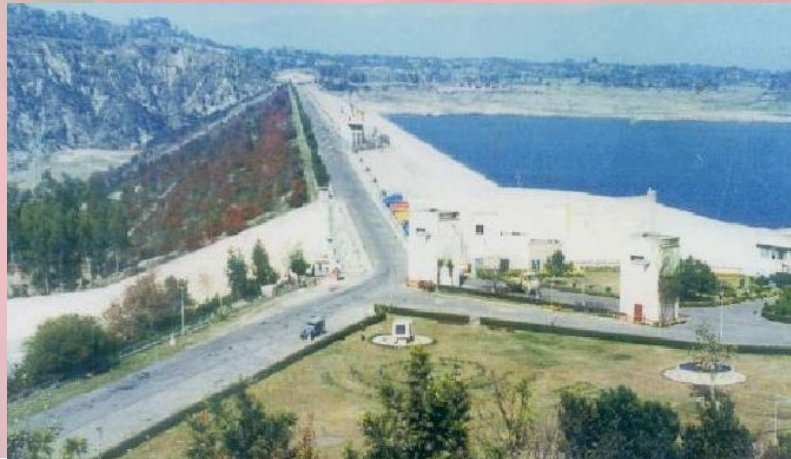


Annual Report 2019-2020



BHAKRA BEAS MANAGEMENT BOARD



VALUES

Discipline-Hardwork-Operational Excellence
and
Professionalism
अनुशासन-कठिन परिश्रम परिचालन श्रेष्ठता
और व्यावसायिकता

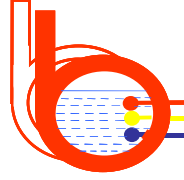
MISSION

To keep our systems running
efficiently at the minimum cost.
हमारी प्रणालियों को न्यूनतम लागत पर दक्षतापूर्वक
चालू रखना

VISION

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

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



भाखड़ा ब्यास
राष्ट्र गौरव



भाखड़ा बांध का सामने/नीचे से दृश्य

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, पुनरुत्थानशील भारत का नवीन मन्दिर है और यह भारत की प्रगति का प्रतीक है”

जवाहर लाल नेहरू

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.”

- Jawahar Lal Nehru

Members Of The Board During The Year 2019-2020

Chairman

Sh. D.K. Sharma 01.04.2019 to 31.03.2020

Member/Representative

Government of India

Sh. P.K. Saxena 01.04.2019 to 31.03.2020

Sh. Aniruddha Kumar 01.04.2019 to 31.03.2020

Partner States

Punjab

Sh. Sarjit Singh 01.04.2019 to 23.12.2019

Sh A. Venu Prasad 23.12.2019 to 31.03.2020

Haryana

Sh. Anurag Rastogi, 01.04.2019 to 29.11.2019

Sh. Devender Singh 29.11.2019 to 31.03.2020

Rajasthan

Sh. Naveen Mahajan 01.04.2019 to 31.03.2020

Himachal Pradesh

Sh. Prabodh Saxena 01.04.2019 to 01.01.2020

Sh. Ram Subhag 01.01.2020 to 31.03.2020

Member/Irrigation

Sh. Gulab Singh Narwal 01.04.2019 to 31.03.2020

Member/Power

Sh. Harminder Singh 01.04.2019 to 31.03.2020

बोर्ड के सदस्य (31.3.2020 को)
MEMBERS OF BOARD (AS ON 31.3.2020)



Sh. P.K.Saxena
(Representative of Govt. of India)
Commissioner, Indus,
Ministry of Water Resource,
New Delhi



Sh. Aniruddha Kumar, IRS
(Representative of Govt. of India)
Joint Secretary/Hydro,
Ministry of Power ,
New Delhi



Sh.A. Venu Prasad, IAS
(Representative, Govt. of Punjab),
Principal Secretary, Water Resources
Department
Govt. of Punjab, Chandigarh.



