

iii. Erection, Testing & Commissioning of 33/66kV transmission line from 33kV Gantry of floating solar substation to 66kV Bay at Bhakra Left bank switchyard through 33kV underground and overhead line, 33/66kV transformer and 66kV underground cable which is approximately 6 Km for evacuation of solar power, at an estimated cost of Rs. 519 lacs (in the scope of BBMB). However, expenditure shall be incurred on actual basis.

iv. To ratify the approval accorded by the Chairman, BBMB to carry out amendments in the PPA in pursuance to the revised guidelines issued by MoP dated 22.02.2021 and provisions of CERC Renewable Energy (RE) Tariff regulations dated 23.06.2020 in the PPA.

v. Water and Land rent agreement annexed with the agenda note.

Item No. 242.05

Installation of cumulative 11.5 MW Ground Mounted Solar Power plant (10 MW at 400 kV substation BBMB, Bhiwani and 1.5 MW at 220 kV substation, BBMB Hisar.

Special Secretary, BBMB while explaining the agenda note stated that as per guidelines of MNRE, BBMB is exploring the possibility of installing solar power plants at its projects and sub-stations, in as many places as possible, to meet ever-growing demand of power in partner States.

After assessment, it was observed that it is possible to install 10MW Ground mounted solar power plant at 400kV sub-station BBMB Bhiwani (Haryana) and 1.5MW Ground mounted solar power plant at 220kV sub-station, BBMB Hisar (Haryana). The preparation of bids and tendering process for installation of cumulative capacity 11.5MW ground mounted solar plant (10MW at Bhiwani & 1.5MW at Hisar substation) shall be carried out by BBMB itself in CAPEX mode in order to avoid any third party interference within the premises of existing Sub-Stations. The project being inside the boundary of Sub-Station, the existing O&M staff can be utilized for operation of proposed solar plants, this would reduce the O&M cost and other overheads.

The capital cost and O&M cost have been considered as Rs. 3.40 Crore/ MW and Rs. 5.50 lacs/MW (with an escalation of 3.84%) respectively. The tentative capital expenditure for installation shall be Rs. 39.10 Crore. The cost of project shall be shared among the BBMB partner states as per the prevailing practice being followed in BBMB.

Member (Punjab) desired to know the per unit cost of power generated from the proposed power plant. In this regard, Member (Power) clarified that the

notional per unit cost of power has been computed at Rs. 2.44 per unit. Detailed computation is given in Annexure E-3 of the agenda note. However, the actual tariff would be arrived at after the tendering process. The share of cost and power to the partner states was also apprised to the Board.

After detailed deliberations, Board approved the proposal contained in the Agenda Note

i) Installation of 11.5MW (10 MW at 400kV substation, BBMB Bhiwani & 1.5MW at 220kV substation, BBMB Hisar) Ground Mounted Solar Power plant on Capital Expenditure Model (CAPEX Model) at an estimated capital cost of Rs. 39.10 Crore. The final cost shall be discovered through open bidding and e-RA.

ii) The share of Power & cost for 10MW plant at Bhiwani Sub-station shall be borne by BBMB power utilities as per their ratios in Beas Transmission System and for 1.5 MW Plant at Hisar Sub-station, the share of Power & cost shall be shared by BBMB power utilities as per their ratios in Bhakra Transmission System.

Item No. 242.06

Grant of Performance based annual incentive to BBMB employees in recognition of their excellent contribution towards efficient maintenance and operation of BBMB projects.

S.E.(Technical) to Chairman, BBMB while explaining the agenda note stated that during the year 2021-22, BBMB has generated 5.46% excess energy than the revised target fixed by CEA. Plant availability & transmission availability of BBMB during the year 2021-22 was 98.30% & 99.78% respectively. Further, BBMB has earned Rs. 29.21 Crore under the Deviation Settlement Mechanism (DSM) through optimal operation of its Power Houses and close monitoring of real time generation.

He further informed that as per the policy for performance based annual incentive approved by the Board in its 233rd Meeting, the annual incentive for the year 2021-22 works out to 21.8 days salary, out of which 2 days incentive shall be deducted towards contribution to BBMB Employees Family Support Fund to provide financial assistance to the family of BBMB employee in case of his/her death during service.

Member (Punjab) desired to know whether PSPCL is paying any incentive to its employees. In this regard, Member (Power) clarified that the employees working at Thermal Power Plants are being paid generation incentive by PSPCL. Further, other power generating companies like NTPC and NHPC is also paying incentive which is based on their profit. However, BBMB being a no profit organization, the incentive policy has been approved on the basis of performance.

After deliberations, Board approved the proposal to grant 21.8 days salary (B.P+G.P.+D.A.+I.R. in the unrevised pay scales and B.P+D.A in the revised pay scale) as incentive for the year 2021-22 as per policy approved by the Board in its 233rd meeting. It was also decided that out of 21.8 days, 2 days incentive shall be transferred to BBMB Employees Family Support Fund and remaining 19.8 days incentive shall be paid to the employees.

Item No. 242.07

Regarding revision of emoluments in the "Policy for Contractual Employment for employees working in BBMB after retirement".

Secretary, BBMB while explaining the agenda note stated that due to non-providing of requisite manpower in BBMB by Partner States, since long, the policy for contractual re-employment of BBMB employees after their superannuation, was approved by the Board in its 217th meeting. This policy was formulated in the year 2014 and the emoluments decided at that time, on the pattern of PSPCL, have not been revised till date. It is getting difficult & non-lucrative for the retiring employees having expertise and knowledge of equipment systems of BBMB to accept the contractual re-employment in BBMB at the emoluments being offered. It is therefore proposed to increase the emoluments of employees engaged on contractual re-employment.

He further intimated that BBMB is facing acute shortage of skilled technical manpower due to which services of certain highly skilled and experienced technical employees who are working on contractual re-employment are very essential. It is therefore proposed that the maximum age upto which the technical employees having expertise in critical areas are allowed contractual employment, may be

increased from 62 years to 64 years subject to the condition that at any time the total number of such retired contractual employees working in BBMB beyond the age of 62 years and up to maximum age of 64 years would not be more than 30 numbers.

Member, Rajasthan suggested that BBMB should post young people in such critical areas so that they can learn and take over such jobs from retired employees.

Member (Punjab) intimated that the Govt. of Punjab is considering to do recruitment only for the purpose of BBMB and will soon provide the requisite manpower to BBMB, which was also supported by Member (Haryana).

Member (Punjab) suggested that BBMB should relook at its organizational structure and rationalization/restructuring the manpower in BBMB in view of present day requirements and latest technological changes. Member (Haryana) desired that BBMB should carry out the restructuring exercise in a time bound manner and submit a proposal before the Board.

Chairman, BBMB informed that a re-structuring exercise through engagement of professional consultant firm has already been initiated to optimise the manpower at various project sites and offices.

After deliberations, the Board approved the proposal as under:

i) Revision of emoluments in the policy of contractual employment in BBMB as per details at **Appendix–G-6** attached with the agenda**.** These revised emoluments shall also be applicable to existing contractually re-employed employees and the revised emoluments to these employees shall be payable from the 1st date of the next month when the said office order of revision of emoluments will be issued. Further, other benefits/facilities which are already admissible under the Policy will remain as it is.

ii) To amend Sr. No. 3 of the Terms & Conditions of the policy as under**:-**

"The term of contractual employment will be extended in the spells of maximum one year upto the maximum age of 62 years. However, in case of an employee working at Power Plants, Workshops, Dams, Reservoirs, Hydel Channels & its appurtenant works and for Operation, Protection &

Maintenance of transmission lines, substations etc., who has technical expertise and posted in the field, for whom suitable substitute is not available, the term of contractual employment can be extended in the spells of maximum one year up to the maximum age of 64 years. This shall be subject to the condition that, the number of such retired contractual employees working in BBMB beyond the age of 62 years and up to the maximum age of 64 years at a time would be restricted to 30 numbers only".

iii) To amend Sr. No. 12(ii) of the Terms & Conditions of the policy as under**:-**
"Age of the applicant must be below the age specified at Sr. No. 3 above as the case may be".

Item No. 242.08

Enhancement of emoluments of employees working on contractual basis in BBMB.

Special Secretary, BBMB while explaining the agenda intimated that in pursuance to the decision taken in the 219th Board Meeting of BBMB, about 288 persons were recruited on contract basis for one year in certain critical categories such as Junior Engineers, Crane Operators, Dental Assistants, Drivers, Electrician/Electrical Mistry, Fireman, Fitters, Hoist Operators, Lab Technicians, Law Officer Gr.-II, Lineman, Moulders, Operation Theatre Assistants, Physiotherapists, Sub-Station Attendants, Staff Nurses, Test Mechanics, Welders, etc. Due to non-providing of requisite manpower by the partner states and as per recommendations of Head of Departments regarding their work & conduct, their services have been extended further from time to time & are continuing till date.

These contractual employees were recruited on fixed emoluments calculated on the basis of Initial Pay of their post plus Grade Pay plus 100% DA, prevailing as on 01.01.2014. An Agenda regarding regularisation of services of these contractual employees was placed before the Board in its 231st, 232nd, 233rd, 234th & 235th meetings, which were deferred after discussions. However, in the 235th Board meeting, it was decided to enhance the emoluments of these employees working on contractual basis by 64% (initial pay plus Grade pay) of the

post on which they are working with immediate effect as a one-time measure.

These contractual employees are working in BBMB since many years and have become expert in their respective and specific technical fields of BBMB projects. Therefore, after attaining the skill set required for their respective assigned job, it would be prudent to utilize their services in BBMB. Further, in view of rising inflation and pay hike by PSPCL for their employees, it would also be prudent to revise their fixed emoluments with initial pay of the post as per revised BBMB scales plus 34% allowance.

Member (Punjab) queried about the selection process of these contractual employees. Member (Power), BBMB informed that a due selection process was followed for recruitment of these contractual employees.

After deliberations Board approved the proposal as under:

i) As a onetime measure, the monthly consolidated emoluments of employees working on contractual basis, hired as per Board's decision taken in 219th meeting, shall be enhanced as per revised initial basic pay of the post plus 34% allowance w.e.f. actual date of issuance of order in this regard.

ii) This revision, however, will not provide any right of regularization to these employees.

Item No. 242.10

Annual Report of Bhakra Beas Management Board for the year 2021-22.

Special Secretary, BBMB apprised the Board Members that the Annual Report of Bhakra Beas Management Board for the Year 2021-2022 has been compiled in terms of Rules 14 of BBMB Rules, 1974 and shall be submitted to the Ministry of Power after approval of the Board. The salient features of the Report were explained to the Board members.

The Board approved that the Annual Report of BBMB for the year 2021-22.

Item No. 242.11

Resettlement & Rehabilitation (R&R) issues of Pong Dam Oustees.

The contents of Agenda were noted by the Board.

Chairman, BBMB informed that the 27th High Power Committee meeting was held under the Chairmanship of Secretary, DWR, RD&GR, GoI on 7th July 2022 in New Delhi. The following major decisions were taken in the HPC meeting:

i) A special camp shall be organized at Rajasthan in July 2022, wherein both the Govts. will reconcile the oustees figure.
ii) Eligibility Certificates shall not be issued again.
iii) Regular monthly meeting shall be held to resolve the remaining issues.
iv) Both Govts. to have a joint inspection in Stage-II regarding basic facilities. DCs should be sensitized regarding basic requirements of the allottees.

Item No. 242.18

Construction of New VIP Rest House at BBMB, Pandoh at an estimated cost of Rs. 2.73crore.

Secretary, BBMB while presenting the agenda item informed the Board that though the competency to accord administrative approval lies with Chairman, BBMB, yet considering that earlier the approval of the Board was granted for renovation of old guest house at Pandoh, the agenda item has been placed before the Board.

After discussions, the proposal as per agenda was approved by the Board with the suggestion that in future all such proposals whose competency lies with Chairman BBMB, may not be brought to the Board.

Item No. 242.19

In Principle approval to incur expenditure on NHP activities (Installed and Commissioned) beyond closure of NHP Project i.e. after 31.03.2024.

The Secretary, BBMB while presenting the Agenda intimated that the project of NHP is likely to be closed by 31.03.2024. BBMB will require a budget of about Rs.8.35 crores which will be utilized for carrying out O&M activities of the NHP works spanning over a period of five years. This amount may vary as per the progression of various activities.

After due deliberations, the Board approved the proposal as contained in Agenda Item.

2.2.2 243th meeting of the Board held on 23.07.2021

Item No. 243.01

Confirmation of the Minutes of 242nd Meeting of the Bhakra Beas Management Board held on 15.07.2022 at Chandigarh.

Secretary, BBMB informed that minutes of the 242nd Board Meeting were circulated vide letter No. 1506-23/B-9/242/1-M/Admn dated 12.08.2022. The action taken report on the decisions taken in the 242nd Board meeting is annexed as Appendix A-2 of the agenda for kind information of the members.

No comments on the 242nd Board minutes were received from Board Members except Member (Punjab). Member (Punjab) comments were received vide letter dated 09.09.2022, a copy of the same is annexed as Appendix A-3. The issues on which comments of Punjab have been received, were deliberated by the Board as under:

(i) Item No. 242.02 – "Signing of pre-implementation agreement (PIA) with respect to Baggi Hydro Electric Project".

Member(Punjab) stated that the Baggi Power House is not a new scheme as it was envisaged during the construction of BSL Project and most of its infrastructure was constructed alongwith BSL Project. Thus the plea of Himachal Pradesh to allow 12% free power and 1% additional free power for LADF is not justified and should be got waived off.

It was informed that the matter regarding grant of free power to HP was deliberated in detail in the 234th and 235th Board meetings and from the perusal of the minutes of 235th Board Meeting, it is evident that during the said meeting Member (Haryana) requested Member (H.P) to consider waiver of free power and LADF for Baggi Power House, where upon Member (H.P) intimated that the request forwarded by BBMB was considered by the State Cabinet but not found feasible for acceptance. After detailed deliberations BBMB Board had decided to proceed with signing of MoU with GoHP with these provisions.

In the 242nd Board Meeting, only the matter regarding signing of Pre-Implementation Agreement (PIA) instead of MoU was placed before the Board as the draft PIA supplied by the Govt. of HP, had some additional clauses, which were not there in the MoU earlier approved by the Board in its 235th meeting. These additional clauses were duly deliberated and agreed by the Board in the 242nd meeting except the clause regarding applicability of subsequent amendments in the Swaran Jayanti Energy Policy of the Govt. of HP on the agreement. Chairman BBMB further informed that based on the decisions taken in various Board meetings over the past 3 years, BBMB has already taken various steps for execution of Baggi Power House and it will not be prudent to reopen the settled issues at this stage.

Member (Punjab) however stated that the provision of free power will have a financial bearing on the partner states for all times to come and it will be pragmatic to once again request the Govt. of H.P. to waive off the provision of free power and LADF charges for Baggi Power House.

After deliberations, it was decided that BBMB will continue with execution of project as per decisions taken in the previous Board Meetings. However, the matter regarding waiver of free power and LADF charges for Baggi Power House will again be taken up with Govt. of H.P.

(ii) **Item No. 242.03 – "To place an order on M/s SJVN Limited to setup grid connected Ground Mounted Solar Power Plant at four different locations of BBMB, aggregating to 18MW on Build Own Operate (BOO) basis for 25 year at a levelized tariff discovered through tariff based competitive bidding".**

Member (Punjab) stated that a levelized tariff that Rs 2.63 per unit excluding the cost of transmission line and land rent is on the

higher side in comparison to the PPA signed by PSPCL of Rs 2.33 per unit in April, 2022.

In this regard Chairman, BBMB clarified that the tariff of any Solar Power Project is dependent upon the installed capacity of plant and the present project of BBMB comprises of four different solar power plants of capacity 10 MW + 4 MW + 2 MW + 2 MW = 18 MW, which are to be setup at 4 different locations in Talwara & Nangal. Further, the location of power plants is in the foothills of Himachal Pradesh, where the solar radiation is lower than South-west Punjab and Rajasthan. Despite these factors the tariff discovered for the project is quite comparable with the projects of similar capacity being set up elsewhere in the country.

Member (Punjab) desired to know whether the tariff of similar projects being awarded now has increased or decreased. In this regard, Chairman, BBMB intimated that as per the available information the cost of solar panels have increased.

After deliberations, the Board decided to proceed with commissioning of the project as decided in the 242nd Board Meeting.

(iii) **Item No. 242.04 – "To place an order on M/s SJVN Limited to setup 15MW grid connected Floating Solar Power Plant at Nangal Dam Reservoir, near village Neilla, Distt Bilaspur, Himachal Pradesh on Build Own Operate (BOO) basis for 25 year at a levelized tariff discovered through tariff based competitive bidding".**

Member (Punjab) stated that the tariff of Rs 3.26 per unit from the proposed floating SPP is on the higher side. In this regard Chairman BBMB intimated that the floating SPPs of similar size are presently being awarded at a tariff higher than the tariff discovered by BBMB. He further intimated that BBMB has a huge potential for setting up floating SPPs in the reservoirs of Bhakra and Pong Dams and the present project is being set up as a pilot project and the experience gained through this project will enable BBMB to exploit the huge solar power potential in BBMB reservoirs most optimally.

After deliberations, the Board decided to proceed with the commissioning of project as per decision taken in the 242nd Board Meeting.

(iv) **Item No. 242.06 – "Grant of Performance based incentive to BBMB employees in recognition of their excellent contribution towards efficient maintenance and operation of BBMB projects".**

Member (Punjab) stated that the current practice of BBMB to grant performance based annual incentive must be discouraged as there is no justification for this. In this regard FA&CAO, BBMB clarified that the performance based incentive is being granted as per the policy approved by the Board in its 233rd meeting. The policy is to be revised after every 5 years and the concern of Punjab will be kept in view during next revision of the policy.

(v) **Item No. 242.07 – "Regarding revision of emoluments in the policy for contractual employment of employees working in BBMB after retirement".**

Member (Punjab) stated that BBMB should review its manpower and restructure its categories so that the requisite manpower may be provided by partner states to BBMB. In this regard. Chairman, BBMB intimated that BBMB is already in the process of appointing a consultant for a comprehensive review and restructuring of the manpower.

(vi) **Item No. 242.08 – "Enhancement of emoluments of employees working on contractual basis in BBMB".**

Member (Punjab) desired to know the total financial implication involved in revising the emoluments of employees working on contractual basis in BBMB. In this regard Special Secretary, BBMB informed that at present 268 employees are working on contract basis in BBMB and the additional financial implication involved in revising their emoluments works out to about Rs. 2.66 Cr. per annum. Chairman, BBMB further intimated that these employees have gained sufficient experience in operation and maintenance of BBMB projects and their services are quite valuable to BBMB. He requested the Board to allow BBMB to implement the decision taken in the 242nd Board Meeting.

After deliberations, the Board decided to implement the decision taken in the 242nd Board Meeting on the matter.

With the above amendments, the Board confirmed the minutes of 242nd meeting circulated vide letter No.1506-23/B-9/242/1-M/Admn. dated 12.08.2022.

Item No. 243.02

Execution of Pump Storage Plant in the vicinity of Bhakra & Pong dam Reservoirs of BBMB.

Special Secretary, BBMB while presenting the agenda, apprised the Board Members about the importance of Pumped Storage Plants to meet Peak Power demand & day by day rising Renewable Power Obligation (RPO) requirement of Partner States. Board Members were also informed about the commitment made by India in the COP-26 summit at Glasgow regarding generation of 500 GW of power from non-fossil fuel-based sources by 2030, which would account for about 50% of total energy consumed in the country in 2030. He further intimated that the Ministry of Power, GoI vide letter dated 06.04.2022 has allocated identified site of Pumped Storage Plant at Majra (HP) with an estimated installed capacity of 1800 MW to BBMB along with exploration of PSPs in States of Punjab, Haryana & Rajasthan. He further intimated that BBMB engaged M/s WAPCOS Ltd., Gurugram to carry out the preliminary feasibility study/survey of the existing Bhakra Nangal project and Pong Shah Nahar project for setting up Pumped Storage Projects. After carrying out the pre-feasibility study and analyzing various factors viz. techno-commercial viability, length of Water Conductor System etc., the most promising site was found to be in the village Raipur, Distt. Una, Himachal Pradesh. The site has a tentative potential of 1500 MW.

Initiating the discussions, Member (Haryana) desired to know the cost of project and per unit cost of the energy produced by the project. In this regard, Chairman, BBMB informed that the tentative cost of the project as estimated by M/s WAPCOS is about 7000 crores and the cost of energy generated from the project works out to be in the range of Rs. 6 per unit. Member (Haryana) stated that the cost of energy is on higher side as compared to other hydro power sources. Chairman, BBMB clarified that the pumped storage plants being an energy storage projects do have tariff higher than normal projects but its advantages and economics are well established worldwide. Such plants are operating profitably all over the world including India, Japan and other developed countries.

Chairman, BBMB further mentioned that the cost of the proposed project is indicative as there are various schemes under consideration by the Govt. of India to incentivise the growth of Pumped Storage Projects in the country and BBMB can get some incentive/subsidy from Govt. of India for the project under these schemes. He mentioned that implementation of any hydro project involves lot of time consuming initial activities The present proposal is just for seeking an in-principle approval of the project. After carrying out detailed study and investigation, a bankable DPR of the project along with complete cost details will be submitted before the Board.

Representative of Member (HP) requested BBMB to share some more details of the project so that Himachal Pradesh could also share its experiences on Pumped Storage Projects being executed by the H.P Govt. However, he reiterated that Pump Storage Projects are the future technology to balance the variability of solar & wind power projects.

Member (Haryana) mentioned that he has not yet sought the clearance from Govt. and requested for more details to put the case for approval of competent authority in Haryana.

Member (Punjab) enquired about the free power component for the proposed PSP, on this, Chairman BBMB informed that as per present policy, the free power is not applicable on PSPs. Joint Secretary (Hydro) also clarified on the same and informed that MoP is working on a Policy to further incentivize PSPs.

After detailed deliberations it was decided that BBMB shall prepare a concept note with tentative cost details and send to respective Board members. The Board members shall convey their in-principle approval for the project thereon at the earliest. However, BBMB shall continue with the initial activities like reconnaissance, reassess, evaluation, site investigations, techno-economic evaluation, detailed project report (DPR), etc., as these activities are time consuming and bring more clarity & refinement to the project components.

Item No. 243.03

High Levels of BBMB Reservoirs, depletion-thereof.

Secretary, BBMB, while explaining the agenda stated that for the last about 2 months, the water level in Bhakra and Pong reservoirs was much higher as compared to average level of last 40 years recorded during this period. Level of Bhakra reservoir was hovering around 1670 ft for the last two months. Due to continuous stress on the dam body, the deflection of dam exceeded the maximum computed value of 1.03 inch and went upto 1.086 inches. However, with increase in demand in the month of December, some water has been released from Bhakra Dam to meet the requirement at Harike, after which the water level in Bhakra reservoir has come down to 1656 feet and the deflection has also come down to 1.06 inch.

Member (Punjab) stated that Punjab has major concerns on this issue. He informed that the land through which Satluj River passes is mostly owned by

private persons, who do cultivation on this land during non-monsoon season and any release of water beyond about 5000 cs destroys their crop thereby inviting public outcry. He further intimated that the requirement of building raw material in the state such as sand etc., is being met through mining in Satluj River during non-monsoon months and when any water is released in river Satluj by BBMB, all mining activity has to be stopped thereby affecting the economy of State. He requested BBMB to consider these aspects while releasing water in river Satluj during non-monsoon months.

Chairman, BBMB stated that safety of its Dams is the utmost priority for BBMB. He also mentioned that sufficient space in the reservoirs during the depletion period needs to be created so as to avoid any flooding of downstream areas of Punjab in the next monsoon season. He intimated that during October and November 2022, the partner states did not utilise full quantum of water as demanded by them in TCM, due to which water level in Dams hovered higher than the average levels. He requested Member (Punjab) to make necessary arrangements to ensure safe passage of water through river Satluj. Member (Punjab) while appreciating the concerns of BBMB assured that Punjab will provide full cooperation to BBMB. He suggested that the problem should be further deliberated and addressed through proper coordination between the officers of BBMB and Punjab. He suggested that BBMB may consider extending the depletion period of Bhakra Dam from 21st May to 21st June, which will give more time to BBMB to deplete the reservoir. In this regard, Chairman, BBMB stated that the catchment area of Bhakra Dam is also snow fed and snow melt starts coming from the of April and often filling of reservoir starts from last week of May.

Member (Haryana) stated that the deflection of Bhakra Dam has crossed the maximum computed value even at the level of 1670 ft whereas the full reservoir level of the dam is 1680ft, which is a cause of concern for the state. He suggested that BBMB should get the value of permissible deflection of Dam re-evaluated from some expert agency to avoid loss of storage in Dam. He further suggested that BBMB should also explore the possibility of desilting the Bhakra Dam Reservoir so as to restore the storage capacity lost due to silt.

After detailed deliberations, the Board decided to assign the study regarding the issue deflection of Bhakra Dam to some expert agency.

Item No. 243.04

Policy Regarding Providing Laptops to BBMB Officers.

Special Secretary, BBMB explained the agenda note.

After deliberations, the Board Members unanimously agreed to the proposal as contained in the agenda note.

Item No.243.05

Regarding empanelment of Specialist Doctors in BBMB Hospitals.

Secretary, BBMB while explaining the agenda informed that in BBMB Hospitals, there are various posts of Specialist Doctors which are lying vacant viz Ortho Specialist, Eye Specialist, Medical Specialist, Pathologist etc. and it would be in public interest to start OPD services on empanelment basis for such specialisations in the BBMB hospitals on the rates being offered by the Punjab Govt. He further informed that NHM, Punjab has introduced the modalities for empanelment of Specialist Doctors (OPD & IPD) in 4 fields i.e. Anaesthetist, Radiologist, Gynaecologist & Child Specialist. He also requested the Board to authorize Chairman, BBMB to empanel specialists in other fields also to provide OPD and IPD services in BBMB Hospitals as per requirement, against the vacant posts in BBMB Hospitals, on the same rates as mentioned in the policy of Punjab Govt.

After deliberations, the Board approved the proposal as contained in the agenda and also authorised Chairman, BBMB to empanel specialists in other fields also to provide OPD and IPD services in BBMB hospitals as per the requirements, against the vacant posts in BBMB hospitals, on the same rates as mentioned in the policy of Punjab Govt.

Item No.243.06

In-principle approval for handing over the Govt. BSL Sr. Sec. School, Pandoh to DAV College Management Committee, New Delhi for three years.

Secretary, BBMB while presenting the agenda informed that the Govt. BSL Sr. Sec. School, Pandoh (Class Nursery to Class XII) was established at the time of the construction of the BSL Project during 1970 and is the only school affiliated with CBSE, New Delhi in the region. At present the total strength of students in the school is only 43 students. BBMB is spending an amount to the tune of Rs. 1 Crore annually on the salaries of staff posted at Pandoh School.

BBMB is operating Higher Secondary Schools at its other projects viz Nangal & Talwara, which are being managed by the DAV College Management

Committee since 1984. The results of these schools are very good and these schools have proved to be an asset in the development of BBMB project areas. On the request of BBMB, DAV College Management Committee has submitted letter of intent to take over the functioning of BBMB School at Pandoh also. Keeping in view the performance of BBMB DAV Schools at Talwara & Nangal, it is proposed to engage DAV College Management Committee, New Delhi to run BBMB School, Pandoh for a period of three years. The performance of the school will be reviewed after a period of 3 years, and further extension will be accorded after the approval of Board.

After detailed deliberations, the Board principally agreed to outsource the operation and management of Govt. BSL Sr. Sec. School, Pandoh. It was, however, decided that instead of handing over the school on nomination basis, BBMB will invite an Expression of Interest (EOI) from reputed educational institutions/societies for outsourcing the school on competitive basis**.**

Item No. 243.08

Proposal for authorizing BBMB for setting up Mini Hydel Project on Bhakra Main Line Canal (BML).

Briefing the agenda, Secretary, BBMB stated that this issue was also deliberated in the 242nd Board meeting but was deferred as no consensus could be reached on the issue. He further intimated that there are 27 no. potential sites on Bhakra Main Line Canal in Punjab Area and 1 site in Haryana area where Micro/Mini Hydel Projects can be setup. The total estimated potential of all these sites is 63.5 MW. The issue was also discussed earlier in the 163rd,177th,180th & 191st meetings of the Board. During the 29th Northern Zonal Council meeting held in Chandigarh on 20.09.2019, the issue regarding setting up of Mini Hydel Projects on the Bhakra Main Line Canal (BML) was discussed. The proposal was opposed by Haryana on the concerns regarding silting of the Nangal Hydel Channel after construction of hydro power projects. On the directions of Chairman, NZC a technical committee headed by Secretary, MNRE was constituted to study the concerns of all the three States (Haryana, Rajasthan and Delhi). As per the report submitted by the Committee, there is no possibility of any silt deposition (and therefore reduction in canal capacity) in the canal. Therefore, there are no technical issues related to installation of Mini Hydel Projects in Bhakra Main Line Canal (BML).

Chairman, BBMB informed that in the last meeting of Northern Zonal Council, it was decided that the matter regarding execution of these projects should be discussed in the BBMB Board Meeting and consensus be reached among partner

states. He requested the members to deliberate and decide the issue so that the precious hydro power going waste since decades could be tapped in the overall interest of all the partner states of BBMB.

Member (Punjab) intimated that they have no objection on BBMB executing these projects provided all the power generated from the projects situated in territory of Punjab be supplied to Punjab. Member (Haryana) however expressed reservation on executing these projects and stated that the Bhakra Main Line (BML) is a lifeline of Haryana State and they cannot take risk regarding its safety and allow BBMB to puncture the Canal at so many locations for construction of power plants. In this regard, Chairman, BBMB clarified that there are proven technologies available for puncturing of running canals and BBMB will ensure complete safety of canal during execution of these projects. In this regard, Member (Haryana) stated that in case BBMB can ensure safety of canal, then Haryana can agree to the proposal in case its share of power, as applicable for Ganguwal & Kotla Power Houses of BBMB is given to Haryana. Representative of Member (HP) stated that the power share of the state of HP must be secured. Representative of Member (Rajasthan) stated that they are already facing lot of fluctuations in the water supplied to the Rajasthan through Nangal Hydel Channel and requested BBMB to ensure that the water fluctuations do not increase after construction of these mini/micro hydel projects. He further requested BBMB to secure the power share of Rajasthan in case execution of these projects is taken up by BBMB.

In view of strong opposition of Member(Punjab) on sharing of power to BBMB partner States and reservations of Member(Haryana) and Member(Rajasthan) on safety of channel and unhindered delivery of water to them through BML, the consensus on authorising BBMB for setting up of Mini Hydel Projects on BML could not be reached. As such, the Board decided to refer back the issue to the Northern Zonal Council for its resolution.

Item No. 243.09

Regarding Short and Erratic supply of Satluj water to Rajasthan at CP-5 & CP-4 via Haryana.

Secretary, BBMB while briefing the agenda stated that the state of Rajasthan and Haryana gets its share, as decided in the Technical Committee Meeting (TCM), at Haryana Contact Points i.e. at RD-160 Narwana Branch and RD-390 BML (Punjab territory). Further, Sidhmukh-Nohar system gets water through Bhakra Main Line which is a common carrier channel of Rajasthan, Punjab & Haryana. Rajasthan gets water for Amar Singh Sub-Branch & Sidhmukh System at CP-5, Nohar System at CP-4.

Representative of Member (Rajasthan) stated that water supply being received via Haryana is not proper and mostly erratic, due to which their entire regulation gets disrupted. Member (Haryana) stated that this issue can be resolved bilaterally by Haryana and Rajasthan. He also stated that sometimes Haryana also gets short supply from Punjab and for finding an amicable solution a meeting of Chief Engineer's of Haryana and Rajasthan would be held. He also instructed Chief Engineer/BWS, Haryana to look into the matter. Chief Engineer/ BWS, Haryana stated that the system of Fatehabad Branch, Baruwali Distributary and Nohar Feeder are about 35 years old and its remodelling is required to carry authorised discharge. Funds required to carry out repair/remodelling for this system are awaited from Rajasthan.

After deliberations it was decided that the issue shall be resolved bilaterally between Haryana and Rajasthan. The requisite delivery of water to Rajasthan shall be ensured by Haryana by taking short term and long term measures.

Item No. 243.10

To deliberate the matter of waiving off the late charges of Rs. 62.43 lacs on reimbursement of RM&U expenditure of Five Hydro generating units of Bhakra Left Bank Power Houses of BBMB (as received from RVPNL).

Special Secretary, BBMB while briefing the agenda stated that the funding of RM&U works, Capital expenditure & O&M expenditure of BBMB is done by the partner States in the agreed ratio. To ensure timely payment, the Board in its 205th meeting held on 04.10.2010 had decided that payments on account of RM&U will be released by the Power Utilities of Partner States within 7 days of the issue of demand without any incentive. However, in case of delayed payment, penalty @ 0.25% per week shall be levied. In pursuance to the decision, all the partner states except RVPNL made timely payments. On account of delay in receipt of payments from RVPNL, a penalty of Rs. 62.43 lakhs was imposed by BBMB in accordance with the Board decision.

The request of RVPNL to waive this penalty was placed before the Board in its 237th meeting whereupon it was decided by the Board that RVPNL shall approach BBMB with facts and figures on the issue and based on discussions between them the matter shall again be put up in the next Board Meeting. Accordingly, a meeting was held between BBMB and RVPNL on 22.06.22 and 23.06.22. During the meeting, a delay was established on the part of RVPNL. RVPNL authorities were also apprised about the audit observation in this regard.

Chief Controller of Account, RVPNL stated that after receiving the bill for RM&U charges on 07.05.2019 some data was requested from BBMB, which was received late, due to which there was a delay in making the payment. He requested the Board to consider waiver of the penalty imposed by BBMB.

Chairman, BBMB stated that during the meeting between BBMB and RVPNL, delay in making the payment was established on the part of RVPNL and waiver of penalty will set a wrong precedence. Member (Punjab) also opined that the penalty charges levied on Rajasthan should not be waived as it will set up a wrong precedent. Representative of Member (HP) also supported the views of Member (Punjab) that the penalty should not be waived off in order to maintain fiscal discipline. Member (Haryana) also opined that all partner states should honour the decision taken by the Board in the interest of BBMB.

Chief Controller of Account, RVPNL further requested that the penalty should not be levied during the grace period of 7 days allowed for making the payments. After deliberations, it was decided that no penalty shall be levied during the grace period of 7 days allowed for making the payment. It was further decided that the amount of penalty shall be re-calculated by BBMB after excluding the grace period, which shall be settled by RVPNL immediately.

Item No. 243.13

Resettlement & Rehabilitation (R&R) issues of Pong Dam Oustees.

"Special Secretary, BBMB while presenting the agenda, apprised the Board Members that the Pong Dam was constructed on River Beas and was commissioned in 1974. The reservoir of Dam is situated in District Kangra (HP). Due to storage of water in the reservoir upstream Pong Dam, 75,268 acres of land was submerged spreading over 339 revenue villages 20722 families had been displaced due to this reservoir. The Deputy Commissioner (R&R), Raja ka Talab, Distt. Kangra, H.P. is responsible for R&R of the Pong Dam Oustees in the Rajasthan Canal Project area as per the land made available by the Rajasthan in coordination with Commissioner (Colonization) at Bikaner, Rajasthan.

Govt. of Rajasthan vide notification dated 12th March,1992 amended the Rajasthan Colonization (Allotment of Govt. land to the Pong Dam Oustees in Indira

Gandhi Canal Colony) Rules, 1972, in which some new clauses were inserted which were contrary to the interests of Oustees. So Pong Dam Oustees filed a writ petition in Hon'ble Supreme Court of India. Hon'ble Supreme Court of India, pronounced the judgement in the writ petition (civil) CWP No.439 of 1992 on 26-07-1996 regarding the resettlement and rehabilitation cases of Pong Dam Oustees.

In due compliance of the directions of the Hon'ble Supreme Court, the Union of India, Ministry of Power, vide their letter No. 2/7/96/Hydel-II dated 06.09.1996 constituted a Committee under the Chairmanship of Secretary, Ministry of Water Resources, GOI to ensure compliance of orders dated 26-07-1996 of the Supreme Court. The Committee has been holding regular meetings regarding R&R cases of Pong Dam Oustees. Till date, the Committee has convened 28 meetings so far. 27th meeting was held on 07.07.2022 and the latest 28th meeting of High Powered Committee was held on 19.10.2022 in the office Secretary (D/o WR, RD&GR), New Delhi.

As decided in 26th meeting held on 01.02.2021 at New Delhi, taken by Secretary (Power) on 21.06.2021, it was directed to include the issue of R&R of Pong Dam Oustees as a standing Agenda in the Board Meeting. Since 238th Board meeting of BBMB, a standing Agenda regarding Resettlement & Rehabilitation (R&R) of Pong Dam Oustees is being placed regularly in BBMB Board meetings.

BBMB is taking up the matter regarding R&R issues of Pong Dam Oustees continuously with DC(R&R) Raja Ka Talab, Tehsil Fatehpur, Distt. Kangra (H.P.) and Commissioner Colonization Bikaner, Rajasthan. Issues being taken up regularly with DC (R&R) Distt. Kangra, H.P and Commissioner Colonization Bikaner are as under:-

- To expedite disposal of cases of Pong Dam Oustees which are pending in their office regarding issuance of eligibility certificates and allotment of cultivable land.
- To expedite complete translation of record from Urdu by Himachal Pradesh.
- For latest MIS data (reconciliation of figures).

- Preparation of list of Oustees who have been allotted land (online updating of data through Google sheet).
- To upload list of Oustees on website of Rajasthan Government to whom cultivable land has been allotted.
- To reconcile data with DC R&R Raja-Ka-Talab, Distt. Kangra (H.P) and arrive at common figure of MIS data.

It is worthwhile to mention here that due to continuous pursuance and efforts of Department of WR, RD & GR, New Delhi and BBMB, the state of Himachal Pradesh & Rajasthan reached consensus on following points in last 28th HPC meeting held on 19.10.2022 :

1. Regular reconciliation camp will be organized in between States at New Delhi under Department of WR, RD and GR, New Delhi till complete reconciliation of data. Last camp was organized from 21.11.2022 to 26.11.2022. Approximately 12000 cases have been reconciled by both the states. The next camp is scheduled in last week of January or first week of February 2023.
2. Last date for issuing the eligibility certificates to Pong Dam Oustees has been fixed on 19.04.2023. HP Government shall not issue eligibility certificates after the last date."

2.2.3 244th meeting of the Board held on 23.07.2021

Item No. 244.02

Budget Estimates for the year 2023-24 and Revised Budget Estimates for the year 2022-23.

FA&CAO, BBMB, while explaining the agenda, stated that as per Sub-Clause-5, Section 79 of the Punjab Reorganization Act, the partner States/State Power Utilities have to provide funds to BBMB to meet the expenses incurred in the discharge of its functions. Further, as per Rule 11(1) and (2) of BBMB Rules 1974, BBMB is to prepare Budget Estimate for the next financial year, which is to be approved by the Board. He further informed that the original budget grant for the year 2022-23 was Rs. 1489.34 Cr., which has been revised to Rs. 1412.27 Cr. as per Revised Budget Estimate for the year 2022-23. The Budget Estimate for the year 2023-24 is Rs. 1622.71 Cr., which is Rs. 133.37 Cr. more than the original Budget

estimate of last year. Budget provisions for various projects as well as total financial implication on each partner state/state power utility was also explained. He further, stated that the Budget Sub Committee in its meeting held on 13.01.2023 has considered the budget and recommended the same for approval by the Full Board.

Initiating the discussion, Member Punjab enquired about the sharing ratios. FA&CAO, BBMB explained the sharing ratios in detail. Further, Member Punjab & Member Haryana asked about the increase in BE 2023-24 against RBE 2022-23. FA&CAO, BBMB explained that due to initiations of some new projects, there is an increase of about 15% in BE 2023-24 against RBE 2022-23. Member Punjab also queried about the increase in establishment expenditure. FA&CAO, BBMB explained that there is an increase of only 6.4% in establishment expenditure, which is well within the Punjab Govt. notification vide which 7% increase in establishment expenditure is justified. Member Punjab has also enquired about the expenditure on pension of Partner State employees. FA&CAO, BBMB explained that the pension of employees of Partner Sates/Power Utilities are not being paid by BBMB. BBMB is paying pension only to the employees of BBMB. Member Haryana asked about the demand being raised by BBMB. FA&CAO, BBMB explained that BBMB is bound to maintain one-month cash flow in advance and as per expenditure BBMB raises demands to Partner States.

After detailed deliberations, the Board passed the proposed Revised Budget Estimates for the year 2022-23 (Rs. 1412.27 Cr.) & Budget Estimates for the year 2023-24 (Rs. 1622.71 Cr.) as proposed in the agenda.

Item No. 244.03

Execution of Pumped Storage Plants in the vicinity of Bhakra and Pong Dam Reservoirs of BBMB.

Chairman, BBMB while briefing the issue intimated that BBMB has self-identified total 8 no. potential PSP sites, 4 each on the periphery of Bhakra and Pong Dam Reservoirs each, with a cumulative potential of about 13100 MW. These sites have further been ranked based on its attractiveness considering the available information on length of water conducting system, R&R issues, enabling infrastructure, topography, etc. Initially it is proposed to take up preparation of DPR of at least 2 most lucrative sites (1 each at Bhakra & Pong Dam). Pre-feasibility report in respect of these two sites has already been prepared. In order to move further, Detailed Project Report in respect of these sites needs to be prepared, for which certain statutory clearances are required from Govt. of H.P. He further informed that a formal request has already been sent to the Govt. of H.P. as well as to the Ministry of Power, GoI to allocate these 8 sites to BBMB as self-identified PSP

sites for further exploration.

Chairman, BBMB requested the Board members to accord an in-principle approval to take up the work relating to preparation of DPR and other statutory clearances, as necessary for the execution of 1500 MW Pumped Storage Plant at Raipur Distt Una, H.P. in periphery of Bhakra Dam Reservoir and 2800 MW Pumped storage plant at village Garial, Distt Kangra, H.P. in the periphery of Pong Dam reservoir, so that further modalities with the State Government, statutory bodies, regulatory clearances, signing of pre-implementation agreement with Govt. of H.P, etc. could be taken up on priority. He further informed that after obtaining necessary clearances and completion of Detailed Project Report, a complete proposal with all technical and commercial details shall be put-up before the Board for requisite approvals.

Initiating the discussions, Member (Rajasthan) suggested that to avoid the loss of time and optimise resources, BBMB should rather take up the detailed study of all the 8 sites concurrently. He further intimated that the tariff indicated by BBMB for the Raipur Dobar PSP (1500MW) site seems to be on a higher side and suggested that the project parameters should be optimised during detailed studies & site investigations and efforts should be made to reduce tariff as much as possible. He also suggested that BBMB should also explore alternate models for financing these projects as these projects require huge investments.

Member (Punjab) also concurred with the views of Member (Rajasthan) and conveyed the concurrence of Punjab to the proposal and requested to take up the further work of preparation of DPRs expeditiously.

Member (Haryana) also agreed to the proposal and requested BBMB to prepare DPRs of identified projects expeditiously so that decision on further course of action on these projects could be taken up.

Representative of Member(H.P) also supported the proposal of PSPs and mentioned that considering the future power scenario, the PSPs are the most appropriate choice.

Joint Secretary (Hydro) mentioned that lot of thrust on PSPs are being made by GoI and every effort should be made by BBMB to commission at least some these projects before 2030.

After detailed deliberations the Board decided as under:

1. BBMB is authorised to take up the work of preparation of Detailed Project Reports (DPRs) and obtaining necessary statutory clearances/ concurrence from Central/ State /Statutory bodies like CEA/ CWC/ GSI/ CSMRS etc. for all the eight PSP sites identified by BBMB on the periphery of Bhakra and Pong Dam Reservoirs.

2. After completion of each DPR, a holistic proposal with full technical & commercial details shall be put-up before the Board for further decision on taking up of the execution of the project.
3. BBMB shall concurrently explore alternate models for financing the execution of these projects. The possibility of any kind of grant, subsidies, carbon credit, etc. offered by Central/ State Govt. or through International bodies, etc. on these PSP projects shall also be explored by BBMB.

Item No. 244.04

To place an order upon M/s SJVN Green Energy Limited to setup grid connected Ground Mounted Solar Power Plants at four different locations of BBMB aggregating to 18MW - Change of interconnection point.

Chairman, BBMB informed that in 242nd Board Meeting, approval was accorded to place an order on M/s SJVN Green Energy Limited to set up a grid connected ground Mounted Solar Power Plant at four different locations of BBMB, aggregating to 18 MW, subject to waiver of LTA & SLDC charges by PSERC. Accordingly, a petition was filed in PSERC for waiver of LTA & SLDC charges for 10 MW grid connected ground Mounted Solar Power Plant located at Talwara, however PSERC in its final order dated 10.01.2023 rejected the prayer of BBMB despite vigorous pursuance.

He further stated that BBMB has filed a review petition with PSERC for the exemption of these charges, which is still pending. In the meantime, BBMB has also explored alternate possibilities to evacuate power from proposed SPP and it was found that that a dedicated 66kV transmission line can be constructed from proposed PSP site to Pong Power House of BBMB. The total financial implication of this dedicated transmission line will be Rs. 10.37 Crores. On levelised basis this will cost about 13 paisa per unit, but this proposal will save Rs. 3.42 Crores annual charges on account of open access charges (wheeling charges) to be paid to PSPCL in case connectivity is taken at 66/11 kV substation Talwara (PSPCL), which will cost Rs 1.50 per unit. Thus, in case PSERC does not accept the prayer of BBMB regarding waiver of LTA & SLDC charges, it would be prudent for BBMB to construct its own transmission line rather than to take connectivity from PSPCL.

After deliberations, the Board approved the proposal contained in the agenda note that in case the review petition filed by BBMB regarding waiver of LTA & SLDC charges is rejected by PSERC then BBMB may go ahead for construction of its own transmission line from the proposed SPP to 66kV Pong Power House and change the power evacuation interconnection point of proposed 10 MW solar project from 66/11 kV Sub-Station Talwara (PSPCL) to 66 kV Pong Power House, BBMB at the cost of Rs. 10.37 Crore or as per actuals, whichever is less.

Item No. 244.05

Regarding engagement of consultant on contract basis.

Secretary, BBMB apprised the Board Members regarding the requirement for engaging the services of Er. Sarbjit Singh Dhadwal, Engineer-in-Chief (Retired) as Consultant on contract basis as detailed in the agenda.

Initiating the discussion, Member (Punjab) enquired as to whether BBMB wants to engage a specific person or take a suitable consultant from the market. In this regard, it was clarified that the proposal is to engage Er. Sarbjit Singh Dhadwal, who has recently retired from the post of Engineer-in-Chief, BBMB (PSPCL cadre) and was also holding the current charge of Member (Power), BBMB. The officer has vast experience of construction and operation of large hydro power plants and his services will be very useful for BBMB, particularly in view of various new projects being taken up in BBMB.

With above clarifications, Member (Punjab) agreed with the proposal.

Member (Rajasthan) desired to know whether any complaint is pending against this officer. In this regard, it was clarified that there was a general complaint regarding generation loss of more than Rs. 100 Crore due to delay in completion of capital maintenance of Unit No. 7 of Bhakra Left Bank Power House by the firm undertaking the work of capital maintenance. On the request of Member(Punjab), a table agenda was put up on the issue in 242nd Board meeting. Detailed discussions were held in the Board meeting and clarifications were furnished and allegations of loss of more than Rs. 100 Cr was found to be baseless. However, while confirming the minutes in 243rd Board meeting it was decided to refer the complaint to the Chief Vigilance Officer, BBMB, Chandigarh for independent investigation and in case the complaint about the loss of more than Rs. 100 Cr turns out to be false, then strict action shall be initiated against the complainants as per applicable law / conduct rules.

Representative of Himachal Pradesh stated that he opposes this proposal. Member (Haryana) stated that BBMB may wait for the outcome of the enquiry being conducted before engaging his services. To this, it was stated that the finalization of enquiry may take time and some disgruntled elements are in the habit of making false & frivolous complaints against senior officers of BBMB to demoralise them with a view to disrupt its critical field operations and also malign the image of BBMB for the reasons best known to them.

Chairman, BBMB requested the Board members not to take cognizance of such complaints without proper due diligence, as it would be counter-productive to the day to day functioning as well as to achieve the future growth targets in BBMB. Most of the BBMB projects are 40 to 50 yrs old and like any other power project technical issues do come, which are looked after by a very competent and motivated team of BBMB engineers and wherever required, on the spot

decisions are also taken by them in the interest of smooth operation of the projects. He further mentioned that in addition to O&M of existing projects, BBMB is also embarking on a very ambitious targets both in renewable as well as in the energy storage projects to cater to the ever increasing future needs of the partner States.

After detailed deliberations, the Board decided to authorise Chairman, BBMB to engage the services of Er. Sarbjit Singh Dhadwal, Engineer-in-Chief (Retired), PSPCL as Consultant on contract basis as per the terms & conditions mentioned in the agenda after completion of the ongoing inquiry. The Board also desired that the CVO, BBMB be requested to complete the enquiry expeditiously.

Item No. 244.07

Relaxation in Doctor Policy as a one-time measure for appointment of Dr. Narottam Bhardwaj as Part Time Doctor in BBMB upto 74 years of age.

Secretary BBMB informed the Board that the services of Dr. Narottam Bhardwaj, who is working in BBMB on part time basis from last 35 years, have been exemplary during difficult time of Covid-19 & the doctor has always remained available for BBMB employees for routine consultation as well as in case of any emergency. The doctor has already completed 72 years of age on 31.12.2022, but the doctor is fit to provide services in BBMB. So, in view of his vast experience & valuable service to BBMB, the tenure of Dr. Narottam Bhardwaj may be extended.

After deliberations, the Board decided to extend the tenure of Dr. Narottam Bhardwaj for a period of two more years in two spells of one year each, on the same terms & conditions by giving relaxation in the provision of the doctor's policy, "as a one-time measure".

Item No. 244.08

H.P Ordinance No. 2 of 2023 – The Himachal Pradesh water cess on Hydro power generation ordinance, 2023.

Secretary, BBMB briefed the agenda and likely impact of the Ordinance on the cost of generation from the BBMB projects operating in the jurisdiction of Himachal Pradesh (H.P). He intimated that the financial impact of the above ordinance as per the discharges during last year will be to the tune of Rs. 1200 crores and likely to enhance the tariff of BBMB projects by more than one rupee per unit. As BBMB is funded by the partner states hence the expenditure will have to be borne by the State Power Utilities and the State Governments.

Initiating the discussion, Member (Punjab) intimated that the Legislative Assemblies of the States of Punjab & Haryana have already passed resolutions against the imposition of this cess, a copy of which is being sent to the Govt. of India as well as to the BBMB. He further stated that the Ordinance has been passed in violation of the Inter-State River Water Disputes Act 1956. He requested BBMB to take up the matter with GoHP to exempt BBMB projects from the scope of water cess and in case of non-affirmative response from the GoHP, legal options may be explored to challenge this ordinance in the court of law. He also requested BBMB to take up the matter with Ministry of Power, GoI to prevail upon the Govt. of H.P. and impress upon them to withdraw this cess.

Member (Rajasthan) also supported the views of Member (Punjab) and stated that the matter is squarely covered under the provisions of Inter-State River Water Disputes Act 1956 and suggested that both BBMB and partner states should take up the matter with the Govt. of H.P. to withdraw the cess and make a formal request to Govt. of India to intervene in the matter as per provisions of the Act.

Member (Haryana) also reiterated the views of Member (Punjab) and intimated that the Legislative Assembly of Haryana has also passed a resolution against imposition of this cess and requested BBMB to take up the matter in the court of law on behalf of partner states.

Representative of Himachal Pradesh informed that the imposition of water cess well considered policy of the Himachal Pradesh Government and it being the partner state of BBMB, BBMB should not take Legal course against its own partner state. He further stated that in case other partner states are aggrieved from the provisions of the Ordinance, it is open for them to explore the legal options, but not through BBMB.

Chairman BBMB and FA&CAO, BBMB mentioned that though BBMB has no issue to take the legal course on the behalf of partner States, however the resource availability such as legal manpower, advocate panel, etc. in BBMB are limited and BBMB may have to approach High Court of H.P for this case, whereas States perhaps may directly file the case in Hon'ble Supreme Court. Further, this case being a high profile involving stakes of more than 1200 Cr. per annum, it would be prudent if States take the legal course on their own in view of their vast experience in dealing with such intricate inter-state issues.

After detailed deliberations, it was decided that BBMB shall directly take up the matter with the Govt. of Himachal Pradesh for the exemption of water cess on the BBMB projects and in case of non-affirmative response from the GoHP, Legal options may be explored by BBMB in this regard.

Item No. 244.09

Resettlement & Rehabilitation (R&R) issues of Pong Dam Oustees.

Members of the Board noted the position regarding efforts being made for Resettlement & Rehabilitation (R&R) of Pong Dam Oustees.

Item No. 244.15

Regarding amendment in BBMB Class I & II Officers (Recruitment & Conditions of Service) Regulations, 2015 and its Schedule-A.

Secretary BBMB apprised the Board Members about the practical problems being faced by BBMB in implementation of existing provisions of Regulation-7 of BBMB Class I & II Officers (Recruitment & Conditions of Service) Regulations, 2015 and explained the necessity for its amendment as brought out in Part-A of Agenda with the approval of Ministry of Power and its Schedule 'A'. The Board Members were also apprised that till the proposed amendment in Regulation 7 is approved by the Ministry, there is a need for allowing relaxation in the implementation of Regulation 7(iii) in respect of AEs & System Analysts who have passed the prescribed DAE for officers after the lapse of specified time frame and another opportunity is required to be granted to AEs & System Analysts who have not passed the DAE for officers till date and Board can approve the same by virtue of its powers vested under Clause 21 of the Regulations i.e. 'Power to Relax' as brought out under Part-B of Agenda Note. Secretary BBMB also briefed that some minor amendments/modifications in Schedule-A of regulations broadly on the pattern of PSPCL is also required to be carried out as proposed in Part-C of Agenda Note for which Board is competent as per the provisions of Regulation 2(o) BBMB Class I & II Officers (Recruitment & Conditions of Service) Regulations, 2015.

In view of above, the Board deliberated on the agenda note and decided the following:-

1) Approved the proposal as contained in Part-A of agenda note for further referring the matter regarding amendment in Regulation-7 of BBMB Class I & II Officers (Recruitment & Conditions of Service) Regulations, 2015 to Ministry of Power, Govt. of India for its approval and to subsequently carry out the amendments in the Schedule-A accordingly after its approval by Ministry of Power, Govt. of India.

It was also agreed that till the approval of proposed amendment by the

Ministry of Power, BBMB would continue to carry out promotions in respect of such eligible employees as under:

a. For promotion to the post of SDO: JEs who have passed the DAE for engineering subordinates.
b. For the post of Xen/EDP Manager: Officers who have passed the prescribed DAE for officers within the time frame stipulated in Regulation-7(i) or after the time frame and the delay in respect of such officers stands relaxed by the Board as per Part-B of the agenda note.

2) Approved the proposal as contained in Part - B of the agenda note to relax the implementation of Regulation - 7(iii) to the effect that the AEs & System Analysts, promoted till date in the BBMB cadre, who have passed the prescribed DAE for officers after the lapse of time frame specified in Regulation - 7(i) shall not be reverted and shall be considered for further promotion as Executive Engineer or EDP Manager as the case may be and further that the AEs & System Analysts, promoted till date in the BBMB cadre, who have not passed the prescribed DAE for the officers till date shall be granted another opportunity to pass the DAE prescribed for the officers within the time frame specified in Regulation-7(i) from the date of issue of order in this regard, failing which action as per Regulation-7(iii) will be taken against them.

3) Approved the proposed amendments in Schedule-A as contained in Part-C of the agenda note.

भाखड़ा ब्यास
राष्ट्र गौरव

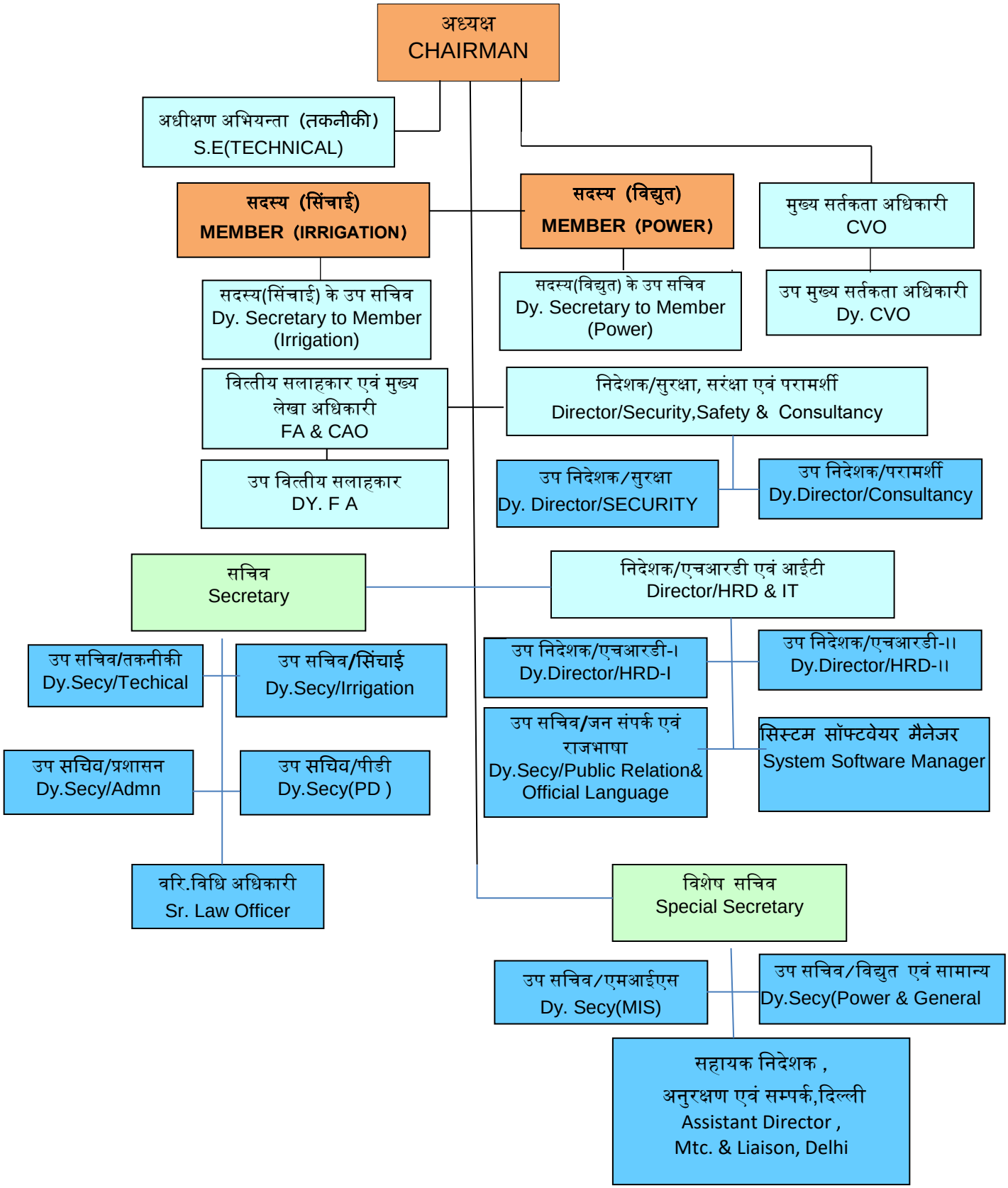
अध्याय-3

Chapter-3

संगठनात्मक व्यवस्था

Organizational Set Up

बीबीएमबी सचिवालय की संगठनात्मक व्यवस्था
Organizational Set-Up of BBMB Secretariat



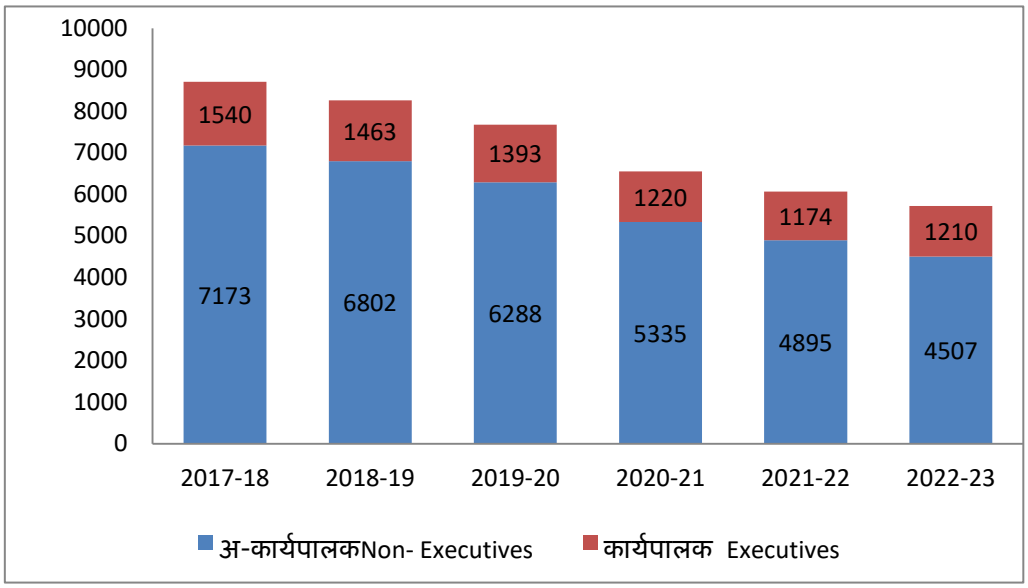
3.1 BBMB Manpower

Total sanctioned and in-position strength for entire BBMB as on 31.03.2023 is as under:-

Class of Establishment	Sanctioned Strength	In-position
Group A and B	2269	1210
Group C	5060	2130
Group D	4742	2377
Total	**12071**	**5717**

बीबीएमबी की जन शक्ति (कार्यपालक एवं अ-कार्यपालक)

BBMB's Manpower (Executives and Non-Executives)



3.2 BBMB Secretariat

The Chairman, Bhakra Beas Management Board is the Chief Executive of the Board and is assisted by two Whole Time Members viz. Member (Irrigation) and Member (Power).

A. Strength of Staff

The sanctioned and in-position strength of Corporate Office including BBMB Secretariat, Chandigarh and Co-ordination office, New Delhi, as on 31.3.2023 is as under:-

Class of Establishment	Sanctioned Strength	In-position
Group-A	80	48
Group-B	80	53
Group-C	160	78
Group-D	96	42
Total	**416**	**221**

B. Allocation of Officers/Officials (in-position as on 31.3.2023 to various Sections of BBMB Sectt.):-

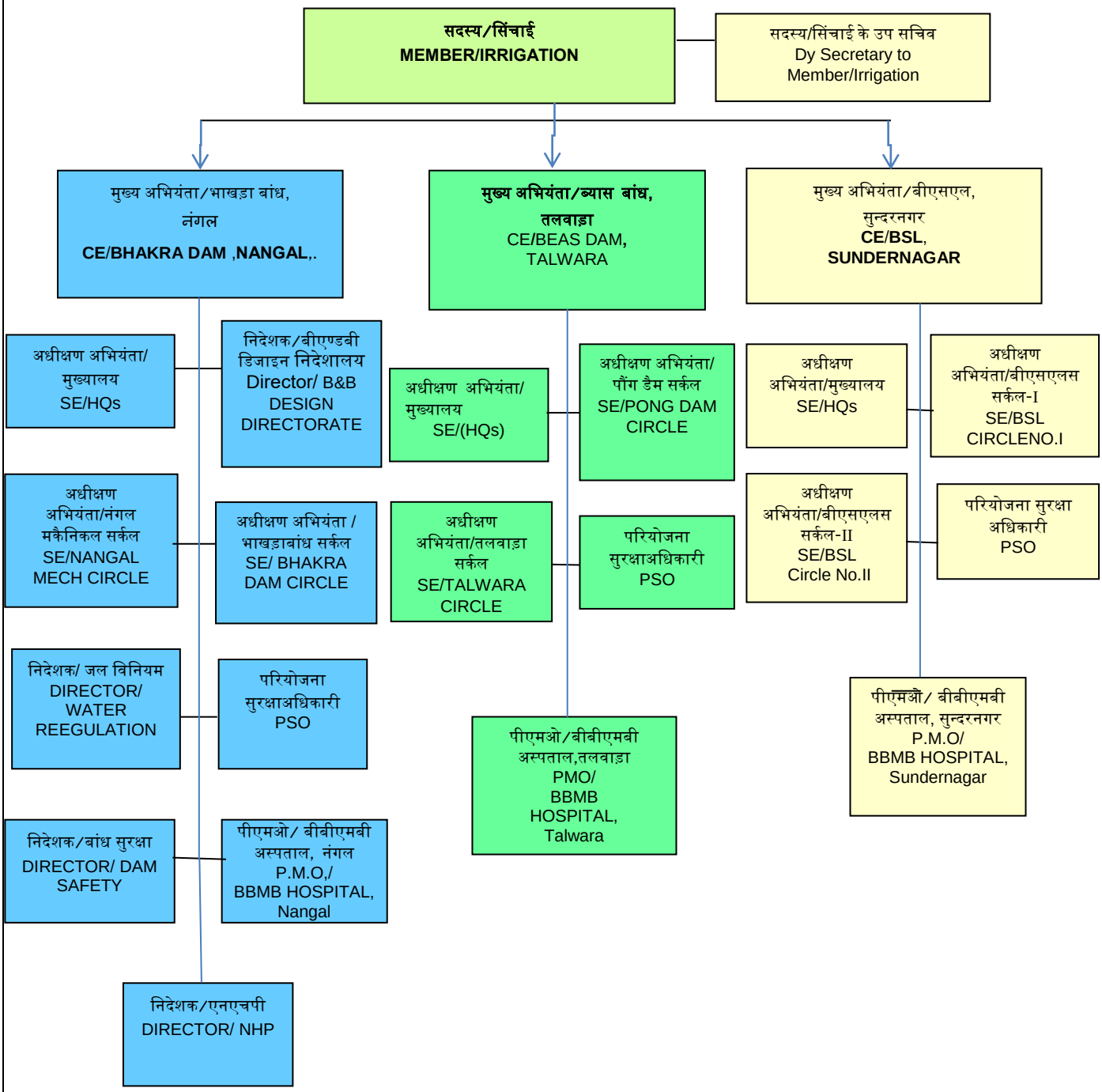
Category	Punjab	Haryana	Rajasthan	HP	C/Govt.	Punjab Power Utilities	Har.Power Utilities	Raj.Power Utilities	HPSEBL	BBMB				Total
										Regular	Contract basis	Adhoc	Other	
Officers (All Group)	6	6	2	0	1	14	6	1	3	9	NA			48
Officials (All Group)	25	21	7	0	0	17	7	1	6	89	NA			173
Total	**31**	**27**	**9**	**0**	**1**	**31**	**13**	**2**	**9**	**98**	**0**			**221**

3.3 Irrigation Wing

Chief Engineer/Bhakra Dam, Nangal, Chief Engineer/Beas Satluj Link, Sundernagar and Chief Engineer/Beas Dam, Talwara are heading the three project sites under Irrigation Wing. Director/Water Regulation, Nangal is responsible for water regulation matters.

बीबीएमबी (सिंचाई खण्ड) की संगठनात्मक व्यवस्था

Organisational Set-Up of BBMB (Irrigation Wing)



A. Strength of Staff

The sanctioned and in-position strength of regular establishment as on 31.3.2023 is as under:-

Class of Establishment	Sanctioned Strength	In-position
Group-A	268	140
Group-B	658	318
Group-C	2625	1278
Group-D	3326	1735
Total	**6877**	**3471**

B. Allocation of Officers/Officials (in-position as on 31.3.2023 to various organizations):-

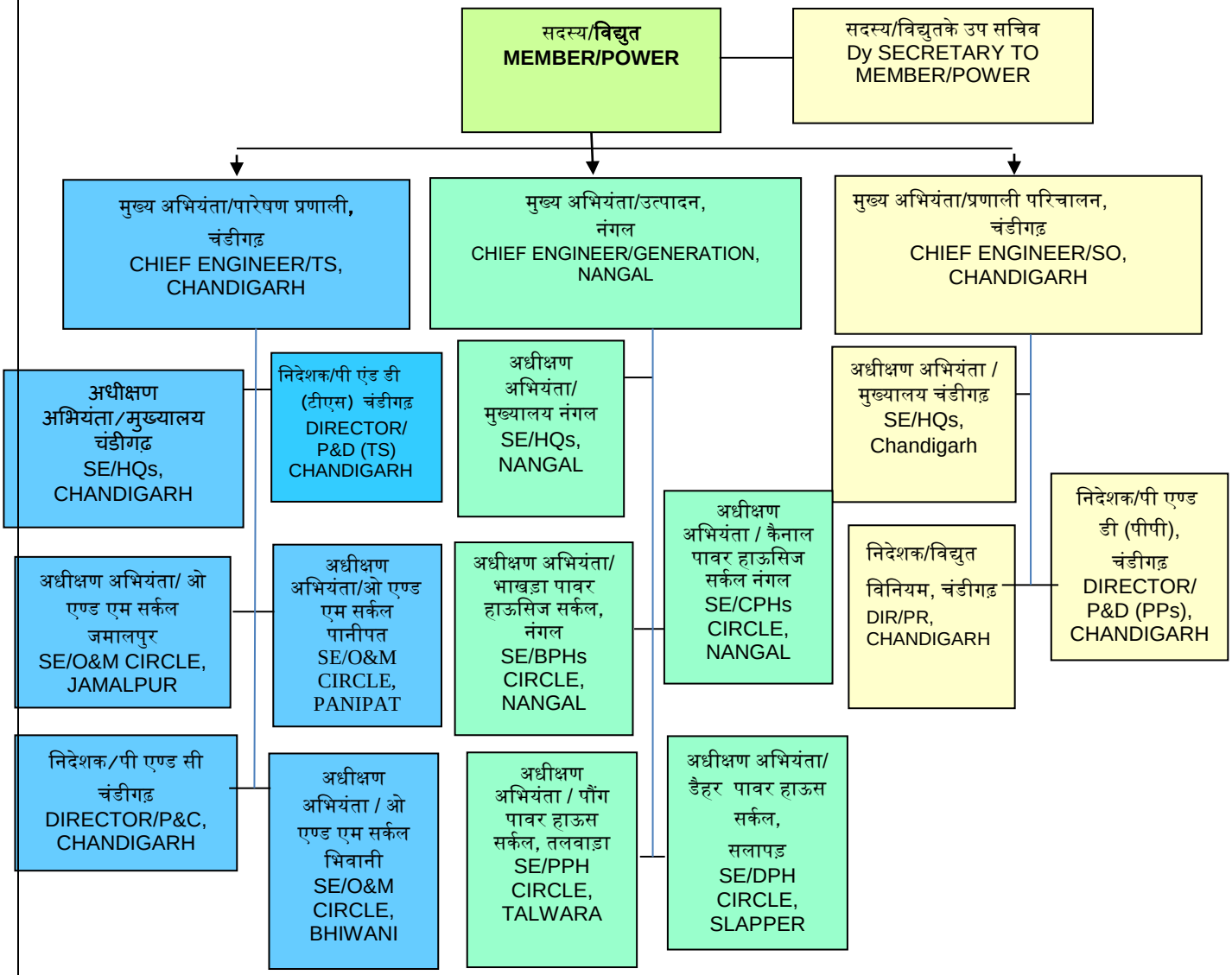
Category	Punjab	Haryana	Rajasthan	HP	C/Govt.	Punjab Power Utilities	Har.Power Utilities	Raj.Power Utilities	HPSEBL	BBMB				Grand Total
										Regular	Contract basis	Adhoc	Other	
Officers (All Group)	51	52	9	11	0	3	0	1	14	17	NA			158
Officials (All Group)	1168	89	12	12	0	16	9	3	39	1965	NA			3313
Total	**1219**	**141**	**21**	**23**	**0**	**19**	**9**	**4**	**53**	**1982**	**0**			**3471**

3.4 Power Wing

Three Chief Engineers i.e. Chief Engineer/Transmission System, Chandigarh, Chief Engineer/Generation, Nangal and Chief Engineer/System Operation, Chandigarh head the Transmission, Generation and System Operation organization respectively under Power wing of BBMB.