Sh. D.K..Sharma,
Chairman
Bhakra Beas Management Board,
Chandigarh



Sh.Devender Singh, IAS
(Representative, Govt. of Haryana),
ACS, Irrigation & Water
Resources Deptt.,
Govt. of Haryana Chandigarh



Sh. Naveen Mahajan, IAS
(Representative of Govt. of Rajasthan)
Secretary, Water Resources Department,
Govt. of Rajasthan, Jaipur



Sh.Ram Subhag Singh, IAS
(Representative, Govt. of HP),
Addl. Chief Secretary, ,
Forest, MPP & Power, NCES
Department,
Govt. of HP Shimla



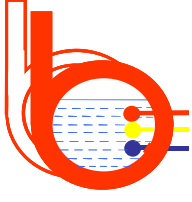
Sh.Harminster Singh,
Member(Power),
(Whole Time Member)
Bhakra Beas Management Board,
Chandigarh



Sh.Gulab Singh Narwal,
Member(Irrigation),
(Whole Time Member)
Bhakra Beas Management Board,
Chandigarh

विषय सूची
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भाखड़ा न्यास
राष्ट्र 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-organisation of Punjab, **Bhakra Management Board** was constituted on 1st October, 1967 under the Punjab Re-organisation 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-organisation 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-organisation Act.

1.2 FUNCTIONS

- Administration, Operation & Maintenance of Bhakra-Beas Projects.
- The regulation of the supply of water from Bhakra-Beas Projects to the States of Punjab, Haryana and Rajasthan.
- The regulation of the supply of power generated at Bhakra-Beas Projects.
- 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 Despatch Centre (SLDC) of BBMB and Consultancy Services to Partner States.

Installed Capacity (As on 31.3.2020)

Power House	No. of machine X Capacity of machine	Installed Capacity (MW)
Bhakra (Right Bank)	5x157	785
Bhakra (Left Bank)	2x108+3x126	594
Ganguwal	1x27.99+2x24.20	76.39
Kotla	1x28.94+2x24.20	77.34
Dehar	6x165	990
Pong	6x66	396
	Total	2918.73

ROOF TOP SOLAR:

Location	Capacity (kWp)
Chandigarh	175
Jamalpur	60
Jalandhar	125
Delhi (Punjabi Bagh)	80
Narela	20
Ganguwal	100
Bhakra PH Circle	270
Bhakra Non Residential Building	260
Nangal Workshop	320
Talwara	300
Total Installed Capacity	1710 kWp

Transmission System (As on 31.3.2020)

BBMB transmission system, spread over the States of Punjab, Haryana, Himachal Pradesh, U.T., Chandigarh and Delhi, operates in integrated manner with Northern Regional Power Grid. The details of BBMB Transmission System is tabulated below:-

Sr. No.	Voltage Level	No. of Sub-Stations	Line Length (Ckt. km)
i)	400kV	03	573.95
ii)	220kV	17	2993.54
iii)	132kV	02	21.72
iv)	66kV	02	115.50
Total:		24	3704.71

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 Hydrel Channel.

II. BEAS PROJECT

a) Unit-I (BSL Project)

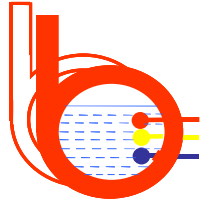
Beas Satluj Link Project comprising Pandoh Dam, Pandoh-Baggi Tunnel, Sundernagar Hydrel Channel, Balancing Reservoir, Sundernagar-Satluj Tunnel & connected civil works and townships at Sundernagar, Slapper and Pandoh, Hospital, School, Rest House etc.

b) Unit-II (Beas Dam at Pong)

Beas Dam at Pong including Reservoir, Outlet Works, Spillway & works appurtenant thereto and Talwara Township.

National Hydrology Project (NHP)

Bhakra Beas Management Board (BBMB) has 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. BBMB has the 'first mover' in the country under the World Bank funded Hydrology Phase-II Project.



भाखड़ा ब्यास
राष्ट्र गौरव

अध्याय-2 Chapter-2

बोर्ड के निर्णय Decisions Of The Board

2.1 Meetings Of The Board Held During The Year 2019-20

1. 232nd meeting of the Board held on 17.08.2019
2. 233th meeting of the Board held on 20.12.2019
3. 234th meeting of the Board held on 05.03.2020

2.2 Important Decisions Taken In The Board Meetings

232nd meeting of the Board held on 17.08.2019

Item No. 232.03

Revised Agenda Note- Tariff for supply to Common Pool Consumers w.e.f. 21.09.2017 onwards - clarification thereof.