बीबीएमबी (विद्धयुत खण्ड) की संगठनात्मक व्यवस्था

Organisational set up of BBMB (Power Wing)



A. Strength of staff

The sanctioned and in-position strength of regular establishment as on 31.3.2023 is as under:-

Class of Establishment	Sanctioned Strength	In-position
Group-A	313	210
Group-B	689	331
Group-C	2111	715
Group-D	1227	563
Total	**4340**	**1819**

B. Allocation of officers/officials (in-position as on 31.3.2023 to various organizations):-

Category	Punjab	Haryana	Rajasthan	HP	C/Govt.	Punjab Power Utilities	Har.Power Utilities	Raj.Power Utilities	HPSEBL	BBMB				Grand Total
										Regular	Contract basis	Adhoc	Others	
Officers (All Group)	4	3	1	1	0	71	71	29	15	41	NA			236
Officials (All Group)	139	28	1	1	1	148	95	85	6	1079	NA			1583
Total	**143**	**31**	**2**	**2**	**1**	**219**	**166**	**114**	**21**	**1120**	**0**			**1819**

3.5 Finance, Accounts and Audit

The Financial Adviser & Chief Accounts Officer is the Principal Officer to operate the 'Personal Ledger Account (PLA) of the Board and to issue necessary accounts instructions. The functions of the Financial Adviser & Chief Accounts Officer are three-fold viz:

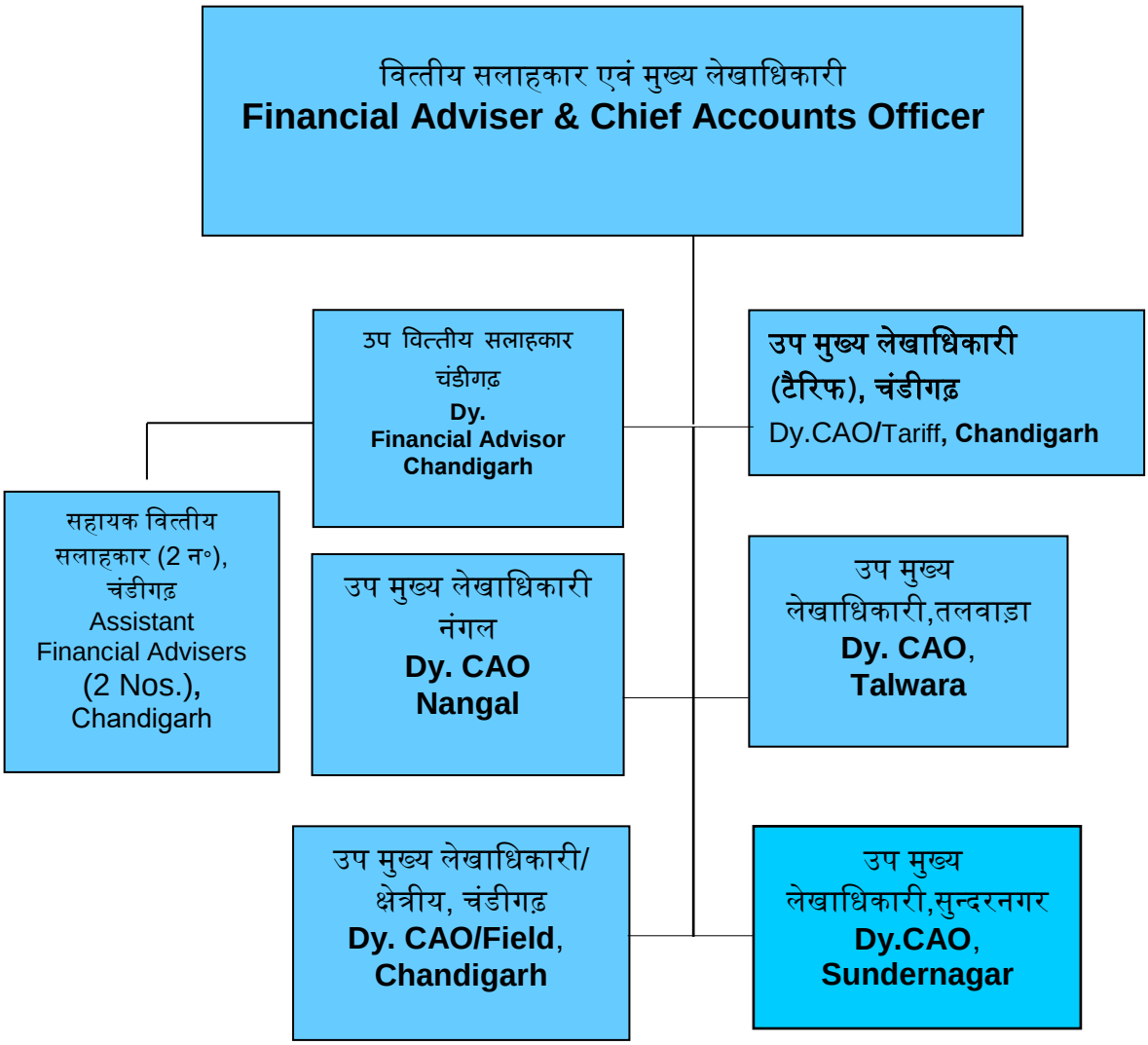
a) the Financial Adviser to the Board on all financial matters.

b) the Chief Accounts Officer for compiling the income and expenditure accounts of the Board and

c) the Chief Internal Auditor for doing the Internal Audit and Scrutiny of the financial transactions of the Board.

वित्तीय सलाहकार एवं मुख्य लेखा अधिकारी, बीबीएमबी की संगठनात्मक व्यवस्था

Organizational Set-Up of FA & CAO, BBMB



A. Strength of Staff

The sanctioned and in-position strength of regular establishment as on 31.3.2023 is given in the table below:

Class of Establishment	Sanctioned Strength	In-position
Group-A	35	23
Group-B	146	87
Group-C	164	59
Group-D	93	37
Total	**438**	**206**

B. Allocation of Officers/Officials (in-position as on 31.3.2023 to various organizations):-

Category	Punjab	Haryana	Rajasthan	HP	C/Govt.	Punjab Power Utilities	Har.Power Utilities	Raj.Power Utilities	HPSEBL	BBMB				Grand Total
										Regular	Contract basis	Adhoc	Other	
Officers (All Group)	0	9	0	2	2	6	2	0	0	2	NA			23
Officials (All Group)	51	22	1	0	0	22	10	1	0	76	NA			183
Total	**51**	**31**	**1**	**2**	**2**	**28**	**12**	**1**	**0**	**78**	**0**			**206**

भाखड़ा ब्यास
राष्ट्र गौरव

अध्याय-4

Chapter-4

वित्तीय कार्य-निष्पादन

Financial Performance

FINANCIAL REVIEW OF BBMB

- The Bhakra Beas Management Board has been constituted under Section 79(1) of the Punjab Re-organization Act, 1966, for administration, operation and maintenance of works mentioned in Section 79 of the Act. According to Sub-Section 5 of Section 79 of the Act, the Governments of the successor States of the erstwhile Punjab and the State of Rajasthan are required at all times to provide necessary funds to BBMB to meet all expenses required for discharge of its functions. The Board, in consultation with the FA&CAO, prepares the revised Budget Estimates for the current year as well as Budget Estimates for the next financial year as provided under Rule 11 of BBMB Rules.

- The revenue expenditure debitable to Irrigation Wing is financed by the Partner State Governments of Punjab, Haryana and Rajasthan from their own resources in the agreed ratios. Similarly, for the Power Wing, revenue expenditure is partly met out of the receipts realized from Common Pool Consumers and partly by the partner State Power Utilities from their own resources, in the agreed ratios.

- Ministry of Power, Govt. of India, New Delhi on the direction of Hon'ble Supreme Court of India vide its notification No. 02/13/96-BBMB (Vol. VI) dated 31.10.2011 has revised the sharing of allocation of energy in Power Wing from Bhakra-Nangal and Beas Projects w.e.f. 01.11.2011.

- The obligations of the Partner State Governments/State Power Utilities based upon the Revised Budget Estimates for the year 2022-23, after deducting the share of Revenue Receipts of Power Wing, are determined as under :-

(**Rs. in Lakhs**)

Punjab Govt.	16866.30	PSPCL	26451.08
Haryana Govt.	10916.57	HVPNL	22336.01
Rajasthan Govt.	14115.80	RRVPNL	15161.17
		HPSEB Ltd.	3927.66
		UT, Chandigarh	1911.93

- The amount of advances made by the participating State Governments and State Power Utilities are credited to the Personal Ledger Account of the FA&CAO opened in the Public Account of the Government of India. As and when the expenditure is incurred, the proportionate share of the State Governments/State Power Utilities is passed on to the concerned Accountant

General/State Power Utilities for exhibition in the State/State Power Utilities' accounts.

1. The PLA of BBMB, which remained positive throughout the year under review, closed with a credit balance of Rs. 18099.43 Lakhs on 31st March, 2023.

2. The PWD System of accounting is being followed and there has been no change in Accounting Policy during the year.

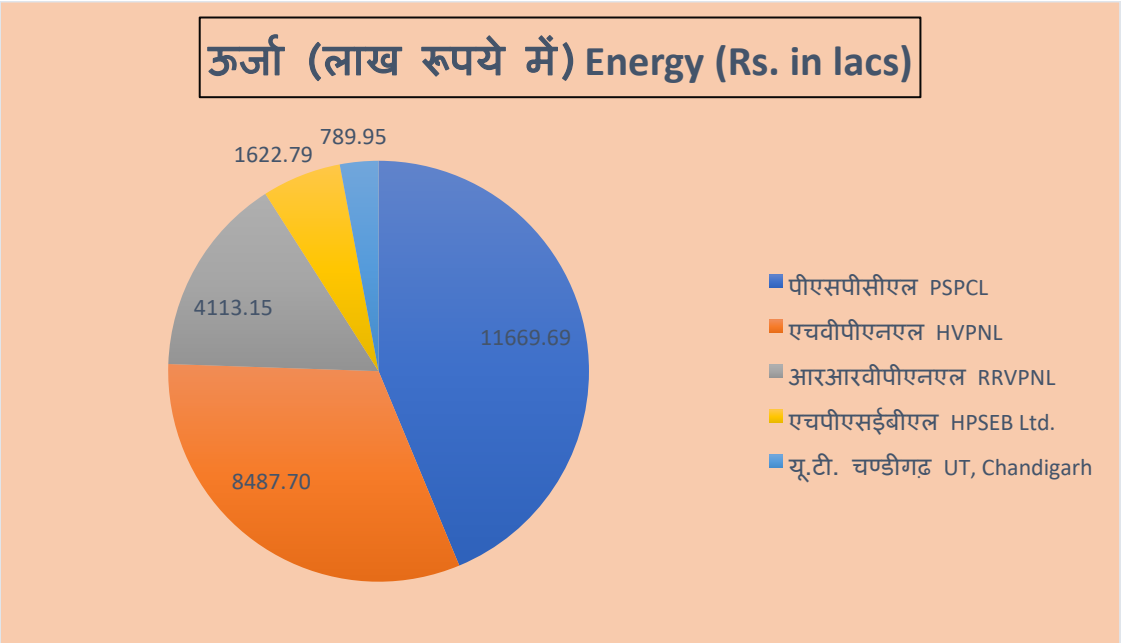
3. i) Notional Operating Expenditure (Chargeable to Power Wing) — Rs. 88566.41 Lakhs.

   ii) Units generated (ex-Bus) — 10694.02 MU

4. Notional Operating Expenditure per unit of energy (Generation & Transmission) — 82.82 paise

5. **Energy Sales Revenue: Rs. 26683.28 Lakhs**

   i) PSPCL = Rs. 11669.69 Lakhs
   ii) HVPNL = Rs. 8487.70 Lakhs
   iii) RRVPNL = Rs. 4113.15 Lakhs
   iv) HPSEB Ltd. = Rs. 1622.79 Lakhs
   v) UT, Chandigarh = Rs. 789.95 Lakhs

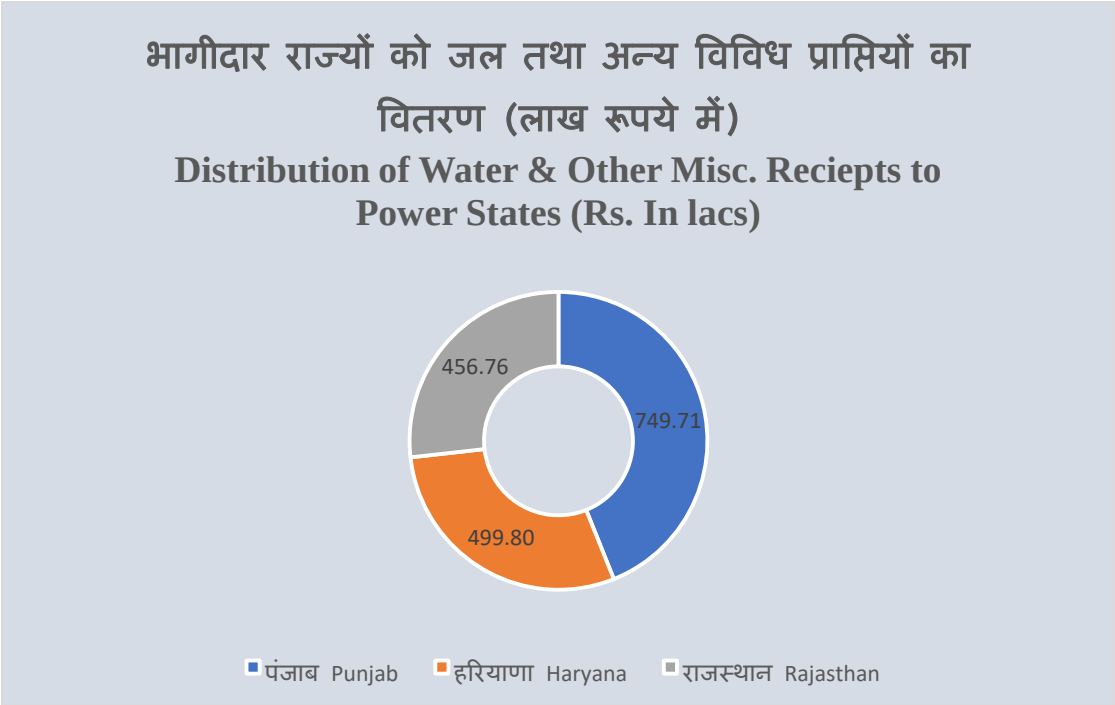


6. Water Sales Revenue & Other Misc. Receipts released to Partner State Govts: Rs. 1706.27 Lakhs

(i) Punjab State = Rs. 749.71 Lakhs

(ii) Haryana State = Rs. 499.80 Lakhs

(iii) Rajasthan State = Rs. 456.76 Lakhs



7. Capital Expenditure

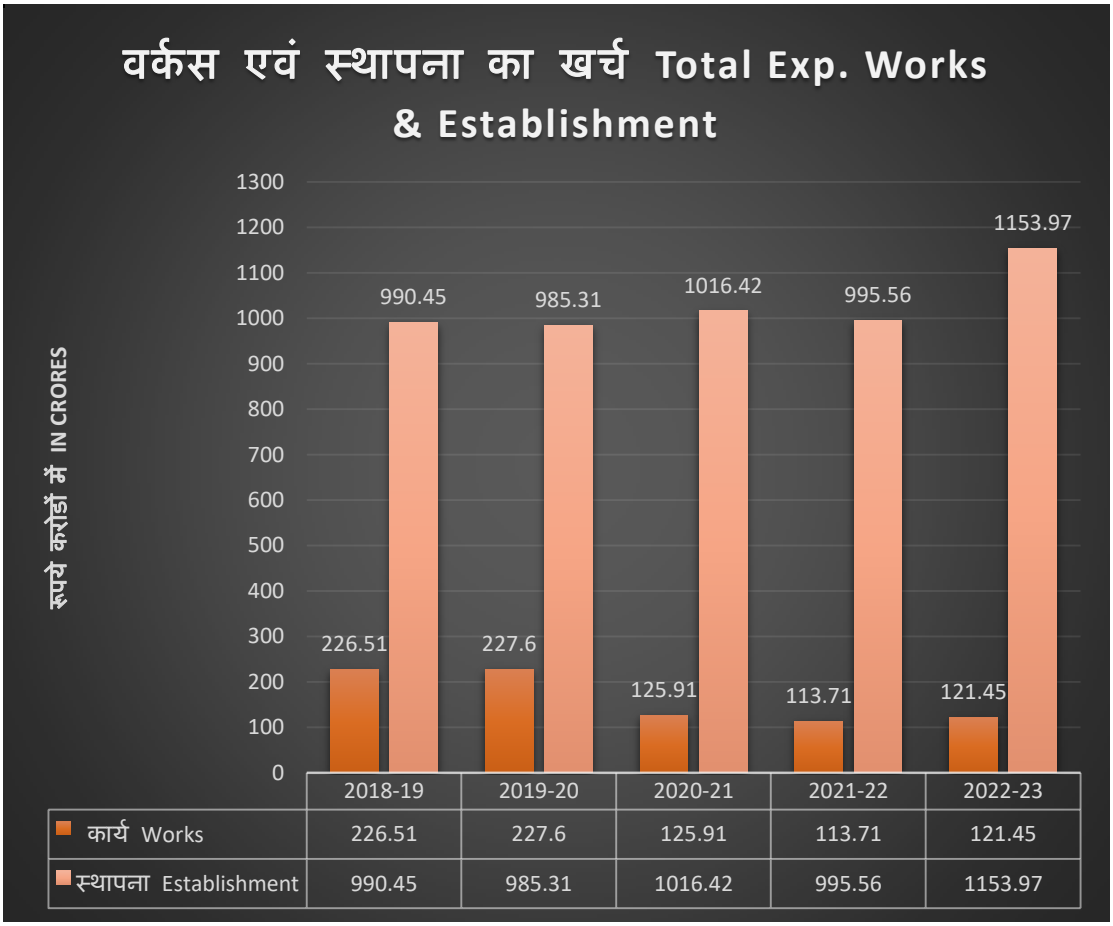
(Rs. in Lakhs)

	Punjab Govt.	Haryana Govt.	Rajasthan Govt.	Total
Bhakra	**-26.93**	**-17.95**	**-8.06**	**-52.94**
Beas (Residual Works)	**0.41**	**0.27**	**0.95**	**1.63**

8. Total Expenditure of BBMB (Works & Establishment) for the last 5 years is as under:-

Rs. In Crore

Financial Year	Works Expenditure	Establishment Expenditure	Total
2018-19	226.51	990.41	1216.92
2019-20	227.60	985.31	1212.91
2020-21	125.91	1016.42	1142.33
2021-22	113.71	995.56	1109.27
2022-23	121.45	1153.97	1275.42



4.1 POWER WING

4.1.1 Beneficiaries

The following beneficiaries are drawing electric energy from the BBMB Projects as decided by Ministry of Power, Govt. of India, New Delhi on the direction of Hon'ble Supreme Court of India vide its notification No. 02/13/96-BBMB (Vol. VI) dated 31.10.2011 w.e.f. 01.11.2011:-

a) Punjab

b) Haryana

c) Rajasthan

d) Himachal Pradesh

e) Chandigarh U.T

COMMON POOL CONSUMERS

A	National Fertilizer Ltd., Naya Nangal	1.02 LU/day
B.	Old Himachal Pradesh	1.20LU/day
C.	Supply of power for Fertilizer factory in Rajasthan	5.00 LU/day
D.	U.T. Chandigarh	1 LU/day plus Special Assistance of 10 LU/day
E.	Project supplies to Irrigation Wing at Nangal, Talwara & BSL Complex	

4.1.2 Sharing of Revenue Receipts & Expenditure

Revenue receipts and expenditure of Power Wing is apportioned amongst the partner State Power Utilities as under:-

A. Bhakra Complex

Revenue receipts and expenditure, including RM&U expenditure, is

apportioned amongst Partner State Power Utilities in the following ratios:-

R.R.V.P.N.L.	15.22%
P.S.P.C.L.	51.80% (after deducting RRVPNL Share)
H.V.P.N.L.	37.51% (after deducting RRVPNL Share)
H.P.S.E.B. L.	7.19% (after deducting RRVPNL Share)
Electricity Department, UT, Chandigarh.	3.50% (after deducting RRVPNL Share)

B. (i) Beas Project Unit-I (Dehar Power Plant)

Gross revenue receipts/expenditure on Dehar Power Plant is apportioned between Power and Irrigation in the ratio of 94:6. The net revenue receipts/expenditure on Power side is apportioned amongst partner State Power Utilities in the ratios given as unde:-

R.R.V.P.N.L. P.S.P.C.L.	20% 51.80% (after deducting RRVPNL Share)
H.V.P.N.L.	37.51% (after deducting RRVPNL Share)
H.P.S.E.B.L.	7.19% (after deducting RRVPNL Share)
Electricity Deptt., UT, Chandigarh.	3.50% (after deducting RRVPNL Share)

(ii) Beas Project Unit No. II (Pong Dam)

Gross revenue receipts/expenditure on Pong Power Plant is apportioned between Irrigation and Power in the ratio of 76.5 and 23.5. The net revenue receipts/expenditure on the power side is apportioned amongst partner State Power Utilities in the following ratios:-

R.R.V.P.N.L.	58.5%
P.S.P.C.L.	51.80% (after deducting RRVPNL Share)
H.V.P.N.L.	37.51% (after deducting RRVPNL Share)
H.P.S.E.B.L.	7.19% (after deducting RRVPNL Share)
Electricity Deptt., UT, Chandigarh.	3.5% (after deducting RRVPNL Share)

iii) Beas Transmission Lines

The reallocation of share between partner Power Utilities is as under:-

R.R.V.P.N.L	23.80%
P.S.P.C.L.	28.72% (after deducting RRVPNL Share)
H.V.P.N.L.	60.59% (after deducting RRVPNL share)
H.P.S.E.B.L.	7.19% (after deducting RRVPNL Share)
Electricity Deptt., UT, Chandigarh.	3.5% (after deducting RRVPNL Share)

4.1.3 Revenue Receipts and Revenue Expenditure

The revenue expenditure of Power Wing is primarily met out of Revenue Receipts realized from Common Pool Consumers. In the contingency of Revenue Expenditure exceeding Revenue Receipts derived from Common Pool Consumers, the excess expenditure is required to be met by the Partner State Power Utilities as per provisions under the Punjab Re-organization Act 1966. The position of revenue receipts, advances realized and expenditure incurred and balance available is given on next page:

A. Revenue Receipts

(Rs. in Lakhs)

1	Bhakra	25762.15
2	Beas Transmission Lines	123.03
3	Dehar Power Plant, Slapper (Other Receipt)	229.37
4	Dehar Power Plant (Sale of Power)	66.78
5	Pong Power Plant, Talwara (Other Receipt)	5.11
6	Pong Power Plant (Sale of Power)	13.57
7	Transfer from Bhakra I.B.	400.39
8	Transfer from Unit No.1 BSL Sundernagar	43.42
9	Transfer from Unit No.2 Pong Dam Talwara	39.46
	Total:-	**26683.28**

B. Revenue Expenditure:

Following are the net figures of Revenue Expenditure during the year 2022-23 :-

(Rs. in Lakhs)

Sr. No.	**Particulars**	**Works**	**Estt.**	**Total**
OPERATION & MAINTENANCE				
1.	Bhakra Left Power Plant/Generation	-916.79	6288.76	5371.97
2.	Bhakra Left Power Plant/Transmission	327.04	3864.54	4191.58
3.	Bhakra Right Power Plant /Generation	1433.31	4369.73	5803.04
4.	Bhakra Right Power Plant/Transmission	681.37	12408.09	13089.46
5.	Beas Transmission Lines	1249.25	7683.64	8932.89
6.	Dehar Power Plant	2144.06	4380.00	6524.06
7.	Pong Power Plant	162.48	824.95	987.43
8.	Transfer from Bhakra Irrigation	916.93	18364.40	19281.33

9.	Transfer from Unit No. I of Beas Project (Beas Sutlej Link, Sundernagar)	1692.94	18752.10	20445.04
10.	Transfer from Unit No.2 of Beas Project (Pong Dam, Talwara)	195.08	3744.53	3939.61
	TOTAL	**7885.67**	**80680.74**	**88566.41**
RENOVATION, MODERNISATION & UPRATING (RM&U)				
11.	RM&U of Bhakra Left Power House	1618.42	--	1618.42
	TOTAL RM&U	**1618.42**	**--**	**1618.42**
TOTAL EXPENDITURE (POWER WING) (O&M + R,M&U)		**9504.09**	**80680.74**	**90184.83**

C. Capital Expenditure

No Capital Expenditure has been booked to Capital Head of Account. However, expenditure relating to Renovation, Modernization and uprating scheme for the year is given above.

4.1.4 Outstanding O&M Charges against Partner State Power Utilities:

The position of amount recoverable from partner State Power Utilities against their share in revenue expenditure as on 31st March, 2023 is as under:-

(-) Advance
(+) Recoverable
(Rs. in Lakhs)

Particulars	PSPCL	HVPNL	RRVPNL	HPSEBL	UT, Chd.	Total
Outstanding as on 01.04.2022	**9525.56**	**-632.61**	**-328.34**	**-107.61**	**-52.57**	**8404.43**
Revenue Receipts realized during the year.	11669.69	8487.70	4113.15	1622.79	789.95	26683.28

Advances released by partner States Power Utilities during the year.	22377.09	18849.97	13025.41	3319.34	1330.92	58902.73
Total amount available	24521.22	27970.28	17466.90	5049.74	2173.44	77181.58
Expenditure incurred during the year.	35154.13	28165.42	17667.79	5097.61	2481.45	88566.40
Outstanding/ Balance available as on 31.03.2023	**10632.91**	**195.14**	**200.89**	**47.87**	**308.01**	**11384.82**

4.1.5 Outstanding RM&U Charges against Partner State Power Utilities:

The position of amount recoverable from partner State Power Utilities against their share in RM&U expenditure as on 31st March, 2023 is as under:-

(-) Advance
(+) Recoverable

(Rs. in Lakhs)

Particulars	**PSPCL**	**HVPNL**	**RRVPNL**	**HPSEBL**	**UT, Chd.**	**Total**
Outstanding as on 01.04.2022	**311.48**	**225.60**	**108.01**	**50.29**	**21.07**	**716.45**
Amount released by partner States Power Utilities during the year.	1000.24	724.29	346.65	145.89	34.22	2251.29
Total amount available	688.76	498.69	238.64	95.60	13.15	1534.84
Expenditure incurred during the year.	710.75	514.67	246.32	98.66	48.02	1618.42
Outstanding/ Balance available as on 31.03.2023	**21.99**	**15.98**	**7.68**	**3.06**	**34.87**	**83.58**

SUMMARY OF OUTSTANDINGS AS ON 31.03.2023

(-)Advance
(+) Recoverable

(Rs. in Lakhs)

	Total O&M charges	Total RM&U Charges	Total outstanding amount
PSPCL	10632.91	21.99	10654.90
HVPNL	195.14	15.98	211.12
RRVPNL	200.89	7.68	208.57
HPSEBL	47.87	3.06	50.93
UT, Chd.	308.01	34.87	342.88
Total	**11384.82**	**83.58**	**11468.40**

4.1.6 Dues from Common Pool Consumers on account of Sale of Power

During the year, the common pool consumers were M/s. National Fertilizer Limited, Naya Nangal, old Himachal Pradesh, Union Territory of Chandigarh, Rajasthan Fertilizer Factory and Irrigation Wing of BBMB. The following amounts were outstanding as on 31.03.2023 against the various common pool consumers and others.

(-) Advance
(+) Recoverable

Rs. in Lakhs

Sr. No.	Sale of Power to	Amount
1.	M/S National Fertilizer Limited., Naya Nangal - Energy - Sale of Water	6.33
2.	Rajasthan Fertilizer Factory through RUVNL	4087.44
4.	Irrigation Wing Nangal	2.21
5.	Beas Sutlej Link Project	20.51
6.	Beas Project, Talwara	3.32

7.	Union Territory Chandigarh (3.5% Schedule allocation)	7433.62
8.	Union Territory Chandigarh (Special Assistant)10 Lakhs/day	2214.71
9.	Union Territory Chandigarh (1 Lakhs/day))	221.48
10	Himachal Pradesh State Electricity Board (old Supply)	34.44
	TOTAL	**14024.06**

4.1.7 Other Outstanding Dues

A) Pooled Transmission Losses

Rs. in Lakhs

Sr. No.	Particulars	Amount
1	P.S.P.C.L.	-2.89
2	UT, Chandigarh	0.01
3	H.V.P.N.L	0.01
4	U.P.S.E.B.	0.01
	TOTAL	**-2.86**

B) Wheeling Charges (Samyapur)

Rs. in Lakhs

Sr. No.	Particulars	Amount
1.	Uttar Pradesh Power Corporation Limited	-2.72
	TOTAL.	**-2.72**

C) Wheeling Charges (Bairasiul)

Rs. in Lakhs

Sr. No.	Particulars	Amount
1.	Haryana Vidyut Prasaran Nigam Ltd. (HSEB).	31.54
	TOTAL	**31.54**

D) CENTRAL ELECTRICITY DUTY

Rs. in Lakhs

Sr. No.	Particulars	Amount
1.	Union Territory, Chandigarh	59.33
2.	Beas Sutlej Link Project	3.01
	TOTAL.	**62.34**

E) MAINTENANCE CHARGES OF CONTROL EQUIPMENT AT 132 KV DEHAR-SHIMLA LINE

Rs. in Lakhs

Sr. No.	Particulars	Amount
1.	Himachal Pradesh State Electricity Board Limited.	4.43
	TOTAL	**4.43**

GRAND TOTAL. **Rs. 14116.79 Lakhs**

Note:- 1) Outstanding of Union Territory Chandigarh (3.5%), as per ledger is 12431.38. However, arrear payable Rs. 4997.76 lacs has been adjusted. Here the amount came to Rs. 7433.62 lacs.

4.1.8 Energy Allocation/Sale

Revenue is being collected by selling the power to Common Pool Consumers whereas energy to State Power Utilities is allocated as per their shares in each project. The detail of allocation to State Power Utilities as well as to Common Pool Consumers is given on next page:

(Figures in MU)

Project	PSPCL	HVPNL	RRVPNL Including RFF	HPSEBL Including Old HP	UT Chd	NFL	Irrigation Wing	Total
Bhakra Complex	2368.68	1735.61	1013.17	563.46	376.50	25.71	20.05	6103.18

Dehar Power House	1215.59	880.31	586.67	82.13	168.67	0.00	13.07	2946.44
Pong Power House	324.07	234.69	881.78	21.86	44.92	0.00	9.36	1516.68
Grand Total	**3908.34**	**2850.61**	**2481.62**	**667.45**	**590.09**	**25.71**	**42.48**	**10566.30**

Note: **i)** Figures are based on scheduled energy as mentioned in REAs issued by NRPC.

ii) Figures for the month of September, 2022 and March, 2023 are based on provisional REAs as final REAs have not been issued by NRPC yet.

iii) Total energy sent out from BBMB Power Houses is 10694.02 MUs and energy scheduled/energy booked to the Partner States/Beneficiaries is 10566.30 MUs. The difference in actual energy sent out and energy scheduled to the Partner States/Beneficiaries has been accounted for under Deviation Settlement Mechanism (DSM) since generation stations of BBMB have come under the ambit of ABT w.e.f. June-2016.

4.1.9 O&M Cost of BBMB System

The cost booked to notional generation and notional transmission of BBMB during the year was Rs. 623.52 Crore and Rs. 262.14 Crore respectively. The O&M cost for notional generation works out to 58.31 p/kWh and notional transmission cost to 24.51 p/kWh. After accounting for receipts from common pool consumers, the cost of energy delivered to the partner States (including notional transmission) against their share works out to be 62.70 p/kWh.

4.2 IRRIGATION WING

4.2.1 Sharing of Revenue Receipts & Expenditure

A. Bhakra

Gross receipt/expenditure is apportioned between Irrigation and Power in the ratio of 50:50.

The net irrigation receipt/expenditure is further apportioned between the Partner State Governments in the following ratios:

Rajasthan	15.22%	Unit No. I
	19.06%	Unit No.II & III
Punjab	60%	after deducting
Haryana	40%	Rajasthan's share

B. Beas Project Unit-I (Beas Satluj Link)

Gross Revenue receipt/expenditure on Beas Project Unit-I, Beas Satluj Link Project is apportioned between Irrigation and Power in the ratio of 6:94. The net Irrigation receipt/expenditure is shared between the partner State Governments in the following ratios:-

Rajasthan	15%
Haryana	34%
Punjab	51%

C. Beas Project Unit-II (Pong Dam)

Gross receipt/expenditure on Irrigation side is apportioned between Irrigation and Power in the ratio of 76.5:23.5. Net revenue receipts/expenditure is apportioned between Partner States in the ratios given below:

Rajasthan	58.5%
Punjab	24.9%
Haryana	16.6%

4.2.2 Revenue Receipts and Expenditure

The compiled monthly accounts in respect of revenue and capital expenditure are sent to the respective Accountant Generals for adjustment in the State Accounts. The copies of monthly receipts/ expenditure are also sent to the Government of India, State Government and Chief Engineers of Partner States to apprise them of the flow of expenditure and to arrange for finances of the Board. Monthly Classified Accounts of cheques drawn and remittances made are sent to the Controller of Accounts, Government of India, Ministry of Power.

A Revenue Receipts

Revenue receipts amounting to Rs. 1706.27 lakhs realized during the year to the Partner State Governments i.e. Punjab Govt. (Rs. 749.71 Lakhs), Haryana Govt. (Rs. 499.80 Lakhs) and Rajasthan Govt. (Rs. 456.76 Lakhs). As per prevailing practice, the revenue receipts relating to the Irrigation Wing are paid to the Partner State Governments.

B Revenue Expenditure

The Gross revenue expenditure is apportioned between Irrigation and Power in the manner mentioned in paragraph 4.2.2 below. Partner State-wise position of funds released vis-à-vis expenditure incurred is given below:-

(-)Advance
(+) Recoverable

(Rs. in Lakhs)

Particulars	**Punjab Govt.**	**Haryana Govt.**	**Rajasthan Govt.**	**Total**
Bhakra Project Opening balance as on 01.04.2022	**-2555.45**	**4436.36**	**-485.64**	**1395.27**
Amount released during the year	8823.30	6000.00	2879.12	17702.42
Total amount available	11378.75	1563.64	3364.76	16307.15
Expenditure during The year	10092.11	6513.52	2991.21	19596.84
Closing balance as on 31.03.2023	**-1286.64**	**4949.88**	**-373.55**	**3289.69**
Beas Project Opening balance as on 01.04.2022	**-2477.84**	**-5065.88**	**-3898.40**	**-11442.12**
Amount released during the year	5089.70	4000.00	8751.04	17840.74
Total amount available	7567.54	9065.88	12649.44	29282.86
Expenditure during the year.	4871.66	3247.77	9641.08	17760.51
Closing balance as on 31.03.2023	**-2695.88**	**-5818.11**	**-3008.36**	**-11522.35**
Total balance available Bhakra & Beas as on 31.03.2023	**-3982.52**	**-868.23**	**-3381.91**	**-8232.66**

4.2.3 Capital Expenditure of Projects

A. Bhakra Project

The capital expenditure of the Board is met out of the sale proceeds of surplus stores/machinery as no loan is sanctioned by the Partner State Governments/Government of India under Capital Head of Account. Participating state-wise position is given as under:-

4700 - Capital outlay on Major Irrigation

(Rs. in Lakhs)

	Punjab	**Haryana**	**Rajasthan**	**Total**
Opening balance as on 01.04.2022	-953.72	-635.82	-285.04	-1874.58
Expenditure during the year	-26.93	-17.95	-8.06	-52.94
Total amount payable by the State Govts. to BBMB	-980.65	-653.77	-293.10	-1927.52

4801 – Power Project- Hydel Generation Left Power Plant

(Rs. in Lakhs)

Opening balance as on 01.04.2022	- 31.84	- 21.22	- 9.52	- 62.58
Expenditure during the year	--	--	--	--
Total amount payable by the State Govts. to BBMB	- 31.84	- 21.22	- 9.52	- 62.58

4801 – Power Project- Hydel Generation Right Power Plant

(Rs. in Lakhs)

Opening balance as on 01.04.2022	66.29	44.24	14.68	125.21
Expenditure during the year.	--	--	--	--

Total amount payable by the State Govts.	66.29	44.24	14.68	125.21
Grand Total (LPP+RPP)	**34.45**	**23.02**	**5.16**	**62.63**

B. Beas Project

The capital expenditure of Beas Project was previously met out of the central assistance given to the participating State Governments by Government of India. The funds for executing the residual liabilities of the project are now to be provided by the Partner State Governments out of their Plan Outlay or their own resources. State-wise position of the balance expenditure is given as under:-

4700 and 4801 – Capital expenditure of Beas Project

(Rs. in Lakhs)

	Punjab	**Haryana**	**Rajasthan**	**Total**
Opening balance as on 01.04.2022	**340.76**	**258.14**	**442.36**	**1041.26**
Amount received from the State Govts. during the year.	--	--	--	--
Expenditure during the year 2022-2023 (up to 31.03.2023).	0.41	0.27	0.95	1.63
Total amount payable by the State Govts. to BBMB (Irrigation & Power as on 31.03.2023)	**341.17**	**258.41**	**443.31**	**1042.89**

4.3 Position of Outstanding dues from Partner State Governments (AS ON 31.03.2023)

(-)Advance

(+) Recoverable **(Rs. in Lakhs)**

Particulars	Punjab Govt.	Haryana Govt.	Rajasthan Govt.	Total
O&M Charges	-3982.52	-868.23	-3381.91	-8232.66
BCB (Residual Works)	341.17	258.41	443.31	1042.89
Total	**-3641.35**	**-609.82**	**-2938.60**	**-7189.77**

4.4 CONTRIBUTORY & GENERAL PROVIDENT FUND (AS ON 31.03.2023)

Adhoc/Regular/Work-charged employees of Bhakra Beas Management Board are entitled to subscribe to Board's General Provident Fund/Pension Scheme or Contributory Provident Fund scheme managed by BBMB Contributory and General Provident Fund Trust. Half of the Trustees represent the Management and other half represents Employees. The position of Balances of Bhakra Beas Management Board Employees Contributory and General Provident Fund under different prescribed schemes is given below:-

(Rs. in Lakhs)

Sr. No.	Name of Securities/Instruments	Amount
1	Central Govt. Securities	5736.30
2	Govt. of India Special Deposit Scheme A/c	6678.99
3	Adhar Housing Finance ltd	200.00
4	Aditya Birla Finance	400.00
5	Ajmer Vidyut Vitran Nigam Limited	400.00
6	Andhra Pradesh State Dev. Loan A/c	2079.90
7	Assam State Development Loan	1148.84
8	Bihar State Development Loan A/c	780.00
9	Capital/IDFC First Ltd.	800.00
10	Chhattisgarh State Power DC Ltd.	1073.50
11	Credila Financial Service Pvt Ltd.	400.00
12	Cholamandlam Investment & Finance Ltd.	800.00

13	Dewan Housing Finance Ltd.	508.39
14	Edelweiss Finvest Pvt. Ltd.	600.00
15	Federal Bank Limited	100.00
16	Fullertone India Credit Co. Ltd.	200.00
17	Food Corporation of India Bonds	700.00
18	Gujrat State Development Loan A/c	308.00
19	Gujrat State Investment Ltd.	800.00
20	The Great Eastern Shipping Company	300.00
21	Haryana State development Loan	2140.23
22	HP State Electricity Board Bond	250.00
23	ICICI Securities Primary Dealership Ltd.	200.00
24	IIFL Finance Ltd.	1070.00
25	IL&FS Financial Service Ltd	456.51
26	IL&FS Transportation network Ltd	1550.00
27	India Bulls Financial Services Ltd.	310.00
28	Indian Railway Finance Corp Bond	300.00
29	J&K State Development Loan A/c	1190.30
30	Jaipur Vidyut Vitran Nigam Ltd. (JVVNL)	638.00
31	JM Financial Product Ltd.	500.00
32	JM Financial Credit Solutions Ltd.	740.00
33	Karnataka SDL	900.00
34	L&T Infrastructure Finance Co. Ltd Bond	780.00
35	L&T Housing Finance Ltd	200.00
36	Mizoram SDL	72.70
37	Mahuva Bharatpur Expressways Ltd.-2027	250.00
38	ONGC Petro Additions Ltd.	800.00
39	Patel KNR Heavy Infra ltd	1000.00
40	PNB Housing Finance Ltd Bond	250.00
41	Power Finance Corp. Ltd. Bond	1250.00
42	Punjab State Development Loan A/c	1600.00
43	Piramal Capital & Housing Finance	140.16
44	PNB Metlife India Insurance Co. Ltd.	400.00

45	Telangana State Development Account	586.97
46	Rajasthan Rajya Vidut Prasaran Nigam Ltd.	400.00
47	Rajasthan State Development Loan A/c	1712.28
48	Reliance Capital Ltd. Bond	900.00
49	Rural Electrification Corp. Ltd. Bond	978.76
50	Shri Ram City Union Finance Ltd.	600.00
51	Sikkam State Development Loan A/C	450.00
52	Sintex industries ltd	600.00
53	Steel Authority India Ltd	200.00
54	Tamil Nadu Generation & Distribution Co.	500.00
55	Tamil Nadu Uday Bond	2240.00
56	Tamilnadu State Development Loan	561.65
57	Tata Capital Financial Services Ltd	1450.00
58	Tata Cleantech Capital Limited	400.00
59	Tourism Finance Corporation Ltd.	132.00
60	UP Power Corporation Ltd	800.00
61	UP State Development Loan A/c	4408.50
62	West Bengal State Development Loan A/c	2894.60
	Total	**60816.58**
Mutual Fund		
Total Mutual Fund		**1542.97**
ETF		
Total ETF		**260.30**
FDR		
1	FDR HDFC	**313.00**
	Total Investment up to 31.03.2023	**62932.85**

4.5 Audit

The Internal Audit of the various Divisions/Offices of Bhakra Beas Management Board is conducted by the Financial Adviser and Chief Accounts Officer. The statutory audit is conducted by the Accountant General, Audit, Punjab.