FA & CAO, BBMB stated that the extant agenda was being put up for information of the Board for providing comprehensive information in tabular form indicating common pool consumers, their background, power allocated to them, tariff prior to and after 229th meeting and financial implication on partner states power utilities as a consequence of revision of tariff rates in accordance with the decision of 229th meeting of Bhakra Beas Management Board held on 21.09.2017. Accordingly, FA&CAO, BBMB presented the above information in tabular form and explained about the yearly loss of revenue in respect of partner states on account of revision of tariff.

Chairman, BBMB explained that this agenda was brought out in the 231st meeting held on 20.02.2019 to apprise the members about the outstanding dues of PSPCL and RRVPNL.

Member (Haryana) raised the question of stopping supply to common pool consumer at this rate and on account of heavy charges they have to make for purchase of power. Accordingly, Haryana would place agenda in the Board Meeting.

Representative of RRVPNL, informed that there is difference in energy/outstanding amounts worked out by BBMB and RRVPNL. Chairman, BBMB suggested that team of RRVPNL should sit with BBMB officers and reconcile the figures.

After deliberations, following decisions were taken:

1. PSPCL to release the outstanding amount immediately for smooth functioning of the BBMB.
2. RRVPNL to reconcile the figures of energy/outstanding amounts with BBMB and to release the outstanding dues on priority basis.

Item No. 232.04

To Write Off loss due to damage of 400kV SF-6 Circuit Breaker (X-2) SR. NO. 14263-C of CGL Make at 400kV Sub-Station, BBMB, Bhiwani procured against Purchase Order No.1646/P&D (TS) dated 16.02.2001.

Special Secretary, BBMB briefly explained about the agenda.

After deliberation, following was approved by the Board.

1. To Write off the value of loss amounting Rs.15,85,092/- due to damage of 400kV Circuit Breaker X-2 at 400kV Sub-Station BBMB, Bhiwani.
2. To delegate power to the Chairman on advice of the WTMs to sanction the writing off of irrecoverable value of stores, equipment and T&P articles etc. above Rs.5.00 lacs. All such approved cases shall, however, be put up to the Board for information.

Item No. 232.05

Revised Agenda note for revision of supervision charges for carrying out the works of shifting/raising the height of 400/220/132/66kV transmission lines of BBMB by NHA.

Special Secretary, BBMB briefly explained about the agenda.

Member (Haryana) desired that standard practice should be adopted in such cases.

Chairman, BBMB explained that issue regarding charging supervision charges from NHA was discussed by Secretary (Power), Govt. of India with him before the meeting in the PMO regarding PRAGATI followed by references (as mentioned in the Agenda) to cap such supervision charges @ 2.5 % as done by the Ministry of Road Transport and Highway and as per GOI instructions for NHA projects under Bharatmala Pariyojna Phase-I. Accordingly, BBMB charged supervision charges @ 2.5% in respect of 2 No. deposit works of NHA (sanctions issued vide letters dated 05.09.2018 & 30.10.2018 – referred to in the Agenda).

After deliberation, Board approved the following:-

- a) To levy 2.5% Supervision charges on estimate/total cost of project (less crop compensation and land cost) + Material Inspection charges + Work site visit charges + taxes as applicable from NHA for their works (under self-execution scheme). Tata Tower Design Charges not to be levied upon NHA, if TATA Design tower is used.
- b) Ratified the approval conveyed vide Special Secretary, BBMB, Chandigarh letter No. 30377-80/B-1547/TS/3P dated 05.09.2018 and letter No. 37183-86 & 37203-205 dated 30.10.2018.

Item No. 232.06

Payment of Compensatory Allowance Rs. 100.60 lakh- Audit Para.

Special Secretary, BBMB briefly explained about the agenda.

He further gave details about the Compensatory Allowance, Hardship Allowance and Hydel Allowance given in BBMB.

Member (Haryana) enquired as to why Compensatory Allowance and Hardship allowance can't be clubbed.

Chairman, BBMB explained the reason for allowing these allowances.

Member (Govt. of India-MoP) was of the view that at this belated stage with-drawl of any Allowance would create resentment among the employees.

After deliberations, the following was approved by the Board:

- i) Compensatory Allowance being given as Bhakra Compensatory Allowance, Talwara Compensatory Allowance & Sundernagar

Compensatory Allowance be allowed to continue as per existing provisions and audit authorities be informed accordingly.