4.6 Personal Ledger Account (PLA)

Under the provisions of Section 79(5) of the Punjab Reorganization Act, 1966, the Partner State Governments and State Electricity Boards are required to provide necessary funds to BBMB to meet all the expenses required for the discharge of its functions, including operation and maintenance charges for works of Irrigation Wing (dams, canals and other civil structures) and for works of Power Wing (power plants, transmission network, etc.), respectively. Since BBMB does not have any working capital to meet the operation and maintenance charges, it was decided in the meeting held by the Secretary, Irrigation & Power, Government of India, New Delhi on 14.2.1967 to provide these funds to Personal Ledger Account (PLA) to be opened in the books of Government of India to which the participating States would contribute appropriate amounts as per their share after making provision in their respective budgets. As on 31.03.2023 balance in Personal Ledger Account was Rs. 18099.43 Lakhs only.

भाखड़ा ब्यास
राष्ट्र गौरव

अध्याय-5

Chapter-5

परिचालन कार्य-निष्पादन

Operational Performance

5.1 POWER WING

The power generation at BBMB power stations and its transmission to various partners/ beneficiaries is under the Power Wing of the BBMB. The integrated operation of the system requires real time monitoring of the power system so as to have effective control of the frequency, voltage and loading on the system and to optimally utilize the generation resources. These functions are performed by the Power Regulation Directorate, Chandigarh through a state of the art Load Dispatch Centre at Chandigarh.

5.1.1 Energy Generation

The total energy generation of BBMB generating stations during 2022-23 was 10835.587 MU (including of 11.07 MU deemed generation at Ganguwal & Kotla Powerhouses) which is 12.29 % more than the Annual Generation Target of 9650 MU fixed by the CEA for the year 2022-23. The annual energy generation at each BBMB Power House for the year 2022-23 is indicated in ***Fig.1*****.** The annual target and actual energy generation during the year 2013-14 to 2022-23 are depicted in ***Fig.2***.

5.1.2 Peak Generation

BBMB strives to meet peaking demands of partner states. Typical daily generation curves of BBMB Power Houses for monsoon, winter, mild winter & hot season periods are depicted in ***Fig.3***.

5.1.3 Availability of Power Houses

The annual availability factor of Bhakra Left Bank and Bhakra Right Bank Power Houses was 99.99% and 100% respectively. At Pong Power House, the availability was 96.80%. The availability at Dehar Power Houses was 98.31%.The availability factors of Ganguwal and Kotla Power Houses were 99.80% and 99.91% respectively. The plant availability factors of BBMB Power Houses are depicted in ***Fig.4*****.** Overall availability of BBMB Power Houses was 98.99%.

5.1.4 Energy transmitted

Energy transmitted from BBMB Power houses (to the various partners/beneficiaries) was 10694.02 MUs. and energy booked to the partners/beneficiaries is 10566.30 MUs (these figures does not include deemed generation at Ganguwal & Kotla Power houses) as indicated in ***Fig.5***. The difference in actual energy sent out and energy booked to the partner state/ beneficiaries have been accounted for under Deviation Settlement Mechanism (DSM) since generating stations of BBMB have come under the ambit of ABT w.e.f. June 2016. Rs. 26,57,87,870/- is the net receivable under Deviation Settlement Mechanism (DSM) for the year 2022-23. The auxiliary consumption in BBMB Powerhouses has been 26.1993 MU (0.2420%) and transformation losses have been 104.2977MUs (0.9635%).

5.1.5 Availability of Transmission

The availability of 220 KV and 400 KV Transmission System of BBMB has been 99.80% from 01.04.2022 to 31.03.2023

5.1.6 Diversion of Water from Nangal Hydel Channel (NHC) to Anandpur Sahib Hydel Channel (ASHC)

As decided in the 184th meeting of the Board held on 23.12.2003, whenever any machine(s) at Ganguwal and/or Kotla Power House (s) is/are on shutdown, the excess water after meeting the irrigation requirements of Punjab & Haryana through Nangal Hydel Channel (NHC) shall be diverted to Anandpur Sahib Hydel Channel (ASHC). Further, the loss of generation at Ganguwal/ Kotla Power houses due to diversion shall be fully compensated by PSPCL (erstwhile PSEB) and the balance increase in generation at Anandpur Sahib Hydel Project after accounting for the loss of generation shall be equally shared between BBMB &PSPCL (erstwhile PSEB). The total credit of generation at Ganguwal & Kotla Power Houses due to diversion of water shall be treated as deemed generation of Ganguwal/ Kotla Power Houses. Further the adjustment of deemed generation amongst the partner states is done as per the decision taken in 136th Power Sub – Committee meeting of BBMB held on 23.04.2019.

In pursuance of the above, the deemed generation at Ganguwal/Kotla Power house during 2022-23 is as under:-

(All Figs. in MU)

Period	Loss of Generation at Ganguwal & Kotla	Excess Generation at ASHP	Deemed Generation	Gain to BBMB
4/22 to 3/23	0	22.13	11.07	11.07

5.1. 7 System Load Dispatch Center (SLDC)

The System Load Dispatch Centre (SLDC), of Bhakra Beas Management Board is assigned with the responsibility of round the clock monitoring. Operation and control of BBMB Transmission and Generation Assets. BBMB SLDC is equipped with State of Art Supervisory Control & Data Acquisition and Energy Management System (SCADA/ EMS) and a dedicated Optical Fiber based Communication System, which helps the SLDC Engineers in discharging their responsibilities efficiently, by taking informed decisions duly assisted and guided by the latest technologies. Further, SCADA equipment is in process of upgradation under ULDC Scheme.

BBMB has also established its backup SLDC by sharing the infrastructure with PSTCL, thereby providing a unique and cost effective solution to ensure continuity of services in case of any disaster. By sharing the backup of SLDC with PSTCL, BBMB saved about Rs. 5 Crores in the project cost for itself as well as for PSTCL. BBMB

has also equipped its all the important Generating Stations and Sub- Stations with the State of Art RTUs.

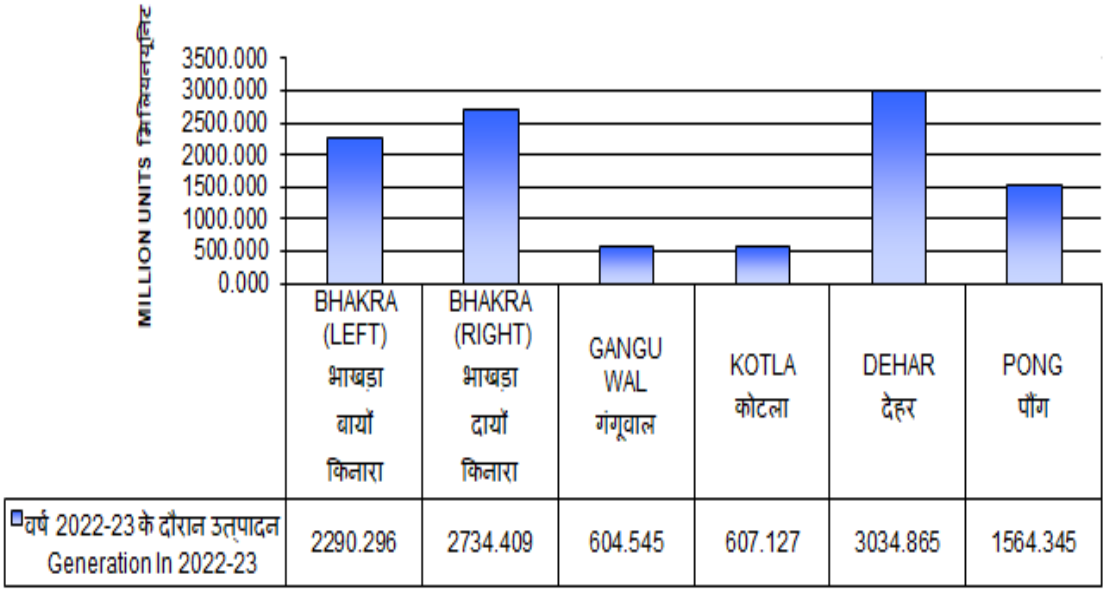
In addition, all BBMB Power Houses and Sub-Stations have been provided with dedicated SCADA remote consoles. These remote consoles are connected to BBMB SLDC through a dedicated communication link. With the help of these remote consoles the Sub-station/Power houses officers/staff can monitor the status of various power system devices installed in their own Sub-station as well as other Sub-stations of BBMB. In addition to this the reports pertaining to each Power House and Sub-station can be generated by their Control Room Engineers / Staff.

Through their concerted efforts, the Engineers at BBMB SLDC have pioneered various innovative techniques in Power System Monitoring, Operation and Control and continue to march forward towards their goal for implementation of Smart Grid in BBMB.

चित्र-1
Figure-1

बीबीएमबी के विद्युतघरों में वार्षिक सकल ऊर्जा उत्पादन वर्ष 2022-23
ANNUAL GROSS ENERGY GENERATION AT BBMB POWER HOUSES 2022-23

कुल उत्पादन 10835.587 एमयू
TOTAL GENERATION 10835.587MU



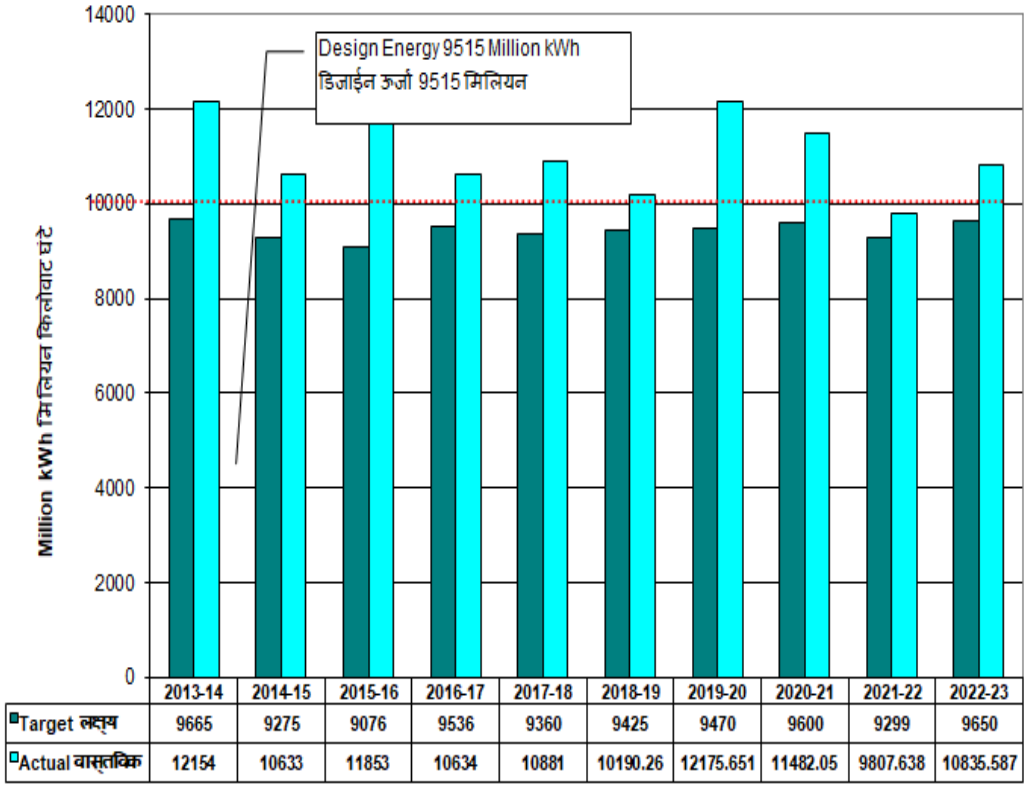
	BHAKRA (LEFT) भाखड़ा बायाँ किनारा	BHAKRA (RIGHT) भाखड़ा दायाँ किनारा	GANGU WAL गंगूवाल	KOTLA कोटला	DEHAR देहर	PONG पौंग
वर्ष 2022-23 के दौरान उत्पादन Generation In 2022-23	2290.296	2734.409	604.545	607.127	3034.865	1564.345

गंगुवाल एवं कोटला विद्युतघरों से कुल उत्पादन में डिम्ड उत्पादन के रूप में 11.07 एमयूज शामिल है । (गंगुवाल =5.54 एमयू एवं कोटला= 5.53 एमयू)
The total generation figures at Ganguwal & Kotla Power House includes 11.07MUs as Deemed Generation (Ganguwal=5.54MU & Kotla= 5.53MU)

चित्र-2
Figure - 2

वर्ष 2013-2014 से 2022-2023 तक ऊर्जा उत्पादन के सम्बन्ध में लक्ष्य उपलब्धियाँ

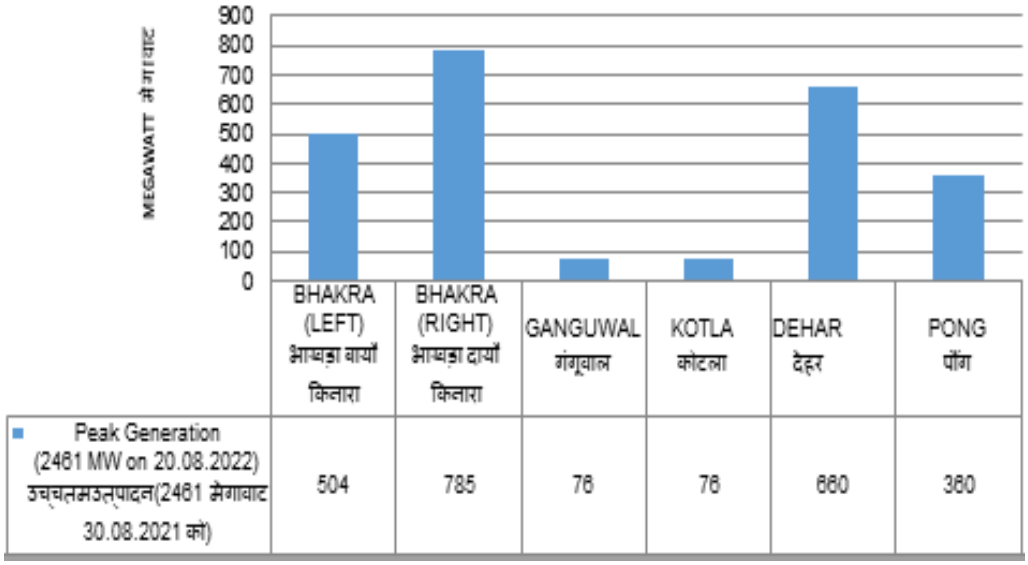
TARGET/ACHIEVEMENTS IN RESPECT OF ENERGY GENERATION DURING THE YEAR 2013-2014 TO 2022-2023



	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Target लक्ष्य	9665	9275	9076	9536	9360	9425	9470	9600	9299	9650
Actual वास्तविक	12154	10633	11853	10634	10881	10190.26	12175.651	11482.05	9807.638	10835.587

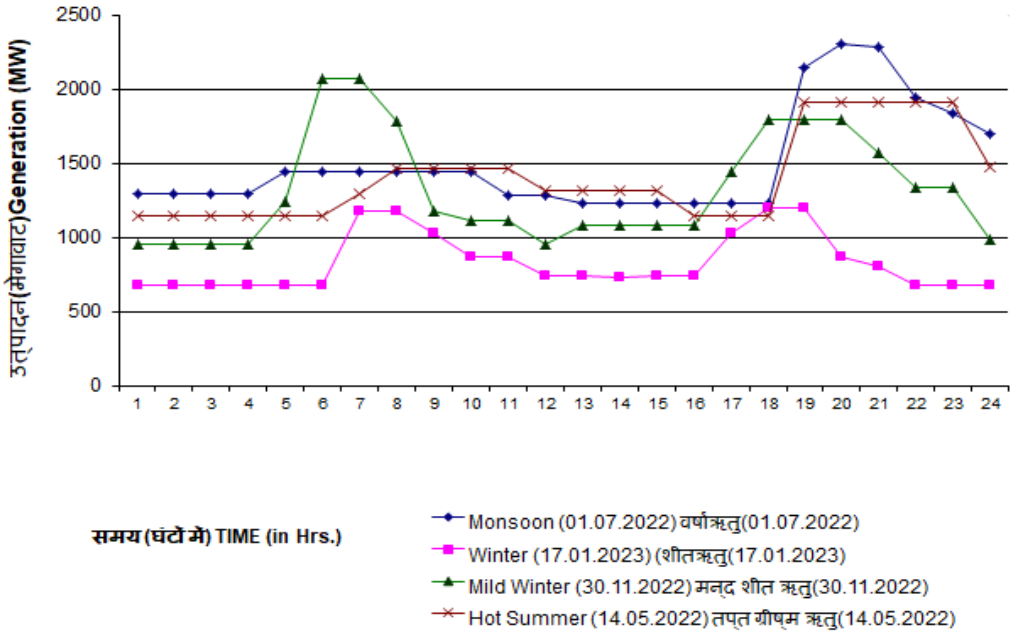
चित्र-3
Figure-3

वर्ष 2022-23 के दौरान बीबीएमबी विद्युत घरों का उच्चतम उत्पादन (20.08.2022 को)
PEAK GENERATION OF BBMB POWER HOUSES DURING THE YEAR 2022-23
(ON 20.08.2023)



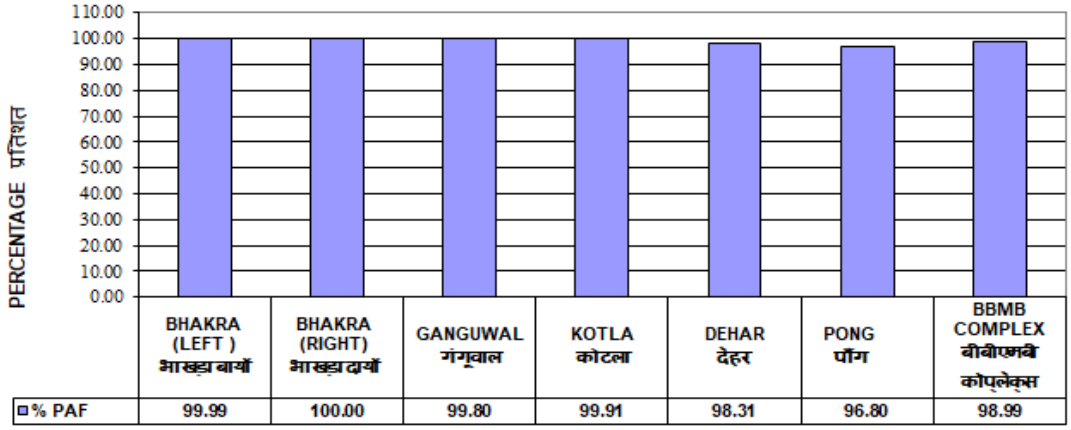
चित्-3-ए
Fig. 3A

वर्ष 2022-23 के दौरान बीबीएमबी के प्रतीकात्मक दैनिक उत्पादन वक्र
TYPICAL DAILY GENERATION CURVES OF BBMB DURING 2022-23



चित्र-4
Figure 4

वर्ष 2022-23 के दौरान बीबीएमबी के विद्युत घरों का संयन्त्र उपलब्धता
PLANT AVAILABILITY FACTOR OF BBMB POWER HOUSES DURING THE YEAR 2022-23



संयन्त्र उपलब्धता गुणक(पीएएफ) प्रतिशतता
Plant Availability Factor (PAF) %age=

$$\frac{\text{वर्ष में कुल घंटे- (अनिवार्य घंटों की कटौती + आरएमएण्ड्यू अवधि को छोड़कर योजनाबद्ध घंटों की कटौती + आरएमएण्ड्यू अवधि)}}{\text{वर्ष में कुल घंटे-आरएमएण्ड्यू अवधि के घंटे}} \quad \text{Total hrs in a year - (Forced outage hrs+Planned outage hrs excluding RM\&U Period + RM\&U Period)}$$

X 100

चित्र-5

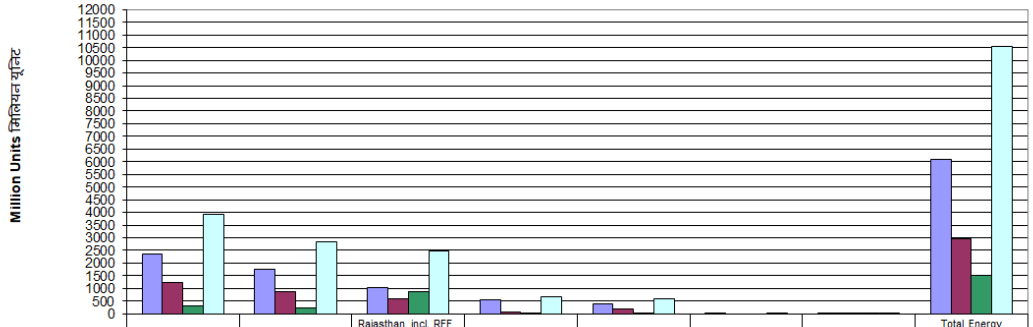
Figure-5

वर्ष 2022-23 के दौरान बीबीएमबी के विद्युत-घरों से भागीदार राज्यों/लाभार्थियों को पारेषित ऊर्जा

ENERGY SCHEDULED TO PARTNER STATES/BENEFICIARIES FROM BBMB POWER HOUSES DURING THE YEAR 2022-23.

चित्र एम यू में

Figure in MU



	PUNJAB पंजाब	HARYANA हरियाणा	Rajasthan incl. RFF राजस्थान आरएफएफ सहित	UT CHD यूटी चण्डीगढ	HP incl. Old HP एचपी ओल्ड एचपी सहित	NFL एनएफएल	Irri. Wing सिंचाई खण्ड	Total Energy Scheduled कुल ऊर्जा अनुसूचित
Bhakra Complex भाखड़ा कम्पलेक्स	2368.68	1735.61	1013.17	563.46	376.5	25.71	20.05	6103.18
Dehar Power House देहर पावर हाऊस	1215.59	880.31	586.67	82.13	168.67	0	13.07	2946.44
Pong Power House पौंग पावर हाऊस	324.07	234.69	881.78	21.86	44.92	0	9.36	1516.68
TOTAL कुल	3908.34	2850.61	2481.62	667.45	590.09	25.71	42.48	10566.30

1. आंकड़े अनुसूचित ऊर्जा पर आधारित हैं जैसा कि एनआरपीसी द्वारा जारी अनंतिम आरईए में उल्लेख किया गया है क्योंकि अंतिम आरईए अभी तक जारी नहीं किए गए हैं।

2. बीबीएमबी विद्युत घरों से भेजी गई कुल ऊर्जा 10694.02 एमयू है और भागीदार राज्यों/लाभार्थियों को बुक की गई ऊर्जा शेडयूल /बुक की गई ऊर्जा 10566.30 एमयू है। भागीदार राज्य/लाभार्थियों को भेजी गई वास्तविक ऊर्जा और निर्धारित ऊर्जा में अंतर को विचलन निपटान तंत्र (डीएसएम) के तहत हिसाब में लिया गया है क्योंकि बीबीएमबी के उत्पादन स्टेशन जून 2016 से एबीटी के दायरे में आ गए हैं।

1. **Figures are based on scheduled energy as mentioned in provisional REAs issued by NRPC as final REAs have not been issued yet.**

2. **Total energy sent out from BBMB Power Houses is 10694.02 MUs and energy scheduled/energy booked to the partner states/beneficiaries is 10566.30 MUs. The difference in actual energy sent out and energy scheduled to the partner State/beneficiaries has been accounted for under Deviation Settlement Mechanism (DSM) since generating stations of BBMB have come under the ambit of ABT w.e.f June 2016.**

5.2 Irrigation Wing

5.2.1 Position of Reservoirs

Control and Operation of reservoirs and regulation of water to various partner States/beneficiaries is under Irrigation Wing of the BBMB.

Bhakra Reservoir

(a) Maximum reservoir level EL1673.90 ft. was attained on 11.10.2022.

(b) Minimum reservoir level EL1294.84 ft. was attained on 29.06.2022.

(c) Total Inflows including diversion through BSL System from 21.05.2022 to 20.05.2023 were 15.591 BCM.

(d) Total outflows were 15.605 BCM.

Pong Reservoir

a) Maximum reservoir level of EL1385.24 ft. was attained on 29.09.2022.

b) Minimum reservoir level of EL1294.84 ft. was attained on 29.06.2022.

c) Total inflows were 8.800 BCM.

d) Total outflows were 8.454 BCM.

5.2.2 Cost of Water supply

The cost of water supply to Partner States works out to be 15.50 paise / m3

5.2.3 Regulation of Water Supplies and Water Account

For preparation of water account, the year is divided into two periods i.e. the filling period from 21st May to 20th Sept. and the depletion period from 21st Sept. to 20th May of next year. The water accounts are prepared separately for the filling period and depletion period. The excess/shortages of one period are not carried over to the next period. The excess/shortages of one period are not carried over to the next period. The distribution/shares and deliveries to the partner States alongwith excess/ shortage received by such State out of Satluj as well as Ravi-Beas waters for the period 21.9.2022 to 20.05.2023 and the water releases for Delhi Jal Board have been depicted in the **Fig 6 to 13**. The figures indicated in these charts have been taken from the water accounts circulated to the partner States from time to time.

The releases from Bhakra and Pong reservoirs are decided by the Technical Committee (comprising Whole Time Members of BBMB, Technical Members/Directors of State Electricity Boards/State Transmission Utilities and Chief Engineers of Irrigation Departments of the partner States and Members from CWC under the chairmanship of Chairman, BBMB) in the monthly meetings by taking into account the requirements of Irrigation and Power, reservoir levels and the inflows.

The share distribution for the various partner States and the water required to be delivered at various Inter-State Contact Points both out of Satluj and Ravi-Beas waters out of approved releases from Reservoirs are intimated through Canal Wire/Wireless Messages to the concerned officers of the partner States on 10-daily basis.

The water supplied to the partner States during the filling/depletion period is given in Figures detailed as under:-

1. Water supplied to Punjab out of Satluj and Ravi -Beas waters. - **Fig. 6 & 7**
2. Water supplied to Haryana out of Satluj and Ravi - Beas waters. - **Fig. 8 & 9**
3. Water supplied to Rajasthan out of Satluj and Ravi - Beas waters. - **Fig. 10 to 12**
4. Supply of Water to Delhi Jal Board - **Fig. 13**

Total water supplied to the States from 21.09.2022 to 20.05.2023 has been as under:-

(All figures in million acre ft)

State	**Satluj**	**Ravi-Beas**	**Total**
Punjab	4.136	5.785	9.921
Haryana	3.946	1.943	5.889
Rajasthan	1.137	8.826	9.963
Delhi Jal Board	0	0.294	0.294
Total	9.219	16.848	26.067

Note:- The figures are yet to be reconcile with Partner States.

चित्र 6

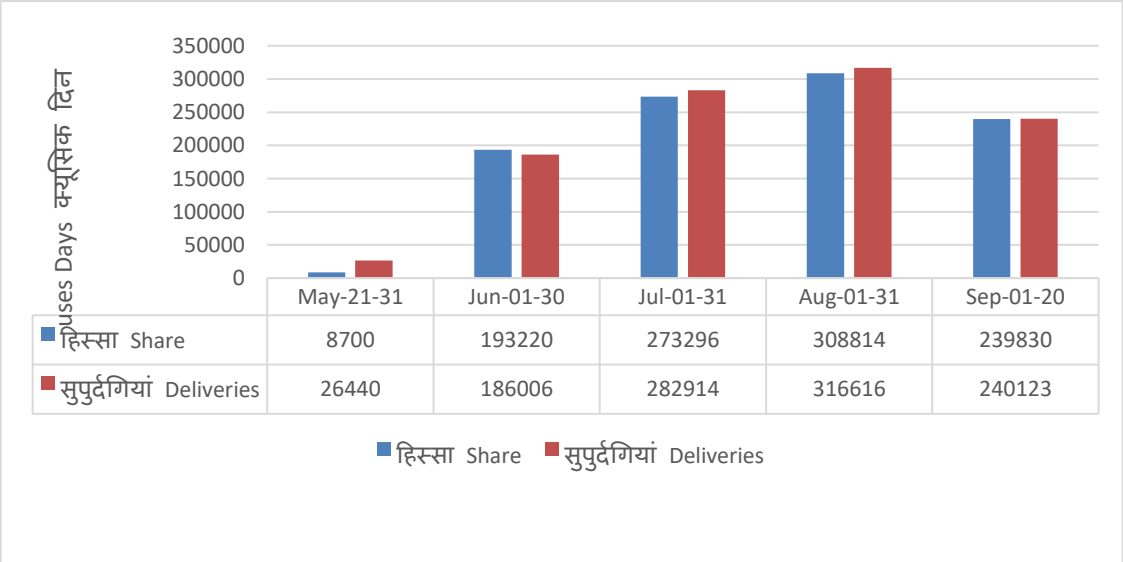
Figure-6

दिनांक 21.09.2022 से 20.05.2023 तक की अवधि के लिए सतलुज जल से पंजाब को सप्लाई किए गए जल की स्थिति को दर्शाने वाली विवरणिका

Statement showing position of water supplies to Punjab out of water for the period from 21.09.2022 to 20.05.2023

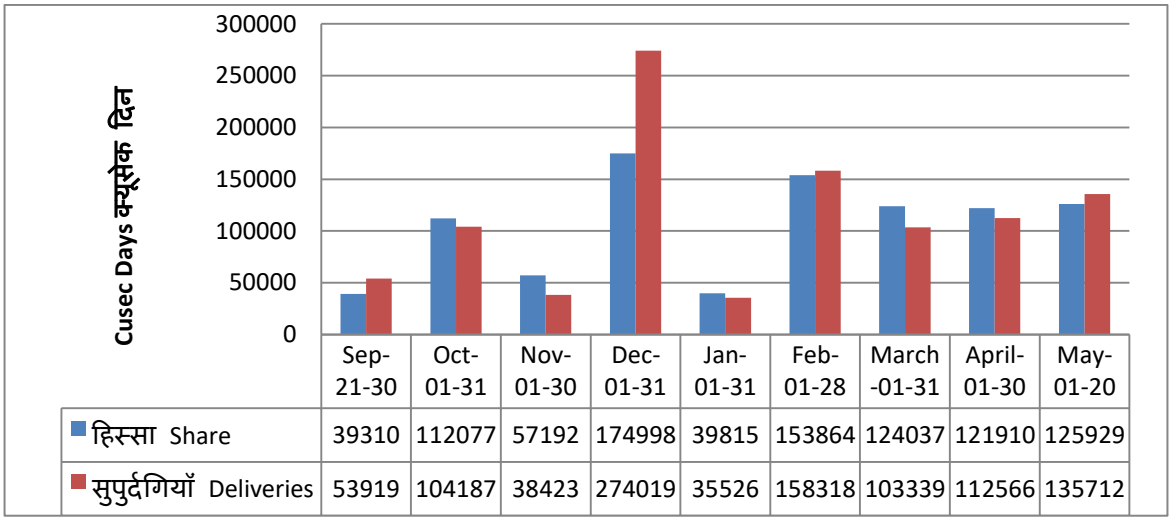
भराई अवधि(21.05.2022से 20.09.2022)

Filling Period (21.05.2022 to 20.09.22)



रिक्तिकरण अवधि 21.09.2022)से 20.05.2023

Depletion Period (21.09.2022 to 20.05.2023



नोट:-

1.सभी आंकड़े क्यूसिक दिनों में।

2.सभी सुपुर्दगियॉं आवश्यकता अनुसार तकनीकी समिति की बैठक में लिए गए निर्णय अनुसार।

3. पंजाब को की गई सुपुर्दगियों में रोपड़ के डाउनस्ट्रीम की गई कुछ आपत्तियां भी शमिल हैं जो पंजाब को रोपड़ पर पहले ही बुक की जा चुकी है।

4.21.09.2022 से 20.05.2023 तक आंकड़ा का भागीदार राज्यों से मिलान किया जाना है।.

Note:-

1. All Figures are in cusec days.

2. The deliveries have been made as per requirements decided in Technical Committee Meeting.

3. The deliveries to Punjab also include some supplies made d/s Ropar which have already been booked to Punjab at Ropar.

4. The figures from 21.09.2022 to 20.05.2023 are yet to be reconcile with Partner States

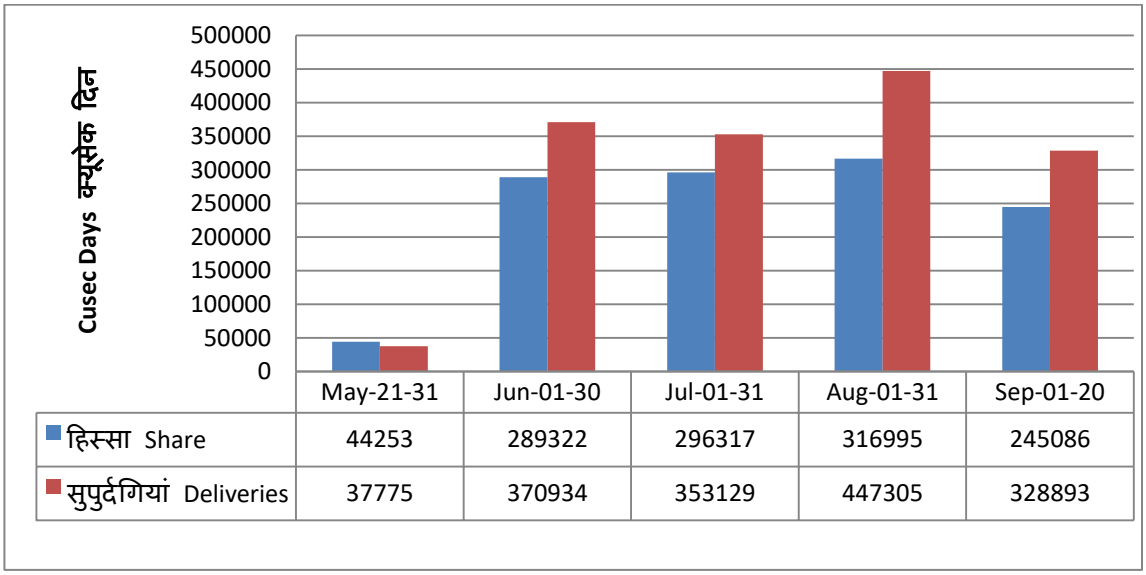
चित्र 7 Fig. 7

दिनांक 21.9.2022 से 20.05.2023 तक की अवधि के लिए रावी ब्यास से पंजाब को सप्लाई किए गए जल की स्थिति को दर्शाने वाली विवरणिका

Statement showing position of water supplies to Punjab out of Ravi-Beas waters for the period from 21.9.2022 to 20.05.2023

भराई अवधि(21.05.2022से 20.09.2022)

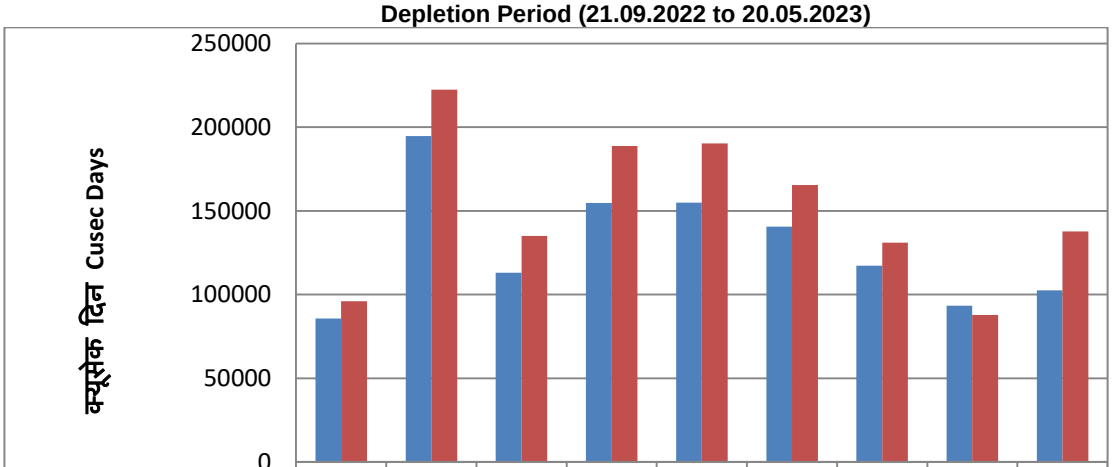
Filling Period (21.05.2022 to 20.09.2022



	May-21-31	Jun-01-30	Jul-01-31	Aug-01-31	Sep-01-20
हिस्सा Share	44253	289322	296317	316995	245086
सुपुर्दगियां Deliveries	37775	370934	353129	447305	328893

रिक्तिकरण अवधि 21.09.2022)से 20.05.2023)

Depletion Period (21.09.2022 to 20.05.2023)



	Sep-21-30	Oct-01-31	Nov-01-30	Dec-01-31	Jan-01-31	Feb-01-28	March -01-31	April-01-30	May-01-20
हिस्सा Share	85636	194621	112980	154799	154898	140525	117307	93347	102543
सुपुर्दगियाँ Deliveries	95945	222449	135014	188768	190324	165362	131112	87765	137757

नोट:-

1.सभी आंकड़े क्यूसिक दिनों में।

2.सभी सुपुर्दगियाँ आवश्यकता अनुसार तकनीकी समिति की बैठक में लिए गए निर्णय अनुसार।

3. पंजाब को की गई सुपुर्दगियों में रोपड़ के डाउनस्ट्रीम की गई कुछ आपतियां भी शमिल हैं जो पंजाब को रोपड़ पर पहले ही बुक की जा चुकी है।

4.21.09.2022 से 20.05.2023 तक आंकड़ा का भागीदार राज्यों से मिलान किया जाना है।.

Note:-

(1) All figures are in cusec days.

(2)The deliveries have been made as per requirements decided in Technical Committee Meeting

(3) The deliveries to Punjab also include some supplies made d/s Ropar which have already been booked to Punjab at Ropar.

(4). The figures from 21.09.2022 to 20.05.2023 are yet to be reconcile with Partner States.

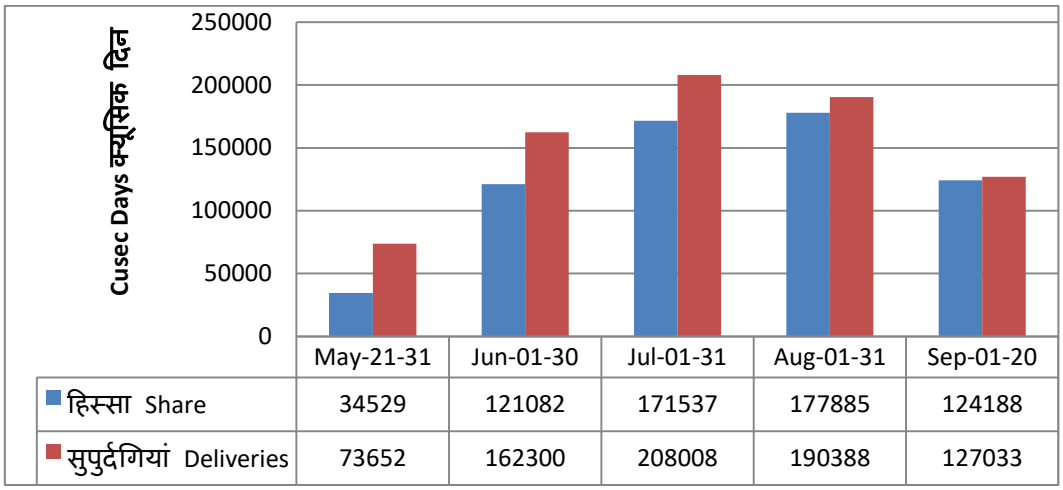
चित्र 8 Fig. 8

दिनांक 21.9.2022 से 20.05.2023 तक की अवधि के लिए सतलुज जल से हरियाणा को सप्लाई किए गए जल की स्थिति को दर्शाने वाली विवरणिका

Statement showing position of water supplies to Haryana out of Satluj waters for the period from 21.9.2022 to 20.05.2023

भराई अवधि(21.05.2022से 20.09.2022)

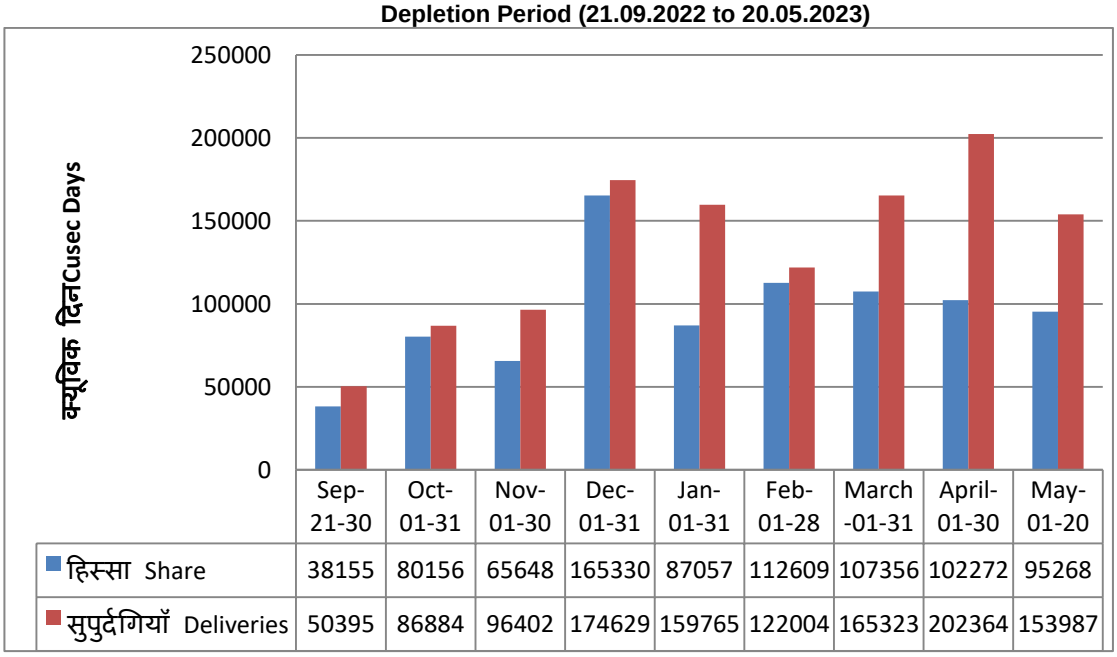
Filling Period (21.05.2022 to 20.09.22



	May-21-31	Jun-01-30	Jul-01-31	Aug-01-31	Sep-01-20
हिस्सा Share	34529	121082	171537	177885	124188
सुपुर्दगियां Deliveries	73652	162300	208008	190388	127033

रिक्तिकरण अवधि 21.09.2022)से 20.05.2023)

Depletion Period (21.09.2022 to 20.05.2023)



	Sep-21-30	Oct-01-31	Nov-01-30	Dec-01-31	Jan-01-31	Feb-01-28	March -01-31	April-01-30	May-01-20
हिस्सा Share	38155	80156	65648	165330	87057	112609	107356	102272	95268
सुपुर्दगियॉं Deliveries	50395	86884	96402	174629	159765	122004	165323	202364	153987

नोट:-

1.सभी आंकड़े क्यूसिक दिनों में।

2.सभी सुपुर्दगियॉं आवश्यकता अनुसार तकनीकी समिति की बैठक में लिए गए निर्णय अनुसार।

3.21.09.2022 से 20.05.2023 तक आंकड़ेा का भागीदार राज्यों से मिलान किया जाना है।.

Note:-

1. All Figures are in cusec days.

2. The deliveries have been made as per requirements decided in Technical Committee Meeting.

3. The figures from 21.09.2022 to 20.05.2023 are to be reconcile with Partner States

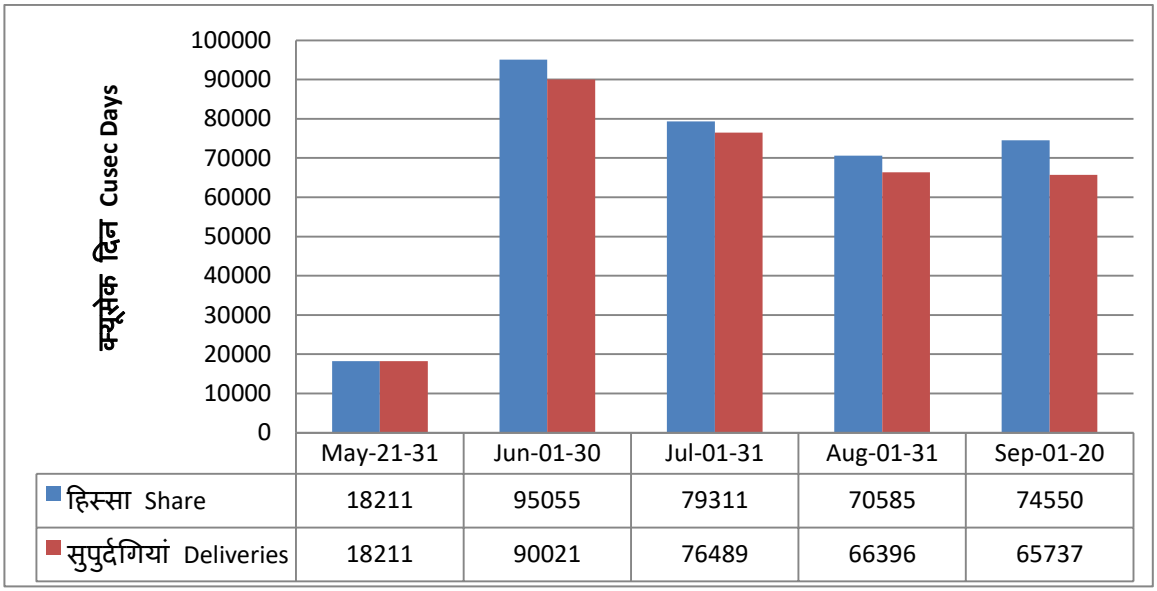
चित्र 9 Fig. 9

दिनांक 21.9.2022 से 20.05.2023 तक की अवधि के लिए रावी-ब्यास जल से हरियाणा को सप्लाई किए गए जल की स्थिति को दर्शाने वाली विवरणिका

Statement showing position of water supplies to Haryana out of Ravi-Beas water for the period from 21.9.2022 to 20.05.2023.

भराई अवधि(21.05.2022से 20.09.2022)

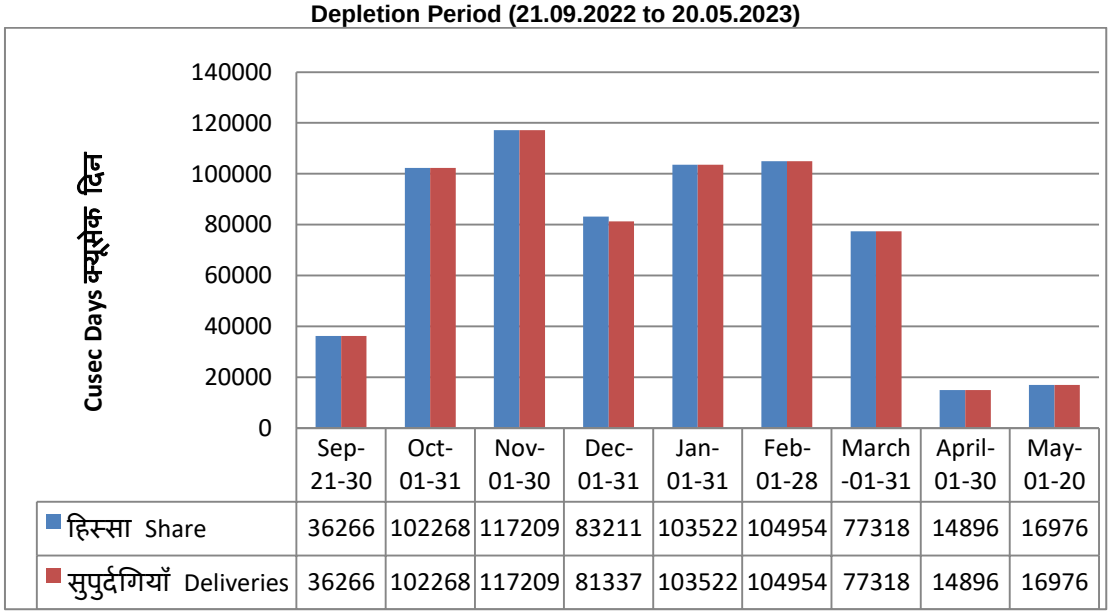
Filling Period (21.05.2022 to 20.09.22)



	May-21-31	Jun-01-30	Jul-01-31	Aug-01-31	Sep-01-20
हिस्सा Share	18211	95055	79311	70585	74550
सुपुर्दगियां Deliveries	18211	90021	76489	66396	65737

रिक्तिकरण अवधि 21.09.2022)से 20.05.2023)

Depletion Period (21.09.2022 to 20.05.2023)



	Sep-21-30	Oct-01-31	Nov-01-30	Dec-01-31	Jan-01-31	Feb-01-28	March-01-31	April-01-30	May-01-20
हिस्सा Share	36266	102268	117209	83211	103522	104954	77318	14896	16976
सुपुर्दगियाँ Deliveries	36266	102268	117209	81337	103522	104954	77318	14896	16976

नोट:-

1.सभी आंकड़े क्यूसिक दिनों में।

2.सभी सुपुर्दगियाँ आवश्यकता अनुसार तकनीकी समिति की बैठक में लिए गए निर्णय अनुसार।

3.21.09.2022 से 20.05.2023 तक आंकड़ो का भागीदार राज्यों से मिलान किया जाना है।.

Note:-

1. All Figures are in cusec days.

2. The deliveries have been made as per requirements decided in Technical Committee Meeting.

3 The figures from 21.09.2022 to 20.05.2023 are to be reconcile with Partner States.

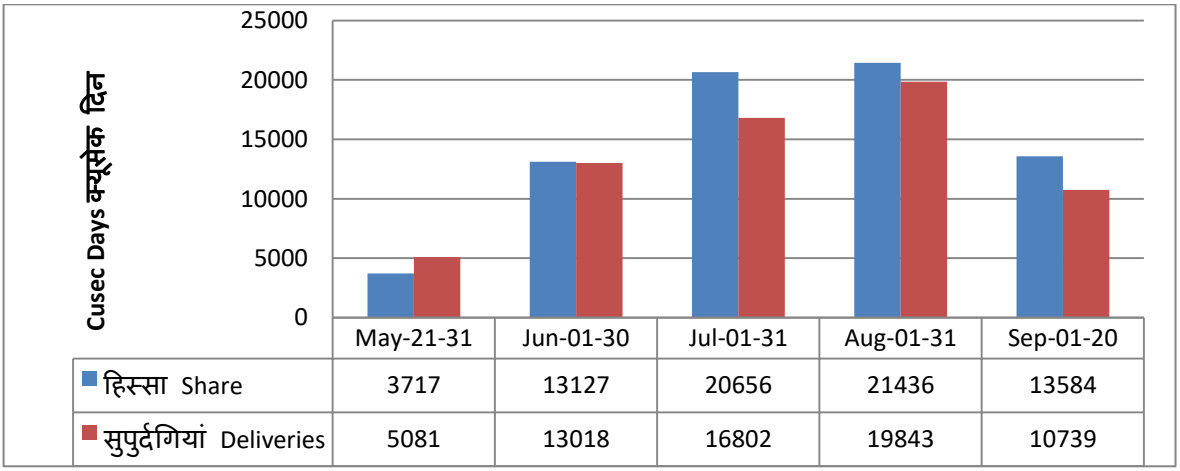
चित्र 10 Fig. 10

दिनांक 21.9.2022 से 20.05.2023 तक की अवधि के लिए सतलुज जल की हरियाणा के रास्ते राजस्थान को हुई सप्लाई की स्थिति को दर्शाने वाली विवरणिका

Statement showing position of water supplies to Rajasthan via Haryana out of Satluj water for the period from 21.9.2022 to 20.05.2023

भराई अवधि(21.05.2022से 20.09.2022)

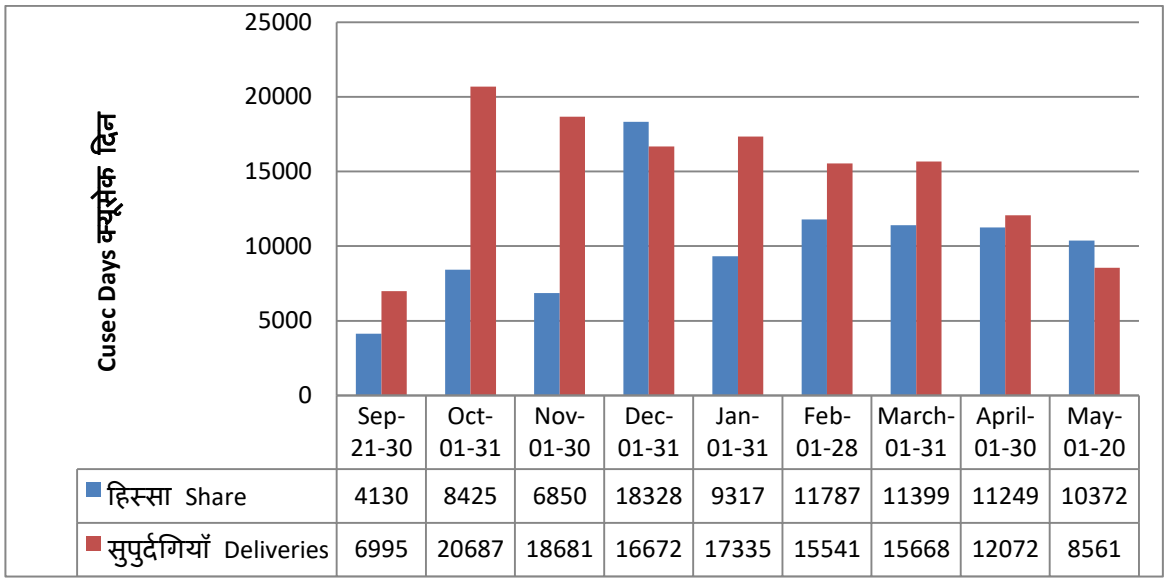
Filling Period (21.05.2022 to 20.09.22)



	May-21-31	Jun-01-30	Jul-01-31	Aug-01-31	Sep-01-20
हिस्सा Share	3717	13127	20656	21436	13584
सुपुर्दगियां Deliveries	5081	13018	16802	19843	10739

रिक्तिकरण अवधि 21.09.2022)से 20.05.2023)

Depletion Period (21.09.2022 to 20.05.2023)



	Sep-21-30	Oct-01-31	Nov-01-30	Dec-01-31	Jan-01-31	Feb-01-28	March-01-31	April-01-30	May-01-20
हिस्सा Share	4130	8425	6850	18328	9317	11787	11399	11249	10372
सुपुर्दगियाँ Deliveries	6995	20687	18681	16672	17335	15541	15668	12072	8561

नोट:-

1.सभी आंकड़े क्यूसिक दिनों में।

2.सभी सुपुर्दगियाँ आवश्यकता अनुसार तकनीकी समिति की बैठक में लिए गए निर्णय अनुसार।

3.21.09.2022 से 20.05.2023 तक आंकड़ो का भागीदार राज्यों से मिलान किया जाना है।.

Note:-

1. All Figures are in cusec days.

2. The deliveries have been made as per requirements decided in Technical Committee Meeting.

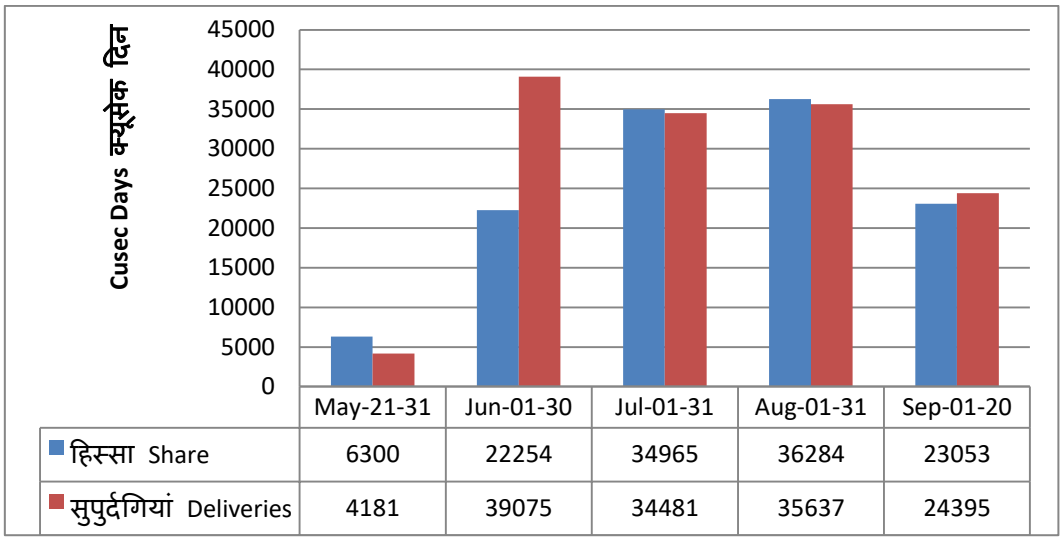
3 The figures from 21.09.2022 to 20.05.2023 are to be reconcile with Partner States.

चित्र 11 Fig. 11

दिनांक 21.9.2022 से 20.05.2023 तक की अवधि के लिए सतलुज जल की पंजाब के रास्ते राजस्थान को हुई सप्लाई की स्थिति को दर्शाने वाली विवरणिका

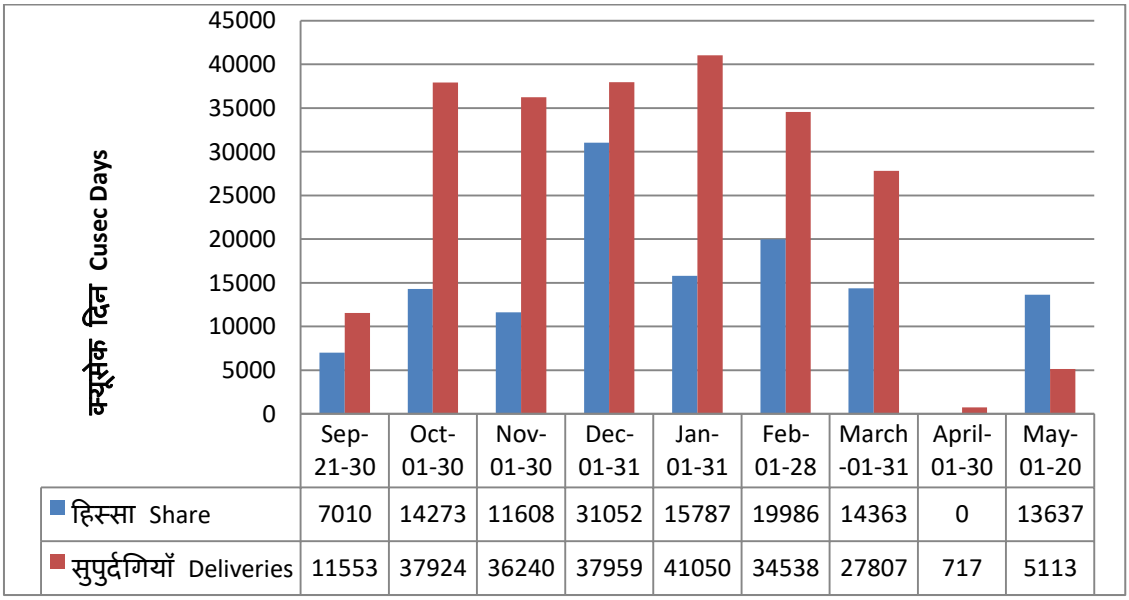
Statement showing position of water supplies to Rajasthan via Punjab out of Satluj water for the period from 21.9.2022 to 20.05.2023

भराई अवधि(21.05.2022से 20.09.2022)
Filling Period (21.05.2022 to 20.09.22)



	May-21-31	Jun-01-30	Jul-01-31	Aug-01-31	Sep-01-20
हिस्सा Share	6300	22254	34965	36284	23053
सुपुर्दगियां Deliveries	4181	39075	34481	35637	24395

रिक्तिकरण अवधि 21.09.2022)से 20.05.2023)
Depletion Period (21.09.2022 to 20.05.2023)



	Sep-21-30	Oct-01-30	Nov-01-30	Dec-01-31	Jan-01-31	Feb-01-28	March-01-31	April-01-30	May-01-20
हिस्सा Share	7010	14273	11608	31052	15787	19986	14363	0	13637
सुपुर्दगियाँ Deliveries	11553	37924	36240	37959	41050	34538	27807	717	5113

नोट:-

1.सभी आंकड़े क्यूसिक दिनों में।

2.सभी सुपुर्दगियाँ आवश्यकता अनुसार तकनीकी समिति की बैठक में लिए गए निर्णय अनुसार।

3. 21.09.2022 से 20.05.2023 तक आंकड़ो का भागीदार राज्यों से मिलान किया जाना है।

Note:-

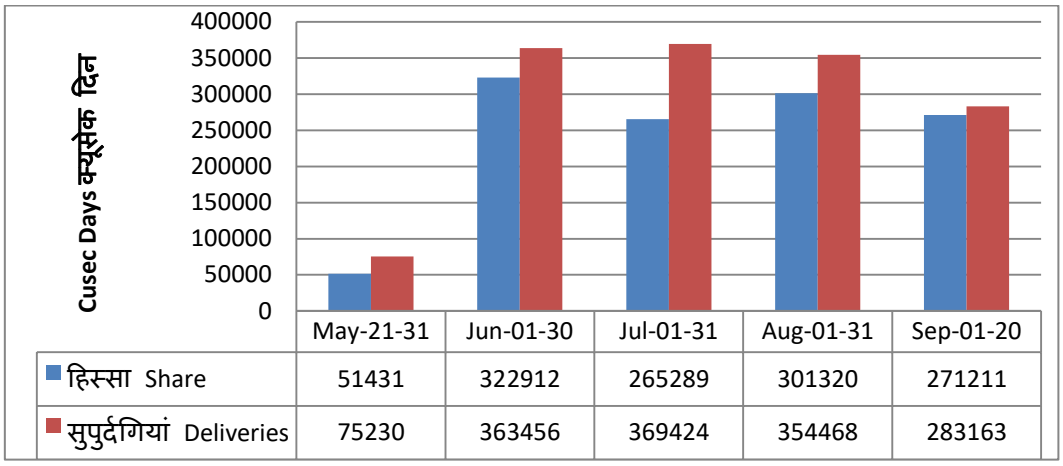
1. All Figures are in cusec days.
2. The deliveries have been made as per requirements decided in Technical Committee Meeting.
3 The figures from 21.09.2022 to 20.05.2023 are to be reconcile with Partner States.

चित्र 12 Fig. 12

दिनांक 21.9.2022 से 20.05.2023 तक की अवधि के लिए रावी-ब्यास जल से राजस्थान को हुई जल आपूर्ति की स्थिति को दर्शाने वाली विवरणिका

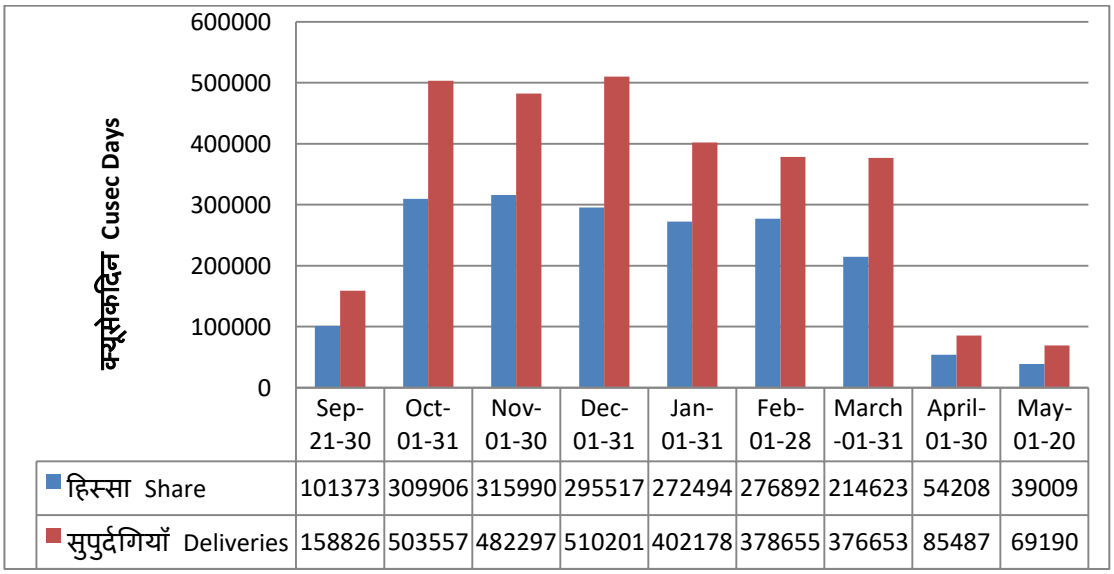
Statement showing position of water supplies to Rajasthan out of Ravi-Beas water for the period from 21.9.2022 to 20.05.2023

भराई अवधि(21.05.2022से 20.09.2022)
Filling Period (21.05.2022 to 20.09.22)



	May-21-31	Jun-01-30	Jul-01-31	Aug-01-31	Sep-01-20
हिस्सा Share	51431	322912	265289	301320	271211
सुपुर्दगियां Deliveries	75230	363456	369424	354468	283163

रिक्तिकरण अवधि 21.09.2022)से 20.05.2023)
Depletion Period (21.09.2022 to 20.05.2023)



	Sep-21-30	Oct-01-31	Nov-01-30	Dec-01-31	Jan-01-31	Feb-01-28	March -01-31	April-01-30	May-01-20
हिस्सा Share	101373	309906	315990	295517	272494	276892	214623	54208	39009
सुपुर्दगियाँ Deliveries	158826	503557	482297	510201	402178	378655	376653	85487	69190

नोट:-

1.सभी आंकड़े क्यूसिक दिनों में।

2.21.09.2022 से 20.05.2023 तक आंकड़ो का भागीदार राज्यों से मिलान किया जाना है।.

Note:-

1. All Figures are in cusec days.

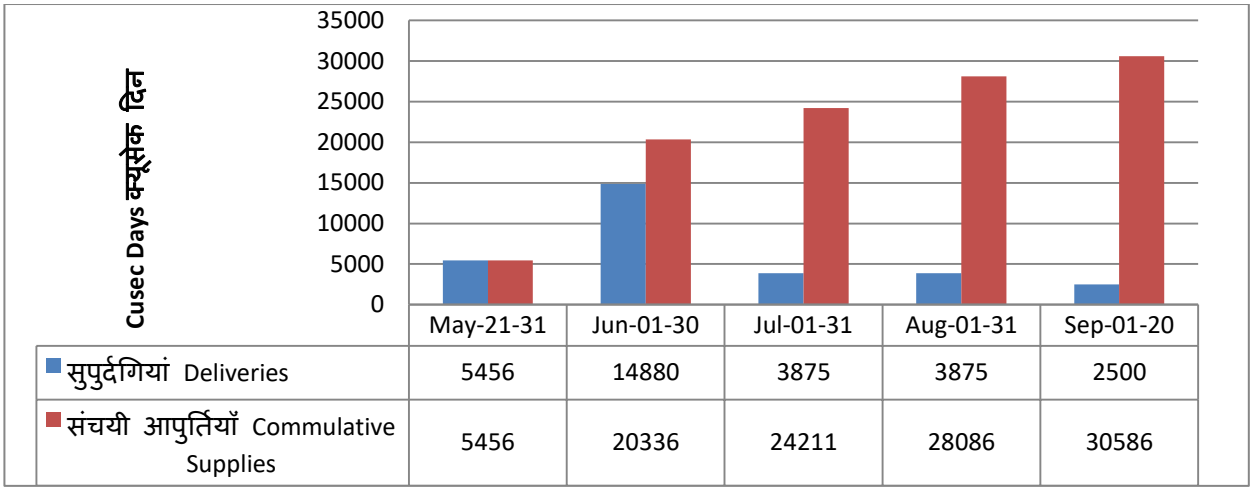
2. The figures from 21.09.2022 to 20.05.2023 are to be reconcile with Partner States.

चित्र 13 Fig. 13

दिनांक 21.9.2022 से 20.05.2023 तक की अवधि के लिए दिल्ली जल बोर्ड को की गई जल आपूर्ति की स्थिति दर्शाने वाली विवरणिका

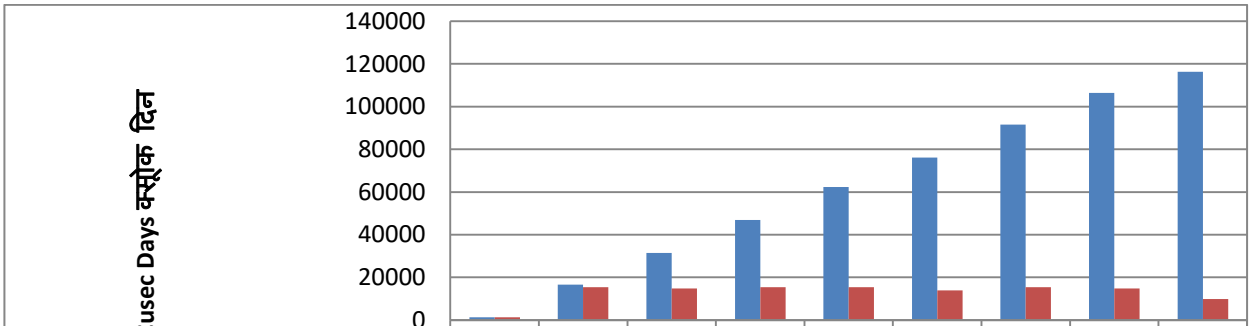
Statement showing position of water supplies made to Delhi Jal Board for the period from 21.9.2022 to 20.05.2023

भराई अवधि(21.05.2022से 20.09.2022)
Filling Period (21.05.2022 to 20.09.22)



	May-21-31	Jun-01-30	Jul-01-31	Aug-01-31	Sep-01-20
सुपुर्दगियां Deliveries	5456	14880	3875	3875	2500
संचयी आपुर्तियाँ Commulative Supplies	5456	20336	24211	28086	30586

रिक्तिकरण अवधि 21.09.2022)से 20.05.2023)
Depletion Period (21.09.2022 to 20.05.2023)



	Sep-21-30	Oct-01-31	Nov-01-30	Dec-01-31	Jan-01-31	Feb-01-28	March-01-31	April-01-30	May-01-20
सुपुर्दगियाँ Deliveries	1250	16626	31506	46882	62258	76146	91522	106402	116322
संचयी आपुर्तियाँ Commulative Supplies	1250	15376	14880	15376	15376	13888	15376	14880	9920

नोट:-

1.सभी आंकड़े क्यूसिक दिनों में।

2.21.09.2022 से 20.05.2023 तक आंकड़ो का भागीदार राज्यों से मिलान किया जाना है।.

Note:-

1. All Figures are in cusec days.
2. The figures from 21.09.2022 to 20.05.2023 are to be reconcile with Partner States.

भाखड़ा ब्यास
राष्ट्र गौरव

अध्याय-6

Chapter-6

Operation & Maintenance

6.1 Power Wing

In addition to routine maintenance activities, following works of significance were carried out on various Power Houses/Transmission System of BBMB during the year 2022-23:-

6.1.1 Bhakra Power Houses

A. Maintenance of Units

Unit No.	Period of Maintenance		Remarks
	From	To	
1	01.04.2022	31.03.2023	RM&U (Planned Outage)
2	02.04.2022	02.04.2022	Monthly Maintenance (Planned Outage)
	04.05.2022	4.5.2022	Monthly Maintenance
	13.06.2022	13.06.2022	Monthly Maintenance
	15.06.2022	15.06.2022	Measurement of Bus duct for RM&U of #1
	26.07.2022	26.07.2022	Monthly Maintenance and to attend hot points
	01.09.2022	01.09.2022	Monthly maintenance and replacement of water flow relay
	21.12.2022	21.12.2022	Monthly Maintenance
	31.01.2023	31.01.2023	Monthly Maintenance (Planned Outage)
3	06.05.2022	06.05.2022	Monthly Maintenance
	07.06.2022	07.06.2022	Monthly Maintenance
	06.07.2022	06.07.2022	Monthly Maintenance
	08.08.2022	08.08.2022	Monthly Maintenance
	16.08.2022	18.08.2022	To attend fault in Brake Jack System
	14.09.2022	14.09.2022	Monthly Maintenance
	29.09.2022	30.09.2022	To attend the fault of high vibration
	01.12.2022	14.12.2022	To attend problem causing high shaft vibrations.
	17.02.2023	28.02.2023	For Capital Maintenance of Penstock Head gate by irrigation wing and gate hoist and its control by Power Wing.
	01.03.2023	20.03.2023	For Capital Maintenance of Penstock Head gate by irrigation wing and gate hoist and its control by Power Wing.
	01.10.2022	10.10.2022	To attend the fault of high vibration
	14.10.2022	31.10.2022	To attend the fault of water leakage from penstock drain line.
4	05.05.2022	05.05.2022	Monthly Maintenance
	01.06.2022	01.06.2022	To attend Fault
	06.06.2022	06.06.2022	Monthly Maintenance
	07.07.2022	07.07.2022	Monthly Maintenance

	16.09.2022	16.09.2022	Monthly Maintenance
	20.10.2022	20.10.2022	Routine Maintenance
	23.12.2022	31.12.2022	Annual Maintenance (Planned Outage)
	01.01.2023	13.01.2023	Annual Maintenance (Planned Outage)
	27.03.2023	27.03.2023	Routine Maintenance (Planned Outage)
5	01.04.2022	30.04.2022	For annual maintenance and modification of runners
	01.05.2022	16.05.2022	For annual maintenance and modification of runners
	16.06.2022	16.06.2022	Monthly Maintenance
	05.06.2022	25.06.2022	For replacement of Brake pads.
	14.07.2022	14.07.2022	Monthly Maintenance
	20.08.2022	20.08.2022	Monthly Maintenance
	09.09.2022	09.09.2022	Monthly Maintenance
	18.10.2022	18.10.2022	Monthly Maintenance
	19.10.2022	19.10.2022	Routine Maintenance
	26.01.2023	31.01.2023	Annual Maintenance (Planned Outage)
	01.02.2023	15.02.2023	Annual Maintenance (Planned Outage)
	16.03.2023	16.03.2023	Monthly Maintenance (Planned Outage)

A) Major Works:

1. Important Maintenance works at Bhakra Left Bank:

Electrical Works: -

1. The work of erection, testing & commissioning of 150MVA Generator Transformer under during RM&U of Hydro-Generating Unit no. 1 from 108 MW to 126 MW.
2. 10 nos. 11 kV VCB Panels at Project Supply Centre and 07 nos. 11kV VCB Panels at 220 kV switch yard have been successfully erected & commissioned after dismantling of old 11 kV VCB Panels.
3. Erection, Testing and commissioning of new 600 AH, 220 V DC Battery Bank at Bhakra Left Power House was carried out successfully.
4. Augmentation of existing link-line of Unit No. 1 from 66 kV to 220 kV system to evacuate generated power of renovated Hydro Generating Unit No.1 from Bhakra PP-I to 220 kV Switchyard bus section-I of Bhakra PP-2 after R, M&U.

Mechanical Works: -

1. After completion of erection of Generator & Turbine components & pre-commissioning checks of Unit no. 1various mandatory tests for final commissioning of units were carried out.
2. Annual Maintenance of unit no. 4 carried out from 23.12.2022 to 13.01.2023.
3. Annual Maintenance of unit no. 5 carried on dated 25.01.2023 to 15.02.2023.
4. Annual Maintenance of unit no. 2 carried on dated 29.03.2023 to 12.04.2023.
5. Annual Maintenance of unit no. 3 carried on dated 24.04.2023 to 12.05.2023.

6. After replacement of filtration media in the pressure filtration tanks installed at EL-1150' of Bhakra Left Bank Power House, filtration tanks have been successfully charged on 28.07.2022.
7. Penstock dewatering pipe leakage of Unit No. 3 was attended by applying Loctite Pipe Repair Sealing System on the damaged portion of the pipe and leakage was arrested properly.

2. Important Maintenance works Bhakra Right Bank:

1. The 220 kV/300 AH battery bank has been installed at 220 KV switchyard of Bhakra Right Bank Power House.
2. The work of ETC of new Numerical Generator and generator transformer protection scheme in place of 20-year-old Russian Protection Scheme on all 5 no. 157 MW Generators have been successfully completed w.e.f 25.09.2022 to 27.12.2022.
3. Capital Maintenance of Penstock Head Gate of Unit No. 8 by irrigation Wing and its PSHG Hoist System by Power Wing were carried out successfully w.e.f. 02.01.2023 to 04.02.2023.
4. The work of ETC of new Voith make static excitation system on Unit No. 8 has been successfully completed w.e.f. 02.01.2023 to 12.02.2023 after replacing the 20-year-old Russian Make excitation system.
5. The work of ETC of new Voith make static excitation system on Unit No. 7 has been successfully completed w.e.f 14.02.2023 to 16.03.2023 after replacing the 20-year-old Russian make excitation system.
6. Annual Maintenance of Unit No. 7 from 25.09.2022 to 28.10.2022. (Mid –Term)
7. Annual Maintenance of Unit No. 8 from 29.10.2022 to 26.11.2022. (Full –Term)
8. Annual Maintenance of Unit No. 9 from 18.03.2023 to 15.04.2023. (Mid –Term)
9. Annual Maintenance of Unit No. 10 from 04.01.2023 to 30.01.2023. (Mid –Term)

CIVIL Maintenance Works:

1. Replacement of old existing GI pipe along with fittings and providing kitchen sink in A, B, C and D type quarters of Power Wing at Nangal

2. R&R of roofs with layer of water proofing for 14 nos. NR building at Nangal.

3. The day-to-day maintenance of Residential & Non-residential Buildings, offices and Power houses buildings was carried out as per complaints received in the complaint register.

6.1.2 Ganguwal and Kotla Power Houses

A. Maintenance of Units

Unit No.	Period of Maintenance		Remarks
	From	To	
Ganguwal			
1	01.04.2022 07.11.2022	06.04.2022 14.11.2022	Annual Maintenance Half Yearly Maintenance
2	06.04.2022 14.11.2022	14.04.2022 19.11.2022	Annual Maintenance Half Yearly Maintenance
3	14.04.2022 01.11.2022	20.04.2022 07.11.2022	Annual Maintenance Half Yearly Maintenance
Kotla			
1	01.04.2022 08.11.2022	6.04.2022 13.11.2022	Annual Maintenance Half Yearly Maintenance
2	15.04.2022 02.11.2022	20.04.2022 08.11.2022	Annual Maintenance Half Yearly Maintenance
3.	06.04.2022 13.11.2022	15.04.2022 19.11.2022	Annual Maintenance Half Yearly Maintenance

B. Major Works

1. Annual Maintenance of 132 KV /33KV T/F T-2 of Ganguwal Power House was carried out on dated 14/10/2022.
2. Annual Maintenance of Ganguwal-Kotla Tie Ckt no. 1 was carried out on dated 03/10/2022.
3. Annual Maintenance of 132 KV /33KV 16 MVA T/F T-1 & T-3 of Ganguwal Power House was carried out on dated 28/10/2022.
4. New C&R panel commissioned for M/C 1,2&3 for Ganguwal and Kotla.
5. New battery bank Charger commissioned for Ganguwal & Kotla.
6. Half yearly maintenance of 132/220KV 90 MVA I/L T/F T-2 of Ganguwal Power House was carried out on dated 09/05/2022.
7. Annual Maintenance of 132/220KV 90 MVA I/L T/F T-2 of Ganguwal Power House was carried out on dated 06/10/2022.
8. Annual Maintenance of 132KV Bus-Coupler at Ganguwal Power House was carried out on dated 17/10/202.
9. Annual Maintenance of Ganguwal-Kotla Tie Ckt no. 2was carried out on dated 26/11/2022.
10. Half yearly maintenance of 132/220KV 90 MVA I/L T/F T-1 of Ganguwal Power House was carried out on dated 04/05/2022.
11. Annual Maintenance of 132/220KV 90 MVA I/L T/F T-1 of Ganguwal Power House was carried out on dated 04/10/2022.

6.1.3 Pong Power House

A. Maintenance of Units

Unit No.	Period of Maintenance		Remarks
	From	To	
1	07.10.2022	21.10.2022	Annual Mtc. works along with rethreading work of man hole of spiral case.
2	22.10.2022	03.11.2022	Annual Mtc. works along with rethreading work of man hole of spiral case.
3	06.03.2023	21.03.2023	Annual Mtc. works along with rethreading work of man hole of spiral case.
4.	10.02.2022	04.06.2022	Annual Mtc. works along with rethreading work of man hole of spiral case.
	03.11.2022	15.11.2022	Half yearly Mtc work along with installation and commissioning of 75 MVA GT after repair
5	22.04.2022	02.05.2022	Annual Mtc. works
	04.11.2022	15.11.2022	Half yearly Mtc work along with rethreading work of man hole of spiral case.
6	03.05.2022	17.05.2022	Annual Mtc. works along with replacement work of trunnion seal of MIV
	22.11.2022	02.12.2022	Half yearly Mtc work along with rethreading work of man hole of spiral case.

C. Major Works

MECHANICAL MAINTENANCE WORKS: -

1. Replacement of Fire Hydrants: - Replaced all the 18 No. old damaged Fire Hydrant of PH with new ones on 20.09.2022 against P.O. No. GEM CONTRACT NO.-GEMC-511687706412765 dated 01.07.2022.
2. Repair of Stator of Unit- 4: - On 07.12.2022 unit 4 tripped at 01:53 Hrs. due to generator differential fault along with release of Co2 bank in the generator barrELOn checking, it is found that heavy flash occurred from the stator coils (top overhang) & jumper joints in the parallel paths. Thereafter fault attended on 14.01.2023 departmentally by replacing 15 No. stator coils.
3. Primary Frequency Response Test: - Primary Frequency Response conducted of unit 2 & 3 against Work order No. 108/PR-1746 Dated 12.01.2023 and Work order No. 109/POG-iv Dated 01.03.2023 placed

to M/s Solvina India Pvt. Ltd. and M/s Andritz Ltd. respectively on 27.03.2023

4. Provide 2 No. drinking water coolers along with ROs at PPH on 19.01.2023 against PO No. GEM Contract no- GEMC 511687723738446 Dated 08.09.2022
5. Installation & Commissioning of new HV testing set completed on 22.03.2023 supplied against GeM P.O No. GEMC- 511687784995797 dated 12.10.2022 placed to M/s Tesla Electrical Industries Bhopal.

OTHER ELECTRICAL MAINTENANCE WORKS: -

1. Replacement work of BUS BAR Protection & LBB: - Replaced old Electro-Mechanical Bus Bar & LBB Protection with Numerical Bus Bar & LBB Protection successfully on 12.12.2022 against P.O. No. 714/PHD/P&C-203 Dated 30.08.2019
2. Replaced damaged SF-6 Br. of unit-6: - SF-6 breaker of M/s Siemen make was busted on Head Flash Over Protection on 06.12.2022. Thereafter, it was decided to replace the existing breaker of make M/s Siemens with new one of M/s CGL. Accordingly, the same was received of make M/s CGL and replaced on 13.02.2023.

6.1.4 Dehar Power House

A. Maintenance of Units

Unit No.	Period of Maintenance		Remarks
	From	To	
1	25.11.2022	01.03.2023	Capital Maintenance
3	30.01.2023	18.02.2023	Annual Maintenance
	20.02.2023	16.03.2023	Annual Maintenance.
4	05.01.2023	21.01.2023	Annual Maintenance.
5	07.10.2022	26.12.2022	Capital Maintenance

B. Major Works

1. New 4 nos. 11 KV/400 KV single phase Generator transformer has been replaced.
2. New 11 nos. 11 KV, VCB breakers has been replaced at Dehar Power House, Slapper.
3. Low impedance new 400 KV Bus bar Protection and 220 KV Bus Bar Protections has been replaced.
4. Servicing of excitation system for Unit No. 4 & Unit No. 6 has been carried out from OEM i.e., M/S Andritz Pvt. Ltd.
5. New 3 nos. 220 KV Current Transformers of 220 KV Bus coupler with extended Bus-II has been replaced.
6. New 12 nos. 11 KV Panel Vacuum Circuit Breakers complete in all respects has been replaced in Dehar Switchyard, Slapper.
7. 220 KV isolator No. 221 HCB Type of 40/40/13 MVA Transformer Bay has been replaced with new one.
8. 420 KV CTs of Dehar Unit No. 3 installed between Bus Isolator No. 404 &

breaker X-2 of Dehar Unit No. 3 has been replaced with new one.

9. 3 nos. 245 KV Voltage Transformers of 220 KV Bus section I have been replaced with new one.
10. 220 KV Blue phase Current Transformer (Bus side) of transformer 40/40/13 MVA, 220/132/11 KV Transformer T-8 has been replaced.
11. 400 KV Bus side Isolator No. 405 of Unit No. 3, 220 KV side Bus Isolator No. 208 of 220 KV Dehar Ganguwal Ckt-I & 220 KV side Bus Isolator No. 221 of 220 KV Bus-I PTs has been replaced with new one.
12. 198 KV LA of Yellow Phase Dehar Ganguwal Ckt. has been replaced.

6.1.5 Transmission System

General performance of BBMB sub-stations and transmission lines remained satisfactory. The details of the major works carried out are as under:-

i) Power Transformers

Replacement/Augmentation of 220/66kV 100MVA, CGL make Transformer with new Bharat Bijli make 220/66kV 160MVA Transformer has been carried out and commissioned at 220 kV Sub-Station, BBMB, Jamalpur.

ii) Circuit Breakers

1.	One No. existing old 245kV Circuit Breaker CGL make replaced with New Spring Charge CGL make Circuit Breaker on 220kV Charkhi Dadri Mahindergarh Circuit-II at 220kV Sub Station, BBMB, Charkhi Dadri.
2.	2 Nos. old 145kV CGL make SF6 circuit breaker has been replaced with new Siemens make circuit breaker at 220kV substation, BBMB, Kurukshetra.
3.	Commissioning of new 132kV circuit breaker (Siemens make) on 132kV Ganguwal-Kotla TIE ckt-2 at Kotla Power House.
4.	03 Nos. 145kV old HBB Make SF-6 breakers were replaced with new Siemens Make SF-6 breakers at 220kV Substation, Jalandhar.
5.	04 nos. 11kV VCB panel BHEL make replaced/ commissioned with new one STELMEC make 11kV VCB panel at 220kV sub-station BBMB, Jamalpur.
6.	01 no. 66kV ABB make old & used circuit breaker replaced with CG Power make circuit breaker at 220kV sub-station BBMB, Jamalpur (due to T/F augmentation)

iii) Current Transformers (CTs)

1.	1 No. 220kV CT replaced on 220kV Samaypur-Charkhi Dadri line at 220kV Sub Station, BBMB, Samaypur.
2.	1 No. 220kV Yellow phase CT replaced on 220kV Bhiwani-Hisar at 400kV Sub Station, BBMB, Bhiwani.
3.	2 No. 400kV CT replaced on (Red & Blue Phase) 400kV PGCIL-Hisar Line (CB X-6) & (X9) at 400kV Sub Station, BBMB, Bhiwani.

4.	Testing and commissioning of 1 no new 220kV CT in place of Blue phase old CT of 220kV Bhiwani-Hisar Ckt-1 carried out at 400kV Sub Station BBMB Bhiwani.
5.	3 nos. Heptacare Power Industry Pvt. Ltd. make CTs are installed on 220kV Kurukshetra-Jagadhari Line and 3 No. Heptacare Power Industry Pvt. Ltd. make CTs on Kurukshetra-Panipat Line at 220kV Sub Station, BBMB, Kurukshetra
6.	Replaced 33kV defective Y ph CT of Jai Durga make at 400kV sub station Panipat.
7.	Replaced 33kV defective Y ph CT of Jai Durga make at 400kV sub station Panipat.
8.	01 CT Blue Phase AE Bombay make of 66kV Dhulkote-Chandigarh Ckt.-II has been replaced with new Mehru make CT at 66kV sub-station Chandigarh due to high Tan Delta Value.
9.	At 220kV Sub-Station, BBMB, Sangrur (Yellow Phase) CT of 66kV Sangrur-Rangiyan (Bhalwan) line has been replaced due to high Tan Delta result with Kapco make CT.
10.	3 Nos. 220kV CTs WSI make and 01 no. CT TELK make were replaced with 3 nos. new Mehru make and 01 no. Hepta Care Make CT resp. at 220kV sub-station BBMB, Jamalpur (due to T/F augmentation)
11.	4 No.s, 66kV KAPCO make CTs were replaced with new Mehru make CT at 220kV sub-station, BBMB, Jamalpur (due to T/F augmentation)

iv) CVT/PTs

1.	1 No. existing CVT replaced with 1 No. New PT (Heptacare make) of Yellow Phase on 220kV Charkhi Dadri-Khetri Circuit-1 at 220kV Sub Station, BBMB, Charkhi Dadri.
2.	Commissioned 220kV new Hivoltrans make PT on Blue phase of 220kV Charkhi Dadri Line in place of old Alstom make PT for SAS at 400kV Panipat.
3.	Replaced 220kV defective CVT of Y Ph of Alstom make with new CVT of Mehru make on 220kV Thermal ckt no. 2 at 400kV Sub station, Panipat.
4.	One No. Damaged Hivoltran Make PT has been replaced with new CGL Make PT on 220kV Jalandhar – Jamalpur ckt.-2 at 220kV S/Stn, BBMB, Jalandhar
5.	Damaged 220kV Bus-1 Yellow Phase CVT has been replaced with new (CGL make) PT at 220kV S/Stn. Sangrur.

v) Lightning Arrestors (LAs)

1.	3 No. LA replaced on Red, Blue & Yellow Phase with new electrolyte make LA of 220kV Charkhi Dadri-Khetri Circuit 2 at 220kV Sub Station, BBMB, Charkhi Dadri.

2.	1 No. LA replaced on Blue Phase with new electrolyte make LA of 220kV Charkhi Dadri-Ballabgarh at 220kV Sub Station, BBMB, Charkhi Dadri.
3.	1 No. LA replaced on Red Phase of 220/132kV 100 MVA Transformer T-2 at 220kV Sub Station, BBMB, Hisar.
4.	1 No. LA replaced on Red Phase of 132kV Hisar-Sirsa Circuit at 220kV Sub Station, BBMB, Hisar.
5.	1 No. 220kV damaged LA of blue phase of 220 kV Rohtak Road- Narela Ckt-II has been replaced with new LA at 220kV substation BBMB Delhi.
6.	Replaced defective R Phase LA with new LA on 220 kV Chhajpur ckt no. 1 at 400kV Sub station, Panipat.
7.	Damaged Yellow Phase 198kV LA of 220 kV Jagadhari-Kurukshetra S/C Line has been replaced with new LA at 220kV Sub-Station, BBMB, Jagadhari
8.	Damaged 1 no. 60kV LA controlling 66kV Dhulkote-Barnala ckt has been replaced with new at 220kV sub-station, Dhulkote.
9.	4 nos. Damaged 120kV LA of 132kV has been replaced with new LA at 220kV S/Stn. Jalandhar
10.	Damaged 198kV (CGL make) LA of 220 kV Jalandhar –Alawalpur ckt (Blue Phase) has been replaced with new (Electrolyte make) LA at 220kV S/Stn. Jalandhar
11.	Damaged 198kV Blue Phase LA of 220kV Sangrur –Jamalpur ckt-1 has been replaced with new (Electrolyte make) LA at 220kV S/Stn. Sangrur
12.	Damaged 66kV Yellow Phase LA of 66/11kV,10/12.5 MVA Transformer T-2 has been replaced with new (Electrolyte make) LA at 220kV S/Stn. Sangrur
13.	2 nos. Damaged 60kV LA has been replaced with new LA at 220kV sub-station, BBMB, Jamalpur
14.	3 nos. Damaged 120kV LA has been replaced with new LA at 220kV sub-station, BBMB, Jamalpur
15.	2 Nos. damaged 198kV LA has been replaced with new LA at 220kV sub-station, BBMB, Jamalpur.

vi) Isolators

1.	One No. existing old Bus-1 and Bus-2 220kV Isolator replaced with new Isolator by HVPNL on 100 MVA Transformer T-2 (HVPNL) at 220kV Sub Station, BBMB, Charkhi Dadri.
2.	One No. existing old Bus-1 Isolator, Bus-2 Isolator and Line Isolator with earth switch replaced with new isolators and Line Isolator with earth switch by HVPNL on 220kV Charkhi Dadri Mahendergarh Circuti-II at 220kV Sub Station, BBMB, Charkhi Dadri.

3.	One No existing old Bus-2 line isolator with earth switch replaced by RVPNL with new line isolator with earth switch on 220kV Charkhi Dadri-Khetri Circuit-2 at 220kV Sub Station, BBMB, Charkhi Dadri.
4.	One No. existing old Bus-1 Isolator replaced by RVPNL with new Isolator on 220kV Charkhi Dadri-Khetri Circuit-2 at 220kV Sub Station, BBMB, Charkhi Dadri.
5.	8 No. 33kV isolators has been replaced with new isolators at 220kV Substation, BBMB, Delhi.
6.	02 nos. 66kV Isolators has been replaced with new HIVELM make of 220/66 kV 160 MVA T/F –III at 220kV sub-station, BBMB, Jamalpur
7.	13 nos. old & used 245kV Isolators has been replaced with new GR power make Isolators on various feeder at 220kV sub-station, BBMB, Jamalpur
8.	06 nos. old & used 66 kV Isolators of various feeder has been replaced with new one Electrolyte make Isolators at 220kV sub-station, BBMB, Jamalpur

vii) Protection & Testing

1.	One No. old existing damaged Numerical Differential Protection scheme of 220kV side of 220/132kV 100 MVA Transformer T-1 and T-2 (HVPNL) replaced duing the SAS work with new Siemens make Numerical Differential Protection scheme at 220kV Substation, BBMB, Charkhi Dadri.
2.	One No. existing old damaged Siemens make Numerical Differential Protection scheme of 220kV Charkhi Dadri-Khetri Circuit-1 and Circuit-2 (RVPNL) replaced during SAS work with new IEC-61850 Compliance Siemens make Numerical Differential Protection scheme at 220kV Substation, BBMB, Charkhi Dadri
3.	One No. existing old damaged Siemens make Numerical Backup o/c and e/f relay of 220kV Charkhi Dadri-Bhiwani Circuit-3 replaced with Siemens make Numerical Backup o/c and e/f relay at 220kV Substation, BBMB, Charkhi Dadri.
4.	220kV Bus Bar Protection scheme has been commissioned at 220kV substation, BBMB, Delhi.
5.	Old and used Micom P442 relay Commissioned in place of defective REL relay on 132kV Bahadurgarh feeder at 220kV substation, Narela.
6.	Testing & Commissionging of Relay panels and numerical relays of M/S GE T&D (India) Ltd., Chennai on Unit No. 1, 2, 3 of Ganguwal Power House and Unit No. 1, 2, 3 of Kotla Power House after replacement of existing Relay panels.
7.	Faulty KBCH relay of 66/11kV Transformer T-2 replaced with spare relay at 220kV Substation, Dhulkote.
8.	Commissioned Siprotec 7SA52 relay on 66kV Hydrabad and 66kV Glob steel in place of old Sifang CSC 161 relay at Ballabgarh station.

9.	220kV Chhajpur-1 M1, M2 defective CSC101 relay replaced with new ZIV relay & MICOM P442 relay and on 220kV Chhajpur-2 M1, M2 defective CSC101 relay replaced with new ZIV relay & old and used EPAC 3000 relay at 400kV Sub station, Panipat
10.	220kV Thermal-4, M2 defective relay replaced with old & used MICOM P442 relay at 400kV Sub station, Panipat.
11.	Defective LBB relay of 220kV Palli-2 ckt replaced with repaired relay at 220kV Sub station, Samaypur.
12.	Testing & commissioning of new Numerical Schneider make relay panels of 33kV & 11kV at 220 kV Substation, Dhulkote.

vii) Overhauling of Breakers

-Nil-

ix) Deposit Works

1.	The shifting of tower no. 1056-1060 of 220kV Rohtak Road- Narela D/C transmission line due to Metro line has been completed as a deposit work of DMRC
2.	The shifting of Tower No. 888-889 of 400kV Rajpura- Bhiwani line due to new railway line from Meham- Hansi as deposit work of Northern Railway has been completed
3.	The shifting of Tower No. 11-12 of 220kV Panipat- Narela Ckt-III line due to Panipat- Shamli NH-709 Road as deposit work of NHAI has been completed.
4.	The shifting of Tower No. 768 of 220kV Panipat- Dhulkote D/C line due to Construction of over bridge on Panipat Refinery road as deposit work of Haryana PWD B&R has been completed.

x) Civil Works

1.	Renewal, replacement and repair of the existing buildings / boundary wall etc. at various substation under Panipat circle carried out.
2.	Work for providing pucca berms by means of kerbs, interlocking paver blocks and channels on existing kachha berms on both ends of the road leading to control room building at 220kV Sub-Station, BBMB, Jagadhari
3.	Work for Tile Terracing of roof of Division Office building got completed at 220kV Sub-Station, BBMB, Jagadhari.
4.	Civil works of R&R of Officer's, Gents and ladies washrooms in Division office building at 220 kV GSS, BBMB, Jagadhari got carried out.

5.	Construction of Damaged/Broken wall at 220 kV sub-Station, BBMB, Barnala at back side of Rest House.
6.	Renovation work of dispensary, roof of officer's rest house club house building and vehicle shed located at 220 kV sub-station, BBMB, Dhulkote was done.
7.	Repair work of boundary wall of colony premises was done in 220 kV sub-station, BBMB, Dhulkote.
8.	Repair/Replacement of Tile Terracing in A, B & C type quarters at 220 kV sub-station, BBMB, Jamalpur.

Miscellaneous Works

1.	Replacement of 6000 LPH transformer oil filtration set with news at 220 kV Substation BBMB Narela.
2.	Testing and commissioning of new 12 No. 220 kV, 13 No. 132 kV, 12 No. 33 kV and 5 No.11 kV BPCU, 1 No. SAS, 1 No. Auxiliary and 1 No. ACDB Siemens make SAS Panels carried out under automation of sub-stations at 220 kV Sub Station, BBMB, Hisar
3.	Testing and commissioning of new 18 No. 220 kV, 1 No. 132 kV, 1 No. 11 kV Siemens make SAS Panels carried out under automation of sub-stations at 220 kV Sub Station, BBMB, Charkhi Dadri
4.	Testing and commissioning of new 6 No. 220 kV, 18 No. 66 kV, 4 No. 33 kV and 1 No. 11 kV BPCU Siemens make SAS Panels carried out under automation of sub-stations at 220 kV Sub Station, BBMB, Ballbhgarh
5.	Testing and commissioning of new 11 No. 220 kV Siemens make SAS Panels carried out under automation of sub-stations at 220 kV Sub Station, BBMB, Samaypur
6.	Testing & commissioning of new RVT of 220/132 kV, 100 MVA, T/F-3 carried out at Jalandhar substation.
7.	Commissioning of AAJCO make 48 Volt 350 AH Lead Acid Batteries carried out at 400 kV Sub-Station, Bhiwani
8.	Existing 48V 150AH Stationery Lead Acid Battery Bank was replaced with new Exide make 48V 200AH Battery set at 220 kV sub- station, Narela
9.	Radetron make 48-volt Battery Charger installed and commissioned successfully at Carrier Room of BBMB Sub-stations Panipat, Delhi, Samaypur, Sangrur, Barnala, Chandigarh, Ganguwal, Kotla & Pong.

xii) Substation Automation System and Remote Operation

After successful Completion of the work of Automation at 220kV substations, BBMB, Barnala with its remote operation from 220kV Substation, BBMB, Sangrur in the year 2018-19. BBMB has moved a step ahead towards the automation of four nos. substation i.e. 220kV BBMB Substation Samaypur, Ballabhgarh, Charkhi Dadri and Hisar along with remote operation from SLDC Chandigarh and 400kV BBMB Bhiwani. Letter of Award (LOA) dated 20.07.2020 for carrying out the work has been placed upon M/s Siemens Ltd. with total project cost Rs.12.69 Cr.

Erection, Testing & Commissioning of the project has been completed and 1000Hrs availability test of the project is in progress.

xiii) Roof Top Solar Plant

BBMB has successfully commissioned 3375.90 kWp rooftop solar power plants on 71 nos, non-residential buildings of its Sub Stations & Power Houses. In addition to this, BBMB has signed a PPA for installation of 15MW floating solar power plant at Nangal Dam Reservoir near village Neilla, Distt. Billaspur, Himachal Pradesh with M/s SJVN Green Energy Limited and is likely to be commissioned by April 2024. BBMB has also initiated installation of 18MW Ground Mounted Solar Power Plants at 04 no. different locations at Nangal & Talwara, which is in the final stage and LOI shall be issued shortly. Further, BBMB has also floated NIT for installation of cumulative capacity 11.5MW Ground Mounted Solar Power Plant in CAPEX mode with 10MW at 400kV GSS Bhiwani & 1.5 MW at 220kV GSS Hisar. BBMB is also exploring potential of solar power at Canal Top. Work order for carrying out Technical Feasibility study for Canal Top Solar Power Plant to be installed at Baggi Channel, BBMB, Sundernagar shall be placed shortly.

6.2 Irrigation Wing

6.2.1 Bhakra Nangal Project

A Bhakra Dam

Introduction:-

In order to monitor the behavior and to ensure continued safe operation of Bhakra Dam and Power Plants, a number of devices/instruments such as uplift pressure pipes, underground water holes, drainage holes, settlement bench marks, traverse markers, geodetic survey points, plumb lines, tilt meters, Carison resistance type instruments, seismographs, strong motion accelerographs, structural response recorders etc. have been provided in and outside the dam and appurtenant works.

The geodetic survey work of Bhakra Dam was carried out during the year 2022-23 by taking, traverse observation and allied double leveling with the points fixed on both upstream and downstream side of the dam.

Observations taken on Bhakra Dam:-

a) Uplift

The annual depth checking of vertical uplift pressure pipes carried out during the period under report indicates that all these pipes are more or less maintaining their original depths. The annual functioning test was also carried out to ascertain the functioning/non-functioning condition of the uplift pressure pipes.

b) Observations of drainage flow from joint drains and intermediate drains.

Based on the observation of under-ground water holes and other field, observations, drilling of additional drain holes was not considered necessary

during the period under report.

c) **Special deformation:-** It includes

- **Downstream Rock Rib Points**:- These time plots take into account the observation data for four series during the period under report and for two previous years cycles and comparison.
- **Targets on downstream face of Dam**:- Targets in transverse lines on left and right non overflow sections of dam and targets on central trailing wall of spillway, corresponds to the location of plumb lines in the body of the dam in Block 15, 25 and 20 respectively. The data of these targets has been processed with reference to the June, 1975 observations series. The perusal of the plotted data in these plates indicate no definite trend.

d) **Plumb-Line**

The curves of the plumb-line deflection of suspension points, perpendicular to the dam axis were taken. Time curves of deflection of the suspension point in Block-20 and lower suspension points in Block 15 and 25, parallel to the dam axis were of very small magnitude.

Functioning of Works:-

The regular inspection of the upstream face of the dam from minimum RWL to maximum RWL was done. Observation of cracks has been done during depletion and filling period with the help of boat. The concrete surface inside galleries was also inspected and it has been observed that there is no fresh crack during the period under report.

e) **Inspection and maintenance of penstock trash racks and river outlet trash racks.**

- **By Divers:-** At reservoir level of EL 1462 Ft. minimum draw down level (MDDL), some portion of the trash racks can be visualized to ascertain any damage to the trash racks. The possible diving depth is 80ft approximately. This year the inspection was not carried out due to reservoir level did not deplete to minimum reservoir level during the period under report.
- **Through Remote Operated Vehicle (ROV):-** The underwater inspection of trash racks is also being done by using ROV at regular intervals. The aforesaid report indicates that there is no physical damage to trash racks.

B Nangal Dam & Nangal Hydel Channel (NHC)

Routine maintenance and repair to Nangal Dam, Nangal Hydel Channel alongwith its appurtenant works and canal colonies at various stations i.e. Head works at Nangal Dam, Ganguwal, Kotla, Lohand, Bharatgarh and Ghanouli and NHC alongwith both Rest Houses at Ganguwal and Kotla were carried out as per operational manual.

- In general, the uplift pressure under the Nangal Dam floor remained within the design limits.
- Sounding observations of river bed just upstream and downstream indicates that the silt deposits have reduced.

- The drainage report of Nangal Hydel Channel indicates that discharge which passed through all the cross drainage works during the current year is less than the designed discharge and behavior of cross drainage works was satisfactory.

C. Gates and Gearing

The Routine repair & maintenance works i.e. greasing of ropes with servo coat/grease, greasing of winches, greasing of trunion pin at Ganguwal & Kotla spillway and all the maintenance works on Mechanical appliances at Nangal. The following works in the gates and gearing area of the Dam were carried out:-

- Painting of River Head Regulator gate (Upper & lower) of bay No' 20, 21& 24 at Nangal Dam.
- Repair, maintenance and painting of gate No. 1 to 3 of charanganga Escape'.
- Repair, maintenance & painting of Ropar Head regulator gates from 1 to 6'.
- Repair, maintenance and painting of canal cross regulator gates No" 1 to 7 at Nakkian.
- Repair, maintenance & painting of canal cross regulator gates No' 1 & 5 at Charanganga.
- Repair, maintenance & painting of canal head regulator (cHR) bay No. 7 & 8 (upper & lower) gates at Nangal Dam

D. RM & SR Division (Inspection/Repair by Pneumatic Caisson method)

Inspection/repair by pneumatic caisson Method.

The Inspection of Spillway apron floor with the help of divers in left bay was conducted in May 2022 and Right bay in Oct. 2022.

Spillway:-

S.No.	Description	Status
1.	Underneath of beam and deck	O.K.
2.	Spillway D/S Balcony	O.K.
3.	Spillway bridge piers	O.K.
4.	Spillway training walls above water level	O.K.
5.	Spillway outlet Eye Brow	O.K.

E. Bhakra Mechanical Division, Nangal

Bhakra Mechanical Division, Nangal is mainly responsible for operation, maintenance/repair works of permanent installations including radial gates, river outlet gates, trash racks, spillway radial gates etc., maintenance & overhauling of all the Mechanical equipment including heavy earthmoving machinery, transport vehicles at Bhakra Nangal Project and Railway network which have been provided for carriage of workmen & material from Nangal to Bhakra Dam and

other such works.

Besides General Capital Maintenance & periodical repair and painting of all Mechanical Installation i.e. Penstock High Head Gates, River Outlet Gates, Penstock Steel Liners, Elevators, Dehumidifying plant, Hoist Gantry Crane etc.

The following additional works were carried out during the period 01.04.2022 to 31.03.2023 in Bhakra Mechanical Division, BBMB, Nangal Township:-

1. As protection measure to Hill Slopes around Bhakra Dam area of 7430 sq.ft Gunnitting has been carried out near Security Tower Left side of Bhakra Dam.
2. The dehumidifying Plant remained under operation w.e.f. 31/10/2022.
3. Patch work of all the 04 No. Radial Gates was carried out.
4. Pre-Monsoon and Post Monsoon Inspection and Mtc. Of Mechanical Installation were carried out.
5. Capital Maintenance of Penstock Head Gate No. 8 & 3 has been carried out.
6. Capital Maintenance of River Out let Gate No. 6 & 2 has been completed and Gate No. 9 is under progress.
7. Painting of Stair and Pipe line inside Bhakra Dam was carried out.
8. Inspection of Penstock Liner No. 8 & 4 was carried out.
9. Total 155 No. Sleeper has been replaced on Nangal Bhakra Railway Track.
10. Special repair of 2 No. Railway Boggie was carried out.

F. Bhakra Electrical Division

The following Special work completed during the year 2022-2023:-

1. Replacement of old defective trailing cable of floating deck No. 1 for timber ropeway loading station at Bhakra Dam.
2. Replacement of old electric Stationer Air Compressor by new one at RL-1400 at Bhakra Dam.
3. Replacement of 10 Nos. old window type 1.5 ton capacity Air Conditioner with new 1.5 ton Split type (hot & cold) air conditioner at Nangal Township at Sinchai Sadan.

G. Nangal Workshop Division

Nangal Workshop is an unit of many small shops and was primarily set up for the construction of mighty Bhakra Dam in the year 1947, subsequently it contributed a lot for Bhakra Dam and BSL Project and now its capacity is being

utilized for various maintenance activities of all the project of BBMB. However its little capacity is being utilized for under taking the various structure jobs of different electricity board and Govt. organizations.

Nangal Workshop has executed the following Major Jobs during year 2022-23 i.e. (01.04.2022 to 31.03.2023).

1. Manufacturing of 11 No. M.S. Pantoon completed & delivered.
2. Repair of Guide vanes 36 No. base plate 1 No., Brasses & 6 No., completed and delivered.
3. Manufacturing of 18 No. Musical Rubber Seal completed and delivered.
4. Manufacturing of tree Guard 25 No.,G-1 Pipe 3 No , M.S. Bolt 13 No., Rubber Seal 2 No., Break Shoe 16 No., Break Block 33 No., Steel Almirah 6 No., Repair wooden Chair 16 No., Repair Pipe Threading 25 No. completed and delivered.
5. Manufacturing of M.S. Chowkhats 24 No., Jhoola 1 No. frame of Main cover 150 No. , Flower Pot Stand 16 No., M.S. Sheet 6 No. M.S. door 6 No., Iron frame with grill 4 No., Shaft 2 No., M.S. grill 4 No.,Angel of Iron Chowkhat one No. Single door Chowkhat 4 No., Football Pole 1 No. , Gate 5 No., Double door Pattam 10 No., Single door, Chowkhats 4 No., M.S. grill 10 No., Angle post 40 No., Cover Frame of CCTV Camera 4 No., M.S. Window 1 No., sign Board 5 No., M.S. Angle Chowkhats 40 No., key of value 2 No., Repair Dust-Bin 7 No., Repair M.S. Chowkhats 20 Nos., Repair M.S. Window 9 No., Repair M.S. Gate 3 No., Repair Iron Pair 96 No completed and delivered.
6. Manufacturing of CI Roller 7 No., G.M.Bush 7 No., Roller Pin- 2 No., Inner Locking Plate 2 No., Outer Locking Plate 2 No., Wooden Chair 24 No., M.S. gate 1 No., Barricade 1 No., Frame 2 No., Flower Pot Stand 4 No., M.S. door with chowkhats 8 No., Steel Almirah 2 No., Packer 1 No., Rope Brackets 1 No., Notch 1 No., Rubber Seal 1 No., Sign Board 10 No., Frame for drain 10 No., Repair Wooden Chair 4 No., Barricade 1 No.completed and delivered.

CONCLUSIONS:-

- In general, the uplift pressures under the dam remained well within the design limits.
- The underground water levels in the abutments are affected generally by rainfall and with the variation of reservoir water level.
- The seepage discharge at the various locations in the dam is affected mainly by incidence of rainfall and less due to variation of reservoir water level and the trend continues to be same as per previous years.
- The settlement of the dam and abutments resulting from reservoir load during the filling period tends to recover itself during the

following depletion period and there is no deviation from general trend.

- The maximum downstream deflection of 25.90 mm (with reference to EL336.80 m (1105 ft)) was recorded on 28.09.2022 by the suspension point EL490.12 m (1608 ft) of the plumb line in Block 20 when the reservoir level was at EL509.52 m (1671.64 ft). The deflections obtained from the measurement of traverse markers on the top of the dam indicates that values of target points are less compared to the values recorded in 9/1978.
- The observed values of horizontal deflections obtained from geodetic measurements of rock rib points indicate some change with varying reservoir levels at some locations, yet it does not indicate any definite pattern of deflection vis a vis reservoir levels.
- The compressive stresses calculated from the observed data of the working stress meters installed at EL334.06 m (1096 ft) are more or less of same order as observed during the previous years.

6.2.2 Beas Project

6.2.2.1 Beas Project Unit-I (BSL)

The work management of Pandoh Dam and its Water Conductor System comprising of Pandoh Baggi Tunnel, Baggi Control Works, Sundernagar Hydel channel, Balancing Reservoir, Sundernagar Slapper Tunnel, Surge Shaft, Pen stock Townships at Pandoh & Sundernagar and Hospitals at Pandoh, Sundernagar & Slapper alongwith 2 Nos. schools at Sundernagar and 1 No. at Pandoh and Administrative control of Slapper School, is being carried out by an officer of the rank of Chief Engineer, who is headquartered at BSL Project, Sundernagar. The components of the project are as under:-

A. Pandoh Dam

The Upstream & Downstream slope of Pandoh Dam alongwith its protection works remained intact. No wet patches, sloughing, depressions etc. were observed on downstream slope of Pandoh Dam during rainy season. The left & right abutment drains, haul road and drains on Dam surface remain intacted and clear.

1. Five No. Radial Gates of Pandoh Spillway :-

All the 5 nos. Radial Gates at Pandoh Spillway are functioning well. The 5 Nos. Radial Gates chamber/tanks provided in the spillway piers were top up with Hydraulic Oil in the month of March 2023 for smooth functioning of gates. The overhauling of Gate No. 2 was carried out.

2. Drum Type Log Boom:

Temporary Drum type Log Boom installed during the onset of monsoon season 2022 has worked satisfactory. After monsoon season the log boom was dismantled . The repair work of Log Boom was carried out and

the boom was re-installed before the onset of the Monsoon.

3. Benches Along Left & right abutment

Benches left and right abutment of Pandoh Dam remained stable.

4. Vortex Formation:

Vortex formation found negligible during the operational year of 2022-23.

5. Trash Racks:-

The cleaning & painting work of trash rack was carried out and all the painting jobs related with the structure were finished.

6. Sulphate problem in D&G galleries of Pandoh Dam

The flow of high sulphate content in the affected seepage holes of Drainage & Grouting (D&G) galleries of Pandoh Dam is in stabilized condition. The report of ultrasonic pulse velocity test as conducted by Central Soil & Material Research Station (CSMRS) from 4/1992 to 4/1995, 11/1995 to 6/1996, 1/1998, 3/1999, 3/2000, 4/2004 and test carried out during May-2006 & 4/2010, 6/2013 conclude that no significant deterioration of concrete quality has taken place with the passage of time.

The overall quality of concrete is good. However at certain locations where SO4 content is high & also the pulse velocity was low two No concrete cores 75 mm were taken out as per the advice of the technical committee of experts, BBMB (I.W.) in its 7th meeting held at Chandigarh on 29-07-1999.

These cores were sent to Central Soil & Material Research Station (CSMRS) New Delhi for analyzing the same and the results were found quite favorable. CSMRS has also been conducting water quality test in various D&G galleries since 1991.

CSMRS has also carried out chemical analysis test for three consecutive years from 2000 to 2002.

The final report regarding the investigation also reveals that not much change in PH & sulphate has been noticed over the years, rather the concentration of sulphate in most of the holes has decreased.

Since the quality of concrete has proved to be the good as revealed from testing the compressive strength of 2 No. cores and also from the compressive strength of concrete cylinders placed under sulphated water which are tested after an interval of two years, as such the situation does not warrant any worry.

7. Inspection of Permanent Plug

The inspection of the diversion tunnel and its permanent plug is to be carried out after every 3 years. After Silt/ Mud cleared from the diversion tunnel inspection was carried out. No abnormality was observed in the tunnel, the plug was found intact and also there was no leakage from the plug. Depth checking of all the drainage holes provided in 120 No. rings upto the plug was also done. All the holes were functioning well. The work was started on 27-10-2022 & has been completed on 08-11-2022.

After the inspection of the plug the exit portal of the diversion tunnel the gate of the diversion tunnel locked and after that the gate also blocked with Katcha Hollow block masonry.

8. Protection work around Relief well No. 4 & 5

Some of the stone filled wire crates near relief Well No. 5 had been damaged during the flood season of 2022 and the same had been repaired. All other protection works at Relief Well No. 4 & 5 are in good condition.

9. Channelization work downstream river of Beas:-

The Channelization work D/S River of Beas has been done before monsoon season 2023.

10. Siltation of Pandoh Reservoir

Pandoh Reservoir has a gross storage capacity of about 4100 Hect.m (33240 Ac.ft.) and live capacity of 1855 Hect.m (15039 Ac.ft.) at its maximum reservoir level of El.896.42 m (2941ft.). The latest sedimentation survey of Pandoh Reservoir carried out during June, 2022 indicates that the net silt deposited in the Pandoh Reservoir was of the order of 61.05 Hect.m (494.90 Ac.ft.) for the period under report.

11. Flushing Operation:-

Flushing Operations of Pandoh Dam reservoir has been done on dated 11.08.2022 to 12.08.2022.

12. Painting of Gauges at Various Discharge Sites :-

The painting work of Gauge & Discharge sites except Parvati at Bhutnar, Beas at Bhunter & Beas at Manali has been completed. Painting work of pending Gauge will be done before monsoon 2023.

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13. Samla Adit Gate :-

A routine checking of samla Adit is regularly done as per scheduled. All the components parts of the gate were thoroughly cleaned, painted and greased to avoid any rusting/ damaged no leakage was noticed.

14. EOT Cranes of 10 Ton Capacity :-

Both EOT Cranes are working satisfactory. The Painting work of EOT Crane was carried out.

15. Electric Installation:

All the permanent electric installations installed at various location of pandoh dam remained intact during the period under report as such no abnormality observed.

16. Problem of Excessive Sulphate Contents in Seepage Water of galleries / Tunnels of Pandoh Dam

The problem of sulphate contents in seepage water is being monitored regularly. The flow of high sulphate content in the affected seepage hole of D & G Galleries of Pandoh Dam is in stabilized condition. The Ultrasonic Pulse Velocity tests conducted by the CS & MRS, New Delhi during March, 2021 showed that no significant deterioration of concrete quality has taken place with the time over the monitoring period. The overall quality of concrete is good.

17. Flushing of Pandoh Baggi Tunnel intake pocket.

In order to prevent the entry of bed material and to minimize the ingress of silt into PBT, one flushing operation of PBT intake pocket was carried out from 11.08.2022 to 12.08.2022.

18. Repair of Pandoh Spillway

After the flood season of 2021 the repairs of Pandoh Spillway were carried out and an area of 353.16 sq. mtr. was repaired as per practice in vogue.

19. Protection Works Downstream of Pandoh Spillway

Some damage has occurred to wire crates provided along the Samla complex from RD-600 to RD-4200. All other protection works are in good condition.

20. Emergency Gates of Baggi Control Works

During the annual maintenance of right and left bays of Baggi Control Works stilling basin, the leakage of all the emergency gates was normal. General maintenance of mechanical works, stop logs etc. has been done as per normal procedure & schedule.

21. Silt ejector of Sunder Nagar Hydel Channel

The silt ejector at RD 1364.59 m (4477 ft.) of Hydel Channel was operated during the monsoon period from July, 2022 to September, 2022 with discharges varying from 7.078 to 14.158 cumecs (250 to 500 cusecs). The total quantity of silt ejected was 5.98 Hect.m (48.50 Ac.ft.).

Running of silt ejector during rainy season remained satisfactory.

22. Silt observation in the Balancing Reservoir

During the period July, 2022 to September, 2022, the three dredgers have removed 91.06 Hect.m (738.21 Ac. Ft.) of silt from balancing reservoir. As per silt survey carried out in 2022, the balance silt deposit at the end of period was of the order of 117.10 Hect.m (949.38 Ac. Ft.)

23. Penstock Headers & Branches

Routine maintenance regarding Penstock Headers, Branches and dresser couplings has been carried out. Nothing abnormal was noticed.

B. BAGGI AND SUNDERNAGAR HYDEL CHANNEL

1. BAGGI CONTROL WORKS

Instrumentation – Piezometers

Observations on piezometers installed in Baggi Control Works, for different gate combination/openings and Pandoh Reservoir levels indicate that all the observed pressures are positive and no negative pressures have been recorded anywhere. It is observed from the presently available data that for the same combination of gates, the positive pressure gets reduced with increase ingate opening.

Stilling Basin

Likewise every year, the annual inspection and repair of stilling basin of Baggi Control Works L/side and R/side bay was done from October,2022 to April, 2023. During this year, it has been observed that there has been damages in previous year repaired portion on glacis floor in right bay of stilling basin i.e. in front of Gate no. 2 of glacis portion of stilling basin. It was also observed that glasic floor damage pattern has somewhat also extended towards left side i.e. in front of divider wall of Gate No. 1 & 2 . Total damages area in left bay was of approx. size 4-5 sqm and depth upto 50-100 m. These damages have been repaired with high strength micro concrete, However, no damages observed in the left bay of stilling basin. The stilling basin repair was completed in 3rd week of March, 2023 and both bays have been made operational. Assessment of repair done

during 2022-23 will be done after the end of monsoon season 2023-24 and accordingly report will be submitted further.

Emergency and Regulating gates:

During this year periodical maintenance of Gate No. 4 was scheduled but previous year during lowering of Emergency Gate No. 3 in Bonnet Box (after its periodical repair & maintenance), the side seal of gate was got disturbed and hence during July 2022, Gate No. 3 was again taken out from bonnet box and required repair and maintenance was done and lowered into the bonnet box. However due to shortage of time, periodical maintenance of Gate No. 4 has been rescheduled in year 2023-24. It is pertinent to mention here that Emergency Gate No. 4 is working properly and no leakage has been observed from this gate but leakage from side seal of Emergency gate No. 3 is still persisted and hence it has to be repaired rectified during this year monsoon.

Maintenance of all 4 no. regulating gates was taken up between October 2022 to March 2023 and during the maintenance of the gates, the steel liner in both bays was also checked. All 04 no. regualitng gates were inspected in position one by one. The bottom rubber seals and side bronze seals of gate no. 1, 2 & 4 was checked and necessary repair and rectification/maintenance was done. However, repair and maintenance of bottom seal of regulating gate No. 3 could not be done due to significant leakage from Emergency Gate No. 3. Coat of epoxy paint applied on all 04 No. regulating gates & steel liner of conduit box no. 1 to 4.

2. Functioning Of Mechanical Installation

The general performance of dewatering system of drainage gallery, both the gentry and EOT Cranes, stop logs and other Elect. & Mech. installation at Baggi Control Works has been found satisfactory during the period under report. Calibration and testing of 01 No. Gantry crane, 2 No. EOT Crane and 08 No. hoists of Baggi Control works was carried out in the month of August, 2022. Polysuphide based epoxy coating on stop logs (used for closing the stilling basin bay during its annual repair) has been carried out during this year. Average life of this coating is approximately 4-5 years and this will save the recurring expenditure of

manpower and material on every year painting of stop logs.

3. Baggi By Pass Emergency Gate

The water leakage from Baggi Bye Pass Emergency Gates was observed regularly and found as NIL. Leakage from tail race stop log remained under control. However the seepage of tunnel, measured varying from 1.70 LPM to 10.20 LPM during the year 2022-23.

4. Baggi By Pass Tail Race Stop Logs

Performance of Baggi Bye Pass Tail Race Logs was satisfactory. Water leakage observed during the year was normal.

5. Electric Power Supply Arrangement

Electric power supply of BCW, Baggi complex, Silt Ejector & Rest Camp was maintained properly. All electric equipments like transformers, panels, circuit, breaker and generators worked satisfactorily during the year.

6. Silt Ejector at RD 1364.56 Mtr. (4477')

Surface pitting in silt ejector outfall channel was repaired with the epoxy mortar. The detail of running silt ejector and quantity of silt ejected during rainy season 2022-23 is tabulated as below:-

Month	Working Hours	Quantity of silt ejected		Discharge passed through	
		Hect. Mt.	Ac. Ft.	Cumeces	Cusecs
7/22	672	3.45	28.0	7.078 to 14.158	250-500
8/22	744	2.22	18.0	7.078 to 14.158	250-500
9/22	720	0.31	2.50	7.078 to 9.910	250-350
Total	2136	5.98	48.50		

7. Dewatering From Drainage Gallery

All the pumps installed for disposal of leakage water from BCW drainage gallery worked smoothly. Maintenance of these pumps was carried out from time to time. Leakage water of drainage gallery, bye pass tunnel & bye pass tail race was disposed of in the Hydel Channel with the help of these pumps.

8. Hydel Channel and Its Associated Components

The Sundernagar Hydel Channel starts from RD 0 at BCW Baggi and

ends at RD 11800, TCM, Sundernagar. There exist 16 aqueducts and one super-passage, which are inspected regularly by the field staff. Functioning of hydel channel has been good and smooth during the year 2022-23 and there has been no damage observed of inner lining. However, a localized erosion of outer slope of left embankment at RD 5000 has occurred on 19.08.2022. Localized sloughing occurred and outer embankment sloper of the channel and the same was immediately attended by covering with polythene sheets. The damaged portion has been temporarily restored by re-filling of earth soil and its manual compaction. Toe wall in some length has also been constructed departmentally. However, the slope of embankment in this reach is inadequate due to which this reach is prone to sloughing and therefore for permanent restoration, PCC block pitching by laying precast concrete block of size (300 x 300 x 40 mm) in cement concrete 1:2:4 over 50 mm filter media and spalls on outer embankment slope will be done.

All x-drainage works structure are in good condition and functioning well. All seepage points are being observed regularly. Leakage in the barrel of the Nagwain aqueduct at RD 9724.34 M SNHC observed during the year remained @+/- 28 to +- 32 Ltr./min constantly and no significant change has been observed during the period. The Leakage point at Nagwain aqueduct is also being observed daily and data of observed seepage/leakage of all seepage points is being regularly sent to Directorate Design BBMB Nangal.

- **Sundernagar Hydel Channel Internal Activity**

1 Epoxy treatment has been done.

2 All the side slopes drain, parallel drain, toe drain and outfall are properly repaired.

3 All the aqueduct barrels maintained properly.

4 All heavy machinery are in working condition.

9. Tail Control Structure

i. Intake wells :-Both side intake wells of Ropa Tail Control (RTC) gates has been checked and found free from silt.

ii. Pilot valves:- Both side Pilot valves has been checked and functioning properly.

iii. Hoist Assembly:- Gear oil of main gears and warm gears has been changed and other mechanical parts has been cleaned and greased properly.

iv. Gates:-Ropes, gears, pinions and other relating components of the gates were checked properly and found ok.

v. Gallery:-Gallery was checked properly and Sluice valves provided in the gallery found ok.

vi. Painting work:-Polysulphide based epoxy coating done on RTC gated is intct and in good condition.

vii. Lighting System:- The energy effeiceint LED street lights are working properly and electrical operation of RTC gates in Control Room has been checked and found

viii. D.G. Set:- 125 KVA D.G. Set at BCW and 40 KVA DG Set at Tail control are in operational condition and are working properly.

C. **Elect. & Workshop Division BBMB, Sundernagar**

1. **Hem Sub Division, BBMB, Sundernagar:-** This sub division is responsible for carrying out the major repairs/overhauling of HEM Machinery i.e. Crane, Trailors, Poclains, Crawler dozers, Wheel dozers, Motor Graders Front and Loaders, Tugs and Dredging equipments etc. Providing cranes and trailors for shifting of heavy earth moving machinery/equipment and other misc, jobs as per requirement all machinery jobs pertaining to mechanical items.

2. **Autoshop & Transport Sub Division BBMB Sundernagar:-** This sub division is entrusted of running repairs major /overhauling etc. of the heavy/light transport vehicles i.e. Cars, Tavera, Bolero, Buses, Trucks, Tippers, Fire Tenders, Tata Mobile 207/28, Ambulance vans etc. and providing lubrication services to all HEM machinery. Transportation of staff and labour to different sites of the project i.e. Baggi, Kansa, Tail Control, B.R. area, College going students to Chatrokhari and staff of D.P.H. Slapper on job order basis of Power Wing. All the light vehicles like Ambulance, Cars, Jeeps, Tavera, Bolero etc. required for the inspection of works by the Project Officers and VIP's are under the control of this Sub Division.

3. **Commercial Sub Division, BBMB Sundernagar:-**

This Sub Division is entrusted with the un-interupted electric supply to residential and N.R. Building of Sundernagar complex and field sites. It is responsible for the following works.

i) Maintenance repair of H.T. & L.T. transmission lines in BSL Colony S/Nagar etc. Mtc. of H.T. lines from Sundernagar to Baggi, Ropa, Pung and Harabagh area.

(ii) Maintenance and repair of transformers sub-station control pannels and switch gears.

iii) Maintenance repair of elect. Wiring in R & NR building at Sundernagar Complex.

iv) Maintenance & replacement of elect. Wiring, street light and proper lighting arrangements for watch and ward of Govt. property at Sundernagar Complex.

v) Running and repair of public addressing system, air conditioner, air coolers and water gysers.

vi) Billing of all R & NR building and collection of such charges on account of electric consumption.

4. Dredger operation and Maintenance, Sub Division, BBMB Sundernagar:-

This Sub Division is responsible for the operation & maintenance of 3 No. Dredgers, 2 No. Tugs, allied equipment.

DREDGING WORKS

S. No.	Description.		Qty. (Ac.ft.)
1	Previous Balance as on 30.09.2021	-	424.648 Ac.ft.
2	Total silt entrapped in BR during the period 01.10.2021 to 30.09.2022.	-	797.322 Ac.ft.
3	Total silt in B.R.	-	1221.970 Ac.ft.
4	Total silt dredged out during the period 01.07.2022 to 30.09.2022.	-	738.025 Ac.ft.
5	Balance silt in B.R. as on 01.10.2022	-	483.945 Ac.ft.
6	Detail		
	Dredger	Working Hours.	Silt Dredged Out.
	IHC-1500 Dredger.	563.75	163.04
	FL-1800 Dredger.	1370.75	459.76
	IHC-996.	357.00	115.22
	Total	2251.00	738.025
(i)	Overhauling of Main Engine D-399 of IHC-1500 Dredger has been carried out from M/S GCPL during the year 2023.		
(ii)	Overhauling of Engine 3508 of IHC-996 Dredger has carried out from M/S GCPL during the year 2023.		
(iii)	2 Nos. Spud Ram of IHC-996 has installed during the year 2023.		
(iv)	1 No. Spud Ram of IHC-1500 Dredger has installed during the year 2023.		

D Balancing Reservoir complex Sundernagar

1. **Balancing Reservoir Complex:-** All the components of various works such as Suketi Diversion, drainage works and SST intake Structure have functioned normally/satisfactory. General repair of these works carried out regularly to keep these components for proper working conditions.

2. **Palace Nallah and drift Nallah:-**Muck/gravel material deposited in the above Nallahs during monsoon of 2022 has been got cleared by deploying Poclain Shoval and Tipper etc.

3. **Inspection and Mtc. of syphon Escape:-**The syphon escape did not function during the period under report, as the water level in BR remained below EL2764'. However nothing abnormal has been observed and the syphon escape is being maintained properly.

4. **Suketi Diversion Channel:-**

   Work for repair of damages of Suketi Diversion Channel during rainy season from RD-0 to RD-7800 (in various phases) is under process and shall be completed before monsoon-2023.

5. **Harabag Complex:-** All the components/instruments in the Adit maintained properly. The discharge from weep holes in the Adit running normal. Greasing and oiling to the chain and other instruments and painting etc. done as per maintenance schedule.

6. **Pung Intake structure:-**

   The floating trash barrier has been placed at section 10-A- 10 A of Balancing Reservoir to curb the ingress of trash at Pung Intake Structure. The floating trash which accumulated near the Pung Intake Structue, have been removed as and when required during the year as a routine work for free flow supply of water to Dehar Power House. Also a floating Trash Barrier has been placed at Section 10A-10A of B.R. for reducing ingress of trash at SST Intake Structure during monsoon. All the gates in 6 No. bays of the SST Intake Structre has been removed, cleaned and placed back in a record time.

E. Slapper Complex

1. Mechanical Works

Penstock Section By-Pass:- Routine Maintenance / checking of Penstock Headers 1 to 3 & its Branches 1 to 6 have done as per schedule. The repair of dresser coupling of DPH Unit-II and replacement of rubber gaskits was done during 01.02.2023 to 10.02.2023.

Emergency Gate And Regulating Gate Of Bye Pass Chute:- Routine maintenance & checking of emergency gate and regulating gate was carried out as per schedule.

Stop logs And 30 Ton Semi-Goliath Grane:- Routine maintenance of Penstock & Bye-Pass Tunnel, Stop logs and 30 ton Semi Goliath Crane was carried out as per schedule. Repair and maintenance work of Pannel of Semi-Goliath Crane was completed on 14.10.2022 as special work.

Auto Shop:- All the vehicles running smoothly.

2. Civil Works

Surge Shaft Complex:-

All the benches behind Surge Shaft have been cleaned from muck & bushes. All the drains along with road leading to surge shaft from main gate BBMB Colony have been cleaned and repaired wherever needed.

Dehar Power House Area:- All the benches behind Dehar Power House have been cleared from bushes. Washing of drainage holes at Dehar Power House have also been done as per maintenance schedule. All the drains/ Nallah behind Dehar Power House have also been cleared.

3. Electrical Works

Commercial Sub Division is entrusted with repair & maintenance of Electrical Works at Slapper Complex and receiving of electric supply from HPSEB and distributing the same to various works & BBMB Colony during the year work executed successfully.

Apart from the above routine maintenance of internal wiring of residential & non-residential buildings, maintenance of street lights, Transformers, HT/LT lines and control panels of Semi Goliath crane EOT crane & Regulating/ emergencies gates and maintenance of electrical works at Harabagh Complex was done during the year.

6.2.2.2 Beas Project Unit-II (PONG Dam)

1. Processing of observed data from various instruments/devices installed inside and outside body of Pong Dam indicates that the structural behavior of Pong Dam has been quite normal during the period 2022-23.

Monitoring of the behavior of Pong Dam, various components of Pong Dam & Power Plant, with the help of data observed on various instruments /devices was done and it was found that structural behavior of these works has functioned quite satisfactory.

2. Crustal Deformation along the Periphery of Pong Reservoir:

Observations of bench marks elevation fixed along the periphery on right & left side of reservoir up to 15 km length was taken during May/June & October/November 2022 and the report in this regard stands submitted to Directorate Design, BBMB Nangal.

3. Sedimentation of Pong Reservoir:

The inspection of monuments, burjies and jungle clearance was done during the month January 2023.The work of sedimentation survey in Pong reservoir was carried out from January 2023.

Sediment survey of Pong reservoir carried out during 2021-2022 has revealed that average annual rate of siltation from year 1974 to 2022 (48 years) works out to 24.09 Mm^3 (19532 Ac.ft) against the design figure of 25.29 Mm^3 (20500 Ac.ft.). The average silt yield/annum/ sq.mile of catchment area (1974 to 2022) works out to 4995.59 m^3 (4.05 Ac.ft). The

average trap efficiency during 1975-76 to 2021-22 is about 97.45%. The percentage of total sediment deposited is 26.37 in dead and 73.63 in live storage of the reservoir.

4. Irrigation outlet tunnel

The visual inspection of exposed portion of civil structure and protection work of exit channel of T-1 & T-2 outlet tunnels was carried out. The unwanted jungle & weed growth is being removed regularly. Widening and excavation of drain has been made for the removal of surplus water from downstream area of T-1 & T-2 outlet tunnEL

6.2.3 Dam Safety Activities

- The pre-monsoon and post monsoon inspection of various unit of Beas Dam Unit-II was carried out and nothing abnormal was observed.

- **The implementation status of recommendation of 5th Dam Safety Committee was also reviewed and monthly status report has been submitted to the quarter concerned regularly.**

- The Annual Pre-monsoon and Post-monsoon inspections for the year 2022 of various units of Bhakra Beas Complex was carried out by field engineers and nothing abnormal was reported.

- The Dam Safety Review Pannel (DSRP) carried out supplementary inspection of all four dams of BBMB as the necessity was being felt to undertake new rehabilitation and improvement works and also to re-adjust the existing works to formulate beneficial proposals. The discussions with worthy Chairman, BBMB and other officers of BBMB including inspection of Bhakra Beas Complex was conducted from 11.12.2022 to 16.12.2022. The DSRP supplementary Inspection Reports of all four dams of BBMB was submitted to CPMU of CWC and the World Bank through Board Office during January 2023.The World Bank have received official letter from DEA, GOI for inclusion of BBMB into DRIP-II in December, 2022. As a part of Bank process, the World Bank Team & CPMU have carried out the appraisal of BBMB for readiness during February 2023. BBMB has fulfilled at the readiness criteria of the World Bank and is about to formally come on board DRIP-II. BBMB as a borrower may sign Loan Agreement & Project agreement with the World Bank on invitation which is expected shortly.

- The Anuual Consolidated Health Status of all Dams under BBMB for the year 2022 was satisfactory and the Annual Health Status Report has been submitted to all concerned during April, 2023.

- The recommendations/observations made by all the Dam Safety Committees (DSC's) is being monitored regularly on quarterly basis by Dam Safety Directorate, BBMB, Nangal and quarterly progress report is being submitted to higher authorities.

- The International Dam Safety Conference was organized by CWC & ICOLD during October, 2022 at Jaipur and four officers from BBMB participated in the conference for capacity building of the organization.

6.2.4 BBMB Hospitals

BBMB hospitals are providing outdoor as well as indoor medical facilities to the employees of BBMB as well as to the general public of the area. Sufficient diagnostic aids like X-Ray, pathological investigations i.e. HB/TLC/DLC/ESR/BT/GT, Urine, Blook Suger/Urea, S.Bilirubin, Chlesterol, S.Cretatinine, VDRL, Blood Group, HBs Ag and other various pathological investigation are being conducted in BBMB Hospitals laboratories. In addition to this ECG, physiotherapy, ultrasound , Dialysis work and other facilities like blood transfusion are being provided. Revised National T.B. Control Programme (RNTCP), Immunization Programme, etc. are also being run. In Dental Department, Eye Department, I.O.L. operations are being performed. Public health care and family welfare facilities are also being provided in the hospitals.

6.2.5 Visitors

During the year 2022-23 about 245 visitors visited Pong Dam. However keeping into consideration the security aspect of the Dam, limited permits are being issued to the visitors after properly scrutinizing the relevant documents (I.D. Proofs etc.)

6.2.6 Mechanical Division

At Beas Dam site floating jetty amounting to Rs. 16.10 lacs has been successfully procures for the field staff for the purpose of safe boarding and de-boarding the motor boats. The platform of floating jetty provides the facility for the works of closure and maintenance of irrigation outlet tunnel T-1 & T-2, penstock Tunnel P-1, P-2 & P-3. It was very difficult to load and unload the material from the motor boats. After the installation of floating jetty, the works of loading & unloading material became very easy and there will be saving of time. The works of closure & maintenance of irrigation tunnel T-1& T-2 penstock tunnel P-1, P-2 &P-3 will be done timely. This floating jetty will provide the safe and convenient platform for the officers to access the motor boats for the above said closure and maintenance works.

Hence, the platform of this floating jetty is very useful for the working of staff, loading and unloading material, accessing the survey station fixed the reservoir and definitely for the future perspective.

6.3 NATIONAL HYDROLOGY PROJECT

MOWR, Govt. of India in association with World Bank has initiated, National Hydrology Project (NHP) in India to carry forward the work and objectives of Hydrology Project Phase-II under the NHP. To this effect, BBMB has been

allocated Rs. 25.00 Crore for strengthening and expansion of existing Data Acquisition system (DAS), development of alternate models and technology enhancement along with capacity building in the organization to achieve better results.

Bhakra Beas Management Board (BBMB) has set up Earth Receiving Station (ERS) at Chandigarh for inflow flood forecasting (i.e. short, medium, long term upto seasonal) for optimum utilization of Bhakra and Pong Reservoirs and Canal Network. BBMB has been the 'first mover' in the country under the World Bank funded Hydrology Phase-II project. Under this project, 87 no. Real Time Data Acquisition stations comprising Automatic Rain Gauge Stations, Automatic Full Climate Stations, Snow Water Equivalent, Water Level Recorders etc. and 10 No. Automatic Stage Recorder at Contact Points of Partner states have been installed in the catchment of River Sutlej and Beas by using state of the art technology. In addition to this 6 No. Meteorological stations have also been co-opted with IMD. The schematic arrangement of Real Time Decision Acquisition System involves real time transmission of Hydro meteorological data through INSAT-3D at 1 hour interval to Earth Receiving Station at Chandigarh.

The existing RTDAS Network is being upgraded through two no. contracts. While one contract involving installation of 21 nos. RTDAS stations, is in advance stage of execution, the execution of other contract for installation of 85 nos. stations shall start in near future.

Real Time Data is processed using Rainfall Runoff Model, Hydro Dynamic Model, Flood Model and Water Allocation Model of MIKE software. Renowned agencies of meteorological forecasting (GFS, ECMWF, NCMRWF, IMD etc) are used in monsoon season to forecast the inflow to reservoirs. The station telemetry data, model output and long term scenarios is further shared on NHP Dashboard.

6.4 INFORMATION TECHNOLOGY

Issues handled are as under:-

1. Application Software Package.

BBMB has implemented various MIS application software packages i.e. HRMS, Payroll, Financial Accounting, Budgeting, Bank Reconciliation, GPF/CPF Accounting, Special Energy Meters MIS Application, BBMB's Intranet, Irrigation Power MIS Application, Visitor Pass Management Application, Pension Papers Tracking Application, Legal Cases MIS Application, e-Library Application etc.

2. Implementation of e-Office in BBMB.

e-Office, a Mission Mode Project under the National e-Governance Programme (NeGP) of GoI has been implemented in BBMB.

3. Procurement through GeM Portal.

The procurement through GeM Portal has been implemented in BBMB. Regular training of users on the latest features available on GeM are being conducted.

4. e-Reverse Auction.

The e-Reverse Auction (e-RA) has been implemented for all tenders with threshold value of Rs. 10 lakh (Rs.Ten Lakh).

5. e-Tendering/e-Procurement

BBMB on-boarded GePNIC portal of National Informatics Centre (NIC) for e-Tendering/ e-Procurement activities. All the tenders by various offices of BBMB above a threshold value of Rs. 2 lakh (Rs. Two Lakh) are invited through e-Procurement/e-Tendering system.

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भाखड़ा ब्यास
राष्ट्र गौरव

अध्याय-7

Chapter-7

जल-विद्युत अध्ययन

Water-Power Study

7.1 Actual Operation of Bhakra Reservoir for the Period From 01.04.2022 to 31.03.2023 (Month-wise).

Information regarding total power available from Bhakra Complex, Generation from Dehar Power Plants w.r.t. inflows received in Satluj as well as releases from Bhakra Reservoirs for the period 01.04.2022 to 31.03.2023 (month-wise) is depicted in the table below :-

Month	Period	Inflows					Gains / losses between Nangal and Ropar	Delhi Jal Board	WJC Contri-bution	Releases from Bhakra Reservoir	Closing Reservoir Level	Average Power from Bhakra Power House		Average Power from Ganguwal & Kotla Power House		Total Power available from Bhakra Complex		Generation from Dehar Power Plant
		Sutlej	BSL			Total Col. (3+6)												
			Dehar Power House	Bye Pass Chute	Total Col. (4+5)													
		Cs.	Cs.	Cs.	Cs.	Cs.	Cs.	Cs.	Cs.	Cs.	Ft.	MW	LU	MW	LU	MW	LU	LU
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Starting Reservoir Level Ending 31-03-2022=1570.30 feet																		
April,2022	01-10	7073	4535	0	4535	11608	-300	496	0	10546	1572	304	73	103	25	407	98	87
	11-20	6900	4229	0	4229	11129	-300	496	0	12409	1570	369	88	103	25	472	113	81
	21-30	6737	3985	0	3985	10722	-300	496	0	17008	1563	485	116	105	25	589	141	77
May	01-10	9446	4393	0	4393	13839	-600	496	0	19226	1557	538	129	149	36	687	165	84
	11-20	14297	7011	0	7011	21308	-600	496	0	19619	1559	546	131	147	35	693	166	130
	21-31	8729	4739	0	4739	13468	-600	496	0	12493	1561	361	87	139	33	499	120	92
June	01-10	12771	5846	0	5846	18617	-600	496	0	13697	1566	402	96	144	35	546	131	109
	11-20	14244	6503	0	6503	20747	-600	496	0	19847	1565	578	139	149	36	727	175	121
	21-30	13433	5883	0	5883	19316	-600	496	0	30089	1555	838	201	149	36	987	237	109

July	01-10	30005	8406	0	8406	38411	1000	125	779	26710	1570	749	180	149	36	898	215	146
	11-20	31921	8480	0	8480	40401	1000	125	980	24251	1586	706	169	147	35	853	205	148
	21-31	34489	8455	0	8455	42944	1000	125	1785	14667	1612	469	113	142	34	611	147	145
August	01-10	39004	7130	0	7130	46134	1000	125	2029	15794	1631	551	132	127	30	678	162	127
	11-20	49479	7527	0	7527	57006	1000	125	1844	19633	1654	695	167	150	36	845	203	131
	21-31	35048	8424	0	8424	43472	1000	125	250	23448	1664	826	198	150	36	976	234	146
Sep,2022	01-10	25413	8445	0	8445	33858	0	125	727	24407	1668	871	209	148	36	1020	245	145
	11-20	18615	7847	0	7847	26462	0	125	1925	26617	1668	956	230	150	36	1106	265	137
	21-30	19180	8205	0	8205	27385	0	125	913	18809	1673	692	166	138	33	830	199	143
Oct.	01-10	11092	5891	0	5891	16983	0	496	0	14669	1674	556	133	150	36	706	169	106
	11-20	10778	5557	0	5557	16335	0	496	0	21644	1671	790	190	144	35	935	224	101
	21-31	7040	3553	0	3553	10593	0	496	0	10982	1671	411	99	118	28	529	127	66
Nov.	01-10	6511	2891	0	2891	9402	0	496	0	10880	1670	395	95	103	25	498	120	54
	11-20	5479	2661	0	2661	8140	0	496	0	9326	1669	343	82	101	24	443	106	50
	21-30	5212	2271	0	2271	7483	0	496	0	15806	1664	573	137	140	34	712	171	43
Dec.	01-10	5590	2104	0	2104	7694	100	496	0	26265	1654	912	219	149	36	1061	255	40
	11-20	4855	1888	0	1888	6743	100	496	0	25372	1644	878	211	150	36	1027	247	36
	21-31	4001	1729	0	1729	5730	100	496	0	20187	1635	708	170	149	36	857	206	33

Jan,2023	01-10	3734	1600	0	1600	5334	200	496	0	11192	1631	383	92	124	30	507	122	30
	11-20	3858	1657	0	1657	5515	200	496	0	11341	1628	384	92	126	30	510	122	32
	21-31	3442	1578	0	1578	5021	200	496	0	14674	1621	504	121	147	35	651	156	30
Feb.	01-10	4132	1601	0	1601	5733	400	496	0	15800	1614	534	128	149	36	684	164	32
	11-20	3572	1679	0	1679	5251	400	496	0	16281	1606	539	129	150	36	689	165	34
	21-28	4271	1870	0	1870	6141	400	496	0	17242	1599	561	135	149	36	710	170	36
March	01-10	4684	1606	0	1606	6290	200	496	0	15934	1591	511	123	149	36	660	158	32
	11-20	4604	1547	0	1547	6151	200	496	0	15830	1583	491	118	149	36	640	154	32
	21-31	4235	2138	0	2138	6373	200	496	0	9602	1580	296	71	107	26	403	97	43

7.2 Actual Operation of Pong Reservoir for the Period From 01.04.2022 to 31.03.2023 (month-wise).

Information regarding total power available from Pong Power Houses w.r.t. inflows received in Beas as well as releases from Pong Reservoirs for the period 01.04.2022 to 31.03.2023 (month-wise) is depicted in the table below:-

Month	Period	Inflows at Pong	Gains or losses between Pong & Mandi Plain	Net Diversion Ravi to Beas	Releases form Pong Reservoir	Closing Reservoir Level	Generation from Pong	
		Cs.	Cs.	Cs.	Cs.	Ft.	MW	LU
1	2	3	4	5	6	7	8	9
Starting Reservoir Level Ending 31-03-2022 =1322.60 feet								
April,2022	01-10	1741	0	1850	829	1323	14	3
	11-20	1231	0	2657	2288	1322	39	9
	21-30	1447	0	4514	2577	1322	44	11
May	01-10	1619	-500	4428	2950	1321	51	12
	11-20	1900	-500	1700	2720	1321	46	11
	21-31	2203	-500	2406	8579	1316	143	34
June	01-10	2731	-500	5210	11178	1311	187	45
	11-20	1393	-500	3665	13784	1302	225	54
	21-30	3517	-500	3596	13620	1297	207	50
July	01-10	20098	1125	2769	10952	1304	166	40
	11-20	29928	1125	2598	7625	1318	125	30
	21-31	29318	1125	1765	6013	1335	103	25
August	01-10	45191	1125	2050	5245	1350	96	23
	11-20	55991	1125	7459	6907	1377	133	32
	21-31	49973	1125	6785	15802	1383	324	78

September	01-10	20781	1125	3808	15258	1385	318	76
	11-20	10632	1125	2254	16155	1383	336	81
	21-30	17763	1125	2091	11058	1385	231	55
October	01-10	6317	750	6412	10571	1384	222	53
	11-20	5273	750	3389	4032	1384	85	21
	21-31	3129	750	5106	11212	1381	234	56
November	01-10	2602	375	4516	11452	1378	237	57
	11-20	2418	375	3357	12083	1374	247	59
	21-30	3034	375	2002	13000	1371	262	63
December	01-10	2532	375	1792	9396	1368	186	45
	11-20	1930	375	1573	9731	1365	194	47
	21-31	1745	375	4023	9097	1362	179	43
January-2023	01-10	1577	375	3576	11135	1358	216	52
	11-20	1876	375	6133	7577	1356	145	35
	21-31	3918	375	225	13096	1351	248	60
February	01-10	1942	375	2149	11792	1347	221	53
	11-20	2615	375	2979	12874	1342	237	57
	21-28	3459	375	3372	13090	1339	237	57
March	01-10	3292	375	4387	12220	1334	219	53
	11-20	2973	375	4073	11922	1330	212	51
	21-31	2909	375	1507	3595	1330	63	15

अध्याय-8

Chapter-8

पुरस्कार एवं सम्मान

Honours and Awards

8.1 THE AWARDS WON BY BBMB DURING THE YEAR 2022-2023

1. Power Sector Award

- BBMB received the “Best Hydro Power Generator – OUTPUT>25MW, OUTPUT<25MW” award at the IPPAI Power Awards ceremony 2022 held at Belgaum, Karnataka on 09.04.2022.
- Chairman BBMB received “CBIP Individual Award 2022” for outstanding contribution for development of the Water, Power & RE Sector from Sh. R.K. Singh, Hon'ble Union Minister of Power, New & Renewable Energy on 03.03.2023 in New Delhi.

2. Sports Awards

- BBMB Men's Team won Gold Medal in the 25th Inter-CPSU Volleyball Tournament held at Visakhapatnam on 12.04.2022.
- BBMB Women's and Men's team won Bronze Medal in the 27th Inter-CPSU Chess Tournament held on 29.04.2022 at Delhi.
- In the meeting of the Central Sports Committee held on 24.05.2022 in New Delhi, BBMB won the Overall Trophy in the sports competitions organized by the Inter Central Power Sports Unit of the country's power units under the Ministry of Power.

3. Hindi Award

- Bhakra Beas Management Board won the first prize in 'B' region under Rajbhasha Kirti Puraskar for best implementation of Official Language Policy during the year 2021-22. On September 14, 2022, on the occasion of Hindi Day, the Chief Guest, Mr. Amit Shah, Hon'ble Minister for Home Cooperation, Government of India, at the 2nd All India Official Language Conference organized at Pandit Deendayal Upadhyay Indoor Stadium, Surat (Gujarat) by giving the first Rajbhasha Kirti Award to BBMB Was honoured.
- Narakas (C-1), Chandigarh awarded 1st and 2nd prize to BBMB for excellent work in Official Language during the year 2017-18 and 2019-20 respectively.

- Department of official language Ministry of Home Affairs, Government of India organized a Raj Bhasha Sammelan and prize distribution function (for the offices of North Zone-I and North Zone-II) on 03-11-2022 at Amritsar (Punjab). During this prize distribution function, Chief Engineer/System Operation (for the year 2020-21) & Director/P&D (PP), BBMB Chandigarh (for the year 2021-22) received first and third prize respectively. The prize was received by Chief Engineer/System Operation, BBMB, Chandigarh Sh. B.S. Sabharwal and Director P&D (PP) Sh. Harpreet Singh Manocha. In this function Smt. Sheela Devi, Hindi Translator and Smt. Bhagwati Bai, Hindi Translator were also honoured with appreciation letters by the department of Official Language for their performance.

अध्याय-9

Chapter-9

पर्यावरण प्रबंधन

Environment Management

9.1 Environment Management

Environmental Appraisal of river valley projects was initiated in 1979 as an administrative requirement but was subsequently made mandatory by Govt. of India in January 1994 through a notification of Impact Assessment. New river valley projects including hydel power, major irrigation and their combination including flood control are required to obtain environmental clearance as per Gazette Notification No. S.O. 60 (E) dated January 27, 1994 (subsequently amended) covering both preventive and mitigative measures. The present Environmental Impact Assessment (EIA) /Environment Management Plan (EMP) for the river valley projects cover the following action plans:

- Catchment Area Treatment (CAT) Plan
- Afforestation Plan
- Survey of flora and fauna and action plan for restoration
- Rehabilitation and Resettlement Plan (R and R), if any
- Command Area Development Plan (CAD)

Regarding Bhakra and Beas Projects, there were provisions for R&R plans but there were no provisions for other plans, like CAT, CAD, Afforestation Plans, etc. as these were constructed prior to 1979. However, BBMB, on its own, has started studying and evaluating the post-construction status of environmental components and their impacts, if any, for short-term and long-term mitigate measures at all project stations.

9.2 SOCIO-ECONOMOIC IMPACTS OF BBMB PROJECTS

The beneficial impacts of Bhakra and Beas Projects have been much more compared to that envisaged at the planning stage. Bhakra and Beas Projects being multi-purpose projects, have two big storage reservoirs namely, 'Gobind Sagar' and 'Maharana Partap Sagar', which provide irrigation and drinking water to Punjab, Haryana, Rajasthan, Delhi and Chandigarh. These Reservoirs and their connected canal system have not only brought the **'Green Revolution'** but also the **'White and Industrial Revolutions'** in Northern Region.

BBMB Projects brought socio-economic upliftment of the region by way of enhanced employment opportunities, better energy and irrigation facilities, enhanced industrialization, ecological improvement in the downstream areas of the dams due to prevention of floods, etc.

In addition, these Reservoirs attract not only tourists but also promote fishery.

The Pong Dam Lake (Maharana Partap Sagar) has been included in the list of 'Wetlands of International Importance' in August, 2002 under the Ramsar Convention on Wetland of 1971. More than one lac migratory birds of 220 species visit Maharana Partap Sagar every year. Nangal Lake has been

included under National Wetland Conservation Programme in January, 2008 by Ministry of Environment & Forests, Govt. of India.

BBMB organized a National workshop with the help of Central Board of Irrigation and Power, New Delhi in the month of August, 2005 at New Delhi on the subject **"Impacts of Bhakra-Nangal Projects".** Through this workshop, BBMB has brought forward the facts regarding positive impact of Bhakra-Nangal Project before the nation.

9.3 ENVIRONMENT MANAGEMENT PLAN FOR BBMB

The processes covered under the Environment Management System of BBMB are operation and maintenance of Dams, Reservoir, Water Conductor System and related infra-structure like Townships. It also includes ensuring appropriate system of efficient waste management and its disposal to prevent environment degradation in accordance with prevailing international/ national standard, practices, technology and laws. The policy statement is also affirmation to setting up of appropriate environmental objectives, targets and their achievements as per Environment Plans to ensure their continual improvement.

Following measures were taken regarding implementation of Environment Management Plan for BBMB:-

- BBMB is an ISO 14001:2008 certified organization for Environmental Management System for its hydro projects and generation units.
- R&R aspects of Bhakra and Pong dams are being met with.
- Efforts are being made for using treated water from sewerage treatment plant for planting the plants in the BBMB colony and Rock Garden at Talwara.
- All proper procedure of disposal of solid/ hazardious waste are being followed and its proper record is being maintained keeping in view of EMS & reliant rules/ Acts

9.4 PLANTATION PROGRAMME

BBMB has been improving ecological environment by following regular 'Plantation Programme' undertaken every year on its vacant land, maintaining & improving gardens, terraces, fringe areas of the reservoirs, project colonies, offices, etc. Total 18650 nos. of plants were planted/ distributed during the year 2022-23 as per the following:-

SN	Administration of	Nos. of plants & shrubs planted/ distributed
1	Chief Engineer, Transmission System	7605 nos
2	Chief Engineer, Bhakra Dam	2500 nos.

3	Chief Engineer, BSL Project	2800 nos
4	Chief Engineer, Beas Dam	5000 nos
5	Chief Engineer, Generation	705 nos
6	Chief Engineer, System Operation	40 nos
	Total	18650 nos.

9.5 ROCK GARDEN AT TALWARA

BBMB has developed a modern Rock Garden, first of its kind under the stewardship of Padam Shri Nek Chand, Founder of 'Chandigarh Rock Garden' on about 20 acres of vacant land at Talwara Township. The Rock Garden at Talwara has been developed from the waste and surplus material collected from Beas Dam Project. It has unique features, like an Engineering Section modeling Dam construction, an Environment Section and a Children Park. This modern Rock Garden was inaugurated by Chairman, BBMB on 16th August, 2005 in the presence of PadamShri Nek Chand. New development works including preparation of ground for land scapes, are being taken up every year in this prestigious garden.

9.7 SOCIAL WELFARE ACTIVITIES

BBMB is very much alive to its social responsibilities. At every project station, BBMB is liberally spending towards welfare activities for local people residing in the vicinity of the projects.

As per latest decision taken by Board office (222nd meeting held on 27.11.2015) for allocation of funds to the tune of 2% budget approved against irrigation works is to be kept for social welfare activities for the people living in the vicinity of BBMB projects especially in rural areas in consultation with respective local authorities/ Deputy Commissioners of the areas.

Two works namely construction of Moksha Dham in various villages of District Bilaspur (HP) amounting to Rs.21.79 lacs and Supply, installation, testing and commissioning of one floating jetty at Old Ghat near Luhnoo ground in District Bilaspur (HP) amounting to Rs.8.48 lacs has been approved by the Board Office during Financial Year 2022-23.

Floating Jetty platform costing Rs.8.94 lacs has been provided at Beas dam area for works done by motor boat. Floating Jetty platform helps in closure work of T-1, T-2, P-1, P-2, P-3. Previously, there was a big problem to shift the items from motor boat. With the help of Floating Jetty platform, the work like lifting the

items, parking of motor boat, doing repair works related to dam and reaching the stations within Beas Dam lake have become easier. Also, Dual desk, classroom table, blackboard etc. items of costing Rs. 4.99 lacs were distributed to the students of Govt. school near the periphery of Beas Dam area.

BSL Project authority has taken up various activities in the project area for the welfare of local people such as arranging free medical camps, providing facilities in Govt. schools in nearby villages, development/ special repair of public places etc. etc. These welfare activities are in addition to the mitigation measures proposed in the EMP prepared by NEERI, Nagpur.

9.8. BBMB organized State level painting competition on energy conservation

BBMB was nominated as Nodal Agency to implement the Painting Competition on Energy Conservation Scheme 2022 launched by BEE, Ministry of Power, Govt. of India for the States of Punjab, Haryana & UT Chandigarh. Painting Competition includes School level, State level and National Level competitions. BBMB in collaboration with Education Department of State of Haryana, Punjab & UT Chandigarh achieved around 22.55 lakhs students participations at School LevELOn 14.11.2022 BBMB team organized on the Spot State Level Painting Competition on Energy Conservation 2022 for the Student of Class 5th, 6th & 7th of Group-A & Class 8th,9th & 10th of Group-B for the States of Punjab, Haryana & UT Chandigarh followed by Prize Distribution Function in the Inderdhanush Auditorium, Sector-5, Panchkula. 1st, 2nd, 3rd & 10 No. Consolation prize were distributed in each group and there were 6 such groups. Thus total 78 students were felicitated with cash prizes amounting to Rs. 10, 50,000/-

With tireless day & night efforts & with the active support of the BBMB organizing team, all the events for School Level, State Level and National Level were organized successfully.

अध्याय-10

Chapter-10

Human Resources Development

10.1 HUMAN RESOURCE DEVELOPMENT

10.1.1 Training Policy of BBMB

A. BBMB framed its own training policy in the year 2003 in line with the Ministry of Power's "Training Policy for Power Sector-March 2002" and implemented it for imparting extensive and regular training to its personnel from the year 2003-04 onwards. To review the existing policy and prepare biennial perspective training plan, a Standing Core Group headed by FA&CAO was constituted in October, 2007 to guide the entire training functions in BBMB. Working Procedure for nomination of officers/ officials for various Training Courses/ Seminars/Symposia etc. was prepared and the same is applicable w.e.f. 09.06.2015 & is being amended from time to time as per requirement.

B The motto of BBMB Training Policy is to "ensure Training for all once a year for each employee". Based on the policy, the target of minimum 3 Mandays of training for officers/ officials has been required to be imparted. In-house training calendar which includes the training module for deputing the officers/ officials for training to other Project Stations is sought from HOD's on Financial Year basis. Approval for the same is conveyed to the respective offices along with the target of Mandays for their offices out of the total Mandays fixed for the whole BBMB. The ibid target includes In-house as well as Institutional Trainings/ Seminars/Conferences/ Workshops. The Institutional as well as In-house Training Calendar depicting different modules such as, Technical Training, Personality Development, IT & Computer skills, Health & Life Style Management, HR & Finance, Fire Safety with First Aid, Workers Training, Misc. Modules, etc. was also prepared for the year 2022-23 as per previous practice.

C After reviewing its prevalent Training Policy, a need of focused and extensive training to all staff is felt as new staff is inducted from partner States to fill the gap made by retirements. Employees being from different States/ Departments and work cultures, it becomes imperative that they must be trained as per the requirements and working culture of BBMB under induction training program. In addition, due to frequent transfers/repatriation of staff from and to their parent departments, it is essential to conduct training programs on regular basis so as to keep all the newcomers abreast with BBMB work requirements and culture. Moreover, it is endeavored to include all categories of in-position employees in the training programs to improve their Technical/ Managerial skills and to equip them with the latest know-how & innovative technologies. Orientation Programs are also arranged at Project Stations

from time to time for newly inducted Engineers of Irrigation Wing & Power Wing.

D Various types of training being imparted by BBMB are as under:-

i) Institutional Trainings wherein personnel are nominated from BBMB to attend Training Programs/ Seminars/ Conferences/ Workshops at various Institutes situated at different stations or by organizing Training Programmes for BBMB personnel's through outside experts/ faculties etc.

ii) In-house Training Programmes through BBMB's own experts/ faculties etc.

iii) Induction training to personnel joining BBMB either on fresh recruitment or from partner states.

iv) On-Job Site Training to Engineers from other Organizations, like HCS Probationers from Haryana Irrigation, NPTI, PSTCL etc.

v) Practical Training/Training visits to the students of Under-Graduate/ Post Graduate Courses of Engineering from different Universities/ Colleges of India.

vi) The teaching staff of BBMB Schools is nominated for attending Capacity Building Programmes conducted by CBSE to update them with the new Technology in the education system.

vii) Orientation Programmes for Promotion in Science & Technology and carrier counseling are organized from time to time for the students of BBMB Schools at Project Stations.

viii) Various onsite Programmes are conducted for the Engineers of both Power & Irrigation Wing to enable them to obtain knowledge of latest techniques relating to their job profiles.

The above training programmes are being conducted for giving training to each category of officers/ staff of BBMB i.e. Engineers, Ministerial staff, like Superintendents/ Assistants, etc. (Non-technical class).

As Institutional Training is not cost effective for Worker class/ Ministerial staff categories of employees, Management decided to have extensive In-house training programmes/ Interactive Workshops/ Seminars, etc. at all the Project Stations/ Work places which are being organized at large scale on diverse topics such as Technical Management, Motivation, Health, Finance etc.

BBMB has created its own infrastructure for imparting training to its employees. A lecture hall at SLDC Complex, Chandigarh to arrange In-house Lectures/ Workshops/ Seminars has been established in the year 2003. A Training Centre named “Bhakra Beas Training Centre” has commenced working at Nangal since March, 2005. This Training Centre has a lecture hall with all the latest learning-aids, two different model-rooms for Irrigation and Power Wings and a discussion room to impart Institutional Training to Power Sector Engineers and Technicians of BBMB & other Power Utilities.

Training programme on “Distribution, Reforms, Upgrades & Management” (DRUM) has been started at this center since 2005-06 and training on “DRUM” is imparted in which Engineers from the Partner States/Utilities also participate. The DRUM training programme on self-sustaining “No-Profit No-Loss” basis remained continued in BBMB.

10.1.2 Achievements in respect of training during 2022-23

The achievement in respect of ‘Training Mandays covered’ in BBMB for training BBMB personnel during 2022-23 is as under:-

		Training Mandays				
		Executives		Non-Executives		
Year	Target of Mandays Fixed	Institutional Training	In-house Training	Institutional Training	In-house Training	TOTAL Achievement
2022-23	18000	1169	1657	908	14835	18569

10.2 IMPLEMENTATION OF RESERVATION POLICY FOR SC AND ST.

BBMB discharge its function as laid down in Section 79(1) of the Punjab Re-organization Act,1966 for which staff for the operation and maintenance of BBMB works is provided by partner State Governments/SEBs on transfer basis. However, in the event of inability of partner States/SEBs to provide the requisite staff, BBMB resorts to direct recruitment and promotion in respect of Group ‘C’ and ‘D’ employees.

Thus the staff in BBMB is drawn from the partner States according to the allocated share of posts. Such employees are governed by the same terms and conditions as are applicable to them in their parent departments. The reservation for the members of SC/ST categories of employees is watched by the parent departments of State Government according to their policy/rules/regulations. BBMB’s own recruited employees are governed by BBMB Class III and Class IV Employees (Recruitment and Conditions of Service) Regulations, 1994 and BBMB Class I & II Officers (Recruitment

and Conditions of Service) Regulations, 2015. As per the provision of Bhakra Beas Management Board Class-III and Class-IV employees (recruitment and conditions of Service) regulation 1994 and BBMB Class I & II Officers (Recruitment and Conditions of Service) Regulations, 2015, BBMB followed Punjab Government reservation Policy till April, 2017. Now as per Gazette Notification of Govt. of India, BBMB is following Central Government Reservation Policy since May, 2017. The amended clause 11 of ibid regulations specifies that "the members belonging to the Scheduled Castes, the Scheduled Tribes, Backward Classes, Ex-Serviceman, Physically handicapped persons and the dependents of deceased employees in the service, shall have the reservation in the service and all other concessions as prescribed by the Central Government from time to time". Roster Registers are being maintained by various Administrations/HODs of BBMB.

The existing strength/percentage of Schedule Caste employees as on 01.01.2023 is as under:-

Group	Total existing BBMB own recruited employees	Scheduled caste	Percentage
A	28	7	25 %
B	204	55	26.96 %
C	1649	486	29.47 %
D	1633	570	34.90 %
Total	3514	1118	31.81 %

10.3 MANAGEMENT-EMPLOYEE RELATIONSHIP

Meetings of the management with the representatives of the Staff/Unions were convened from time to time and the demands raised by the Unions and their grievances were settled amicably.

10.4 Integrity and Honesty: Imprint of Vigilance Organization

The Vigilance Administration in Bhakra Beas Management Board comprises of a Chief Vigilance Officer (CVO), SJVNL, holding additional charge of CVO, BBMB and five Vigilance Officers (VOs) viz One No. Dy. CVO, One No. Dy.Director, One No. Executive Engineer, One No. AD and One No. Accounts Officer who have been posted under CVO to carry out the vigilance work. Any complaint(s) received is got investigated by the Vigilance Officer and based on finding/record, appropriate action is recommended with the approval of CVO, BBMB.

The Vigilance Wing of BBMB is working on the principle “Respect All, Suspect All, Inspect All”.

The Vigilance Organisation in BBMB is making earnest efforts to inclucate the following principles among all the employees of BBMB, as a measure of preventive vigilance:

i) To check and control the tendency to delay matters.

ii) To record speaking orders in clear terms on the files giving merits of the orders.

iii) To avoid decisions being influenced due to vested interest.

iv) To be receptive to any suggestion by a colleague, superior or a subordinate which may result in savings to the exchequer.

v) To be firm in conviction that integrity is to be safeguarded at any price.

vi) Identification and focus on sensitive spots, regular and surprise checks/inspections of such spots.

vii) Identification of officials suspected of corruption and proper scrutiny of personnel who are posted in sensitive posts which involve public dealing, establishment and purchase related work and ensure their rotation after every 3 years as per CVC guidelines.

viii) To keep a watchful eye on all breeding grounds of corruption.

ix) To expose without fear those involved in acts of self-gratification

x) To take pride in humble living and acts of honesty.

xi) To follow the rules, procedures, instruction, manuals, etc meticulously.

xii) To avoid drawing illogical and dubious inferences so as to derive undue benefits whenever an ambiguity in rules is encountered.

xiii) Agreed List & list of doubtful integrity are prepared and it is ensured that officers /officials of doubtful integrity are not posted on sensitive posts.

xiv) Expedite the inquiries and their follow-up action to get decision from parent States/State Electricity Boards.

xv) Implementation of disciplinary action without any delay.

xvi) Various advisory are issued for system improvement in BBMB.

xvii) Circulars for improving awareness as well as system improvement in working of BBMB are also taken up from time to time.

During the year 2022-23 (01/04/2022 to 31/03/2023), 23 complaints were received. 21 Nos. complaints have been disposed off and 02 Nos complaints are under investigation. Besides above, **Vigilance Awareness Week – 2022** was observed w.e.f. 31.10.2022 to 06.11.2022 in BBMB offices at Chandigarh as well as at Project Stations. Various activities as the part of Vigilance Awareness Week in campaign mode were also conducted with theme **“Corruption free India for a developed Nation”** at

Chandigarh Corporate and Chief Engineer's offices as well as at Nangal, Talwara & Sundernagar project stations.

10.5 IMPLEMENTATION OF THE OFFICIAL LANGUAGE POLICY OF THE UNION IN BBMB

Officials in the BBMB are normally posted on transfer basis from the partner states i.e. Punjab, Haryana, Rajasthan and Himachal Pradesh. Out of this, 60% staff is from the Punjab state/PSEB, whose mother tongue is Punjabi and they perform their official work either in Punjabi or in English. Under these circumstances, it was difficult to implement the official language policy of the Government of India in the board. There was a time when only 4-5 per cent work was done in Hindi in Board, however, due to commitment of higher officers and under their expert guidance, use of Hindi in the official work of the Board has increased substantially.

In order to promote the progressive use of the official language Hindi the Department of Official Language issues an Annual Programme every year. Every possible efforts are being made by the Board to achieve the targets fixed in the Annual Programme and the details of the progress achieved by the Board against these targets are as under :

Compliance of Section 3(3) of the Official Language Act, 1963

Details of the documents issued by the Board Secretariat and the Board as a whole, under Section 3(3) of the Official Language Act, 1963 during the year 2022-23 are given below:

	Documents issued under Section 3(3)	Documents issued in English only
Board Secretariat	69	Nil
Board as a whole	1879	Nil

Reply of the letters received in Hindi:

All hindi letters received in the Board Secretariat and its subordinate offices are replied in hindi. The status of the reply to the letters received in Hindi during the year 2022-23 are given below:

	Total Letters Received in Hindi	Reply in Hindi	Reply in English
Board Secretariat	**15331**	**13581**	Nil
Board as a whole	**445441**	**372375**	Nil

Note : Remaining letters have been filed.

Correspondence in Hindi :

Number of letters sent in Hindi by the Board Secretariat and it subordinate offices since last few years, has registered a manifold increase due to the collective efforts of the staff and the officers of the Board for implementation of the official language, and the targets fixed in the Annual Programme has been achieved. 99.84% letter in the Board Secretariat and 97.83% letters in the Board as a whole had been sent in Hindi during the year 2022-23. The details of the same are given below :

	Total letters	Sent In Hindi	Sent in English
Board Secretariat	**35655**	**35601**	**54**
Board as a whole	**622802**	**609298**	**13504**

Noting in Hindi:

Almost 95% notings are written in Hindi.

Dictation in Hindi:

85% dictation by the officers is given in Hindi.

Recruitment of Hindi Typists/Stenographers:

Cent percent Hindi/Bilingual Typists/Stenographers are recruited in the Board.

Purchase of Hindi books for the Library:

Details of the expenditure incurred on purchase of Hindi books for the Library of the Board Secretariat & subordinate offices during the year 2022-23 are given below :

Total Expenditure on Purchase of Books	Expenditure on Purchase of Hindi Books
Rs. 69617/-	**Rs. 53617/- (77%)**

Computers:

A total number of 541 computers are available in the Board till date and bilingual (Hindi/English) facility is available on all the computers.

Website:

Board's website is fully bilingual (Hindi/English) and information given in both the languages is regularly updated.

Official Language Implementation Committee:

Official Language Implementation Committees have been constituted in all the offices of the Board and quarterly meetings of these committees are regularly held. Details of the meetings of the Official Language Implementation Committee of the Board Secretariat during the year 2022-23 are as under:

Quarter	Date of the Meeting
April-June	30 June, 2022
July-September	30 September, 2022
October-December	27 December, 2022
January-March	10 April, 2023

Hindi Workshop:

Following Hindi Workshops have been organized in Board Secretariat during the year 2022-23:

Quarter	Date of the Workshop
April-June	28 June, 2022
July-September	30 September, 2022
October-December	20 December, 2022
January-March	16 March, 2023

Hindi Fortnight:

Hindi Fortnight is organized in the Board Secretariat as well as subordinate offices during the month of September every year. During the year 2022-23 Hindi fortnight was celebrated in the Board Secretariat from 14 September, 2022 to 29 September, 2022. Several programmes were organized during the fortnight.

1. Hindi Shabd-gyan Pratiyogita,
2. Hindi Tankan Pratiyogita on computer,
3. Hindi Nibandh avam Anuvad Pratiyogita,
4. Hindi Noting and Drafting Pratiyogita,
5. Hindi Shrut Lekh Pratiyogita

Officers and staff participated in these competitions with great enthusiasm. Officers and staff who secured First, Second and Third place were awarded cash prize of Rs. 3,000/-, Rs. 2,500/- and Rs. 2,000/- respectively. Besides, under the Incentive Scheme, 19 employees were also honored with cash award for doing maximum work in Hindi.

At the end of Hindi Fortnight a prize distribution ceremony was held on 29 September, 2022.

Bilingual/Hindi Publications:

Following materials/books are published by the Board bilingually/Hindi :

- Annual Administrative Report
- BBMB Samachar (House Journal)
- All the material published in News Papers
- BBMB Janta and Corporate Brochure
- "Jeevan Dhara" Patrika
- DOs and DON'Ts for better Vigilance compliance
- Board's Diary and Calendar
- Telephone Directory

Besides, following books have been published by the Board till date:

- Administrative Glossary
- Rajbhasha Sahayak Pustak
- Technical Glossary
- Bhakra Beas ki kahani
- Beas Satluj Link Project

Do Shabd:

Two English words and their Hindi synonyms are displayed daily on a white board in order to facilitate the employees in day to day official working in Hindi.

अध्याय-11

Chapter-11

परामर्शी सेवाएं

Consultancy Services

11.1 CONSULTANCY SERVICES

The Govt. of India, in the year 1999, has entrusted additional functions of providing & performing engineering and related technical consultancy services in field of Hydro Electric Projects & Irrigation Projects to BBMB.

11.2 ACTIVITIES OF CONSULTANCY DIRECTORATE

1. 2X21MW Baggi HEP

DPR of 2X21 MW Baggi HEP was approved by Directorate of Energy, Govt. of H.P. on 01.10.2022. Thereafter, Consultant for execution of Baggi HEP was selected through tendering process and the Detailed Contract Agreement was signed between BBMB and Consultant M/s Energy Infratech Private Limited on 09.11.2022. The Tender document for selection of EPC contractor for Civil, HM, EM and Transmission Lines works of Baggi Project has been drafted and shall be floated shortly after approval of competent authority.

भाखड़ा ब्यास
राष्ट्र गौरव

अध्याय-12

Chapter-12

सूचना का अधिकार

Right to Information

PUBLIC GRIEVANCES /RTI (CHAPTER 32)

Right to Information Act 2005 is in place and fully operational w.e.f. 12th October, 2005. The Act provides for setting out the practical regime of right to information in order to promote openness, transparency and accountability in public offices. BBMB has adopted and implemented the Act in letter and sprint. The necessary infrastructure has been provided for Operationalization of the Act. BBMB designated Nine Assistant Public Information Officers (APIOs) and Eight Public Information Officers (PIOs) at different locations. In line with requirements of the Act, Eight Appellate Authorities have also been designated. The official Website of BBMB **(**www.bbmb.qov.in**)** depicts official designations, addresses and phone nos. of these officers. Comprehensive details regarding the procedure in respect of applying for information have been given on the website. The information regarding 17 No. manuals which have been prepared as per provisions of Section 4(2) of the RTI Act, (Pro-active disclosure) is also available on the website. The information is regularly updated from time to time as per provisions of the RTI Act. The quantum of applications received under the Act appeals made & other related details are given in Annexure-I.

Annexure-1

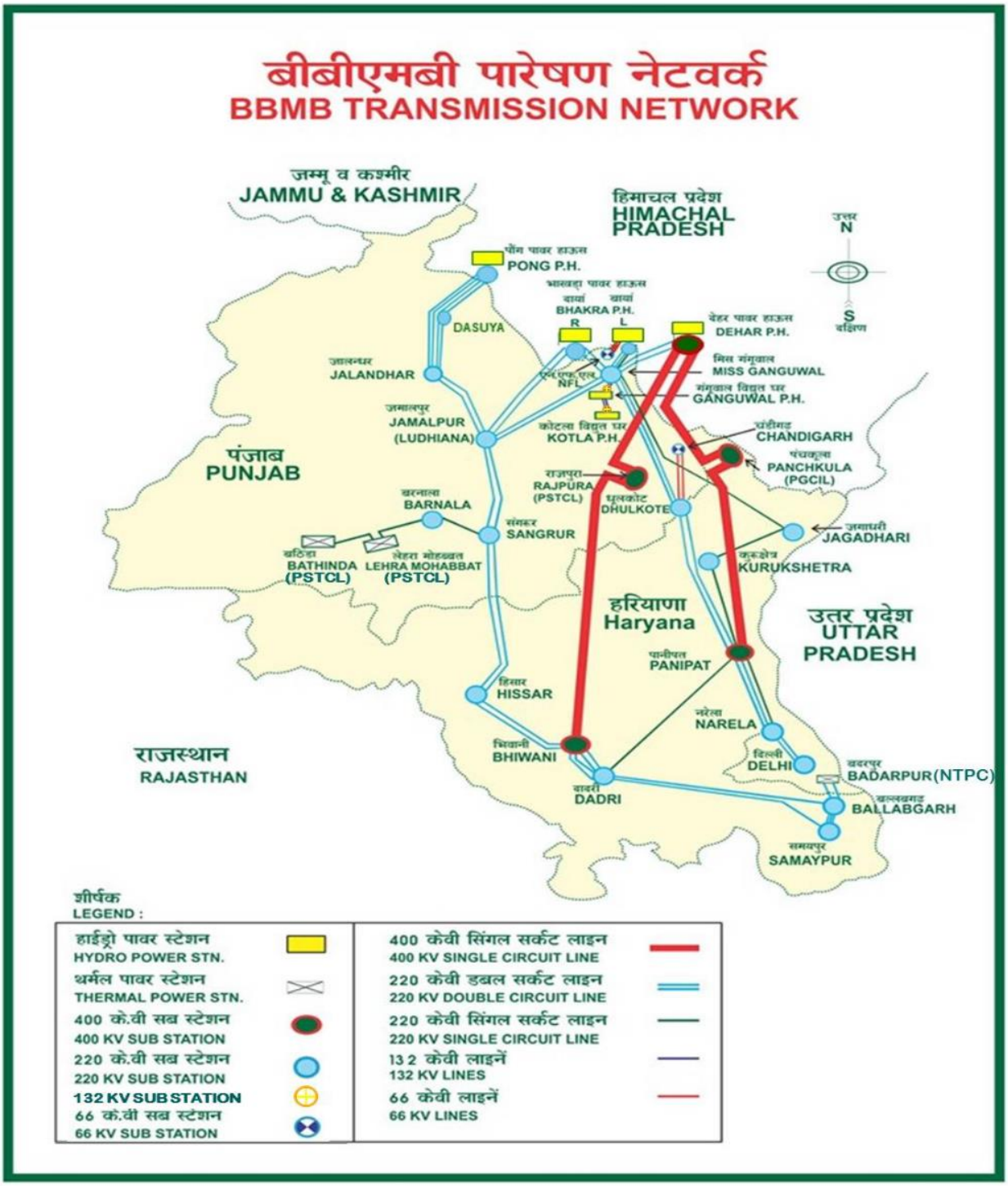
Details relevant to RTI Act for the years 2023 (As on 01.04.2022 to 31.03.2023)

Sr.No	No. of requests received	No. of decision	Decision where applications for information rejected														Number of cases where disciplinary action was taken against any officer in respect of Administration of this Act.	Amount of Charges collected (Rs.)
			No. of times various provisions were invoked															
			Section 8(1)									Other Section						
			a	b	C	D	E	F	g	h	I	j	9	11	24	Other		
1.	241	241	NIL										NIL				NIL	8593/-

Material for inclusion in Chapter-34 relating to RTI Act, 2005.

The Status of RTI Application and Appeals from 01.04.2022 to 31.03.2023.

Applications received	Application disposed off	First Appeal received	First Appeal disposed off	Second appeal received from CIC	Second appeal disposed off by CIC	Whether suo moto disclosures are uploaded on company website
241	241	24	24	02	02	-


बीबीएमबी पारेषण नेटवर्क
BBMB TRANSMISSION NETWORK
जम्मू व कश्मीर
JAMMU & KASHMIR
हिमाचल प्रदेश
HIMACHAL PRADESH
उत्तर
N
S
दक्षिण
पौंग पावर हाऊस
PONG P.H.
भाखड़ा पावर हाऊस
दायां
BHAKRA P.H.
R
बायां
L
देहर पावर हाऊस
DEHAR P.H.
DASUYA
जालन्धर
JALANDHAR
एन.एफ.एल
NFL
मिस गंगुवाल
MISS GANGUWAL
गंगुवाल विद्युत घर
GANGUWAL P.H.
जमालपुर
JAMALPUR
(LUDHIANA)
कोटला विद्युत घर
KOTLA P.H.
चंडीगढ़
CHANDIGARH
पंचकूला
PANCHKULA
(PGCIL)
पंजाब
PUNJAB
राजपुरा
RAJPURA
(PSTCL)
धूलकोट
DHULKOTE
बरनाला
BARNALA
संगरूर
SANGRUR
जगाधरी
JAGADHARI
कुरुक्षेत्र
KURUKSHETRA
बठिंडा
BATHINDA
(PSTCL)
लेहरा मोहब्बत
LEHRA MOHABBAT
(PSTCL)
हरियाणा
Haryana
उत्तर प्रदेश
UTTAR PRADESH
पानीपत
PANIPAT
हिसार
HISSAR
नरेला
NARELA
भिवानी
BHIWANI
दिल्ली
DELHI
बदरपुर
BADARPUR(NTPC)
दादरी
DADRI
बल्लभगढ़
BALLABGARH
समयपुर
SAMAYPUR
राजस्थान
RAJASTHAN
शीर्षक
LEGEND :
हाईड्रो पावर स्टेशन
HYDRO POWER STN.
थर्मल पावर स्टेशन
THERMAL POWER STN.
400 के.वी सब स्टेशन
400 KV SUB STATION
220 के.वी सब स्टेशन
220 KV SUB STATION
132 KV SUB STATION
66 के.वी सब स्टेशन
66 KV SUB STATION
400 केवी सिंगल सर्कट लाइन
400 KV SINGLE CIRCUIT LINE
220 केवी डबल सर्कट लाइन
220 KV DOUBLE CIRCUIT LINE
220 केवी सिंगल सर्कट लाइन
220 KV SINGLE CIRCUIT LINE
132 केवी लाइनें
132 KV LINES
66 केवी लाइनें
66 KV LINES