- ii) In addition to allowances/concessions of PSEB (now PSPCL) adopted in BBMB as per decision of 143rd meeting, the allowances/concessions already granted prior to 143rd meeting by BBMB be allowed to be continued.
- iii) Board noted the withdrawal of Hardship Allowance at Narela w.e.f 01.12.2018.

Item No. 232.07

NOC for Thana Plaun Hydro Electric Project (191 MW) downstream of Pandoh Dam in Mandi District of Himachal Pradesh.

Secretary, BBMB briefly explained about the agenda.

Chairman, BBMB further added that BBMB had already given approval for construction of this Project to HPPCL. CWC, however, has accorded the approval for the said project with the condition that BBMB Secretariat should ensure that Party States having share in surplus Ravi-Beas as per 1981 agreement have no objection to the Himachal using 3.08 MCM (3.45 cusecs) water in form of consumptive use owing to annual evaporation losses from the reservoir of the proposed project. He further explained that the Project is contemplated as storage cum run-off the river scheme on the River Beas, around 20 km downstream of Mandi town of Himachal Pradesh and about 100 km upstream of lip of Pong reservoir, with non-consumptive use of water. He further apprised the Members that this project would arrest about 20 MCM of silt and would have water storage of around 20 to 25 MCM after sedimentation. This Project would augment storage capacity of Pong Reservoir and would also help in retention of sediments. He further informed that evaporation loss of 3.08 MCM (3.45 cusec) in its reservoir for storage of water would be much less as compared to storage of the same quantum of water in Pong reservoir where area of reservoir is large and average temperature is also comparatively higher. He also mentioned that Hydro Power Projects are considered having non-consumptive use of water.

After deliberations, Board agreed for issue of NOC for Thana Plaun Hydro Electric Project (191 MW) downstream of Mandi town of Himachal Pradesh.

Item No. 232.08

Dam Rehabilitation and Improvement Projects (DRIP).

Secretary, BBMB briefly explained about the agenda.

He further informed that following projects amounting to Rs.230 Crores under DRIP has been submitted to CWC for approval:-

1. Sedimentation Management in Gobind Sagar Reservoir
2. Tackling humidity level in the foundation galleries of Bhakra Dam
3. Inundation mapping due to Dam Break of Bhakra and Pong Dam
4. Monitoring of Pong Dam with the help of SAR (Synthetic Aperture Radar) satellite and
5. Catchment area treatment of Bhakra and pong Dam.

Secretary, BBMB informed that funding would be in the ratio of 50:50 and also the above list would be modified in consultation with the Dam Safety Review Panel and the CWC. It was informed that BBMB had already completed the projects study of "Inundation mapping due to Dam Break of Bhakra and Pong Dam" and has submitted the report to CWC. He further informed that above proposals are important as BBMB Dams are getting old day by day. Thus, it is of utmost necessity to maintain their health.

Member (Haryana) asked for the interest rate to be paid by BBMB on the loan (50% of the BBMB proposal for Rs.230 Crore). It was informed that the exact interest rate is not available, as soon as the same is available, the Board would be informed accordingly. It was further clarified that the interest rate applicable to BBMB on the loan given by World Bank would be applicable to all the 18 states participating in the DRIP projects. This loan would be routed through the Ministry of Jal Shakti.

After deliberations, Board gave approval to go ahead with the DRIP projects.

Item No. 232.09

NOC for use of BBMB Land for proposed Bhanupli-Bilaspur-Beri New Railway Line Project and Railway Station at Bilaspur.

Secretary, BBMB briefly explained about the agenda.

He further informed that after joint inspections and deliberations, RVNL agreed to avoid the requirement of land up to RL 1690 feet except for two locations where they need to go below for construction of foundations.

The approximate area of BBMB land to be used by RVNL shall be 149.65 Bigha.

After deliberations, keeping in view the national interest, Board agreed for giving NOC to Rail Vikas Nigam Limited (RVNL) for 16 No. locations for use of BBMB land on the basis of certain Terms and Conditions and payment of Royalty to BBMB by RVNL for use of BBMB land as mentioned in the Agenda Note.

Item No. 232.11

Regarding Relaxation in Policy of Contractual Employment in BBMB.

Secretary, BBMB briefly explained about the agenda.

After deliberations, the Board approved to amend the clause at point No. 5 of the policy for contractual employment in BBMB issued vide Secretary, BBMB O/o No. 188/PD-3201/APD-4 dated 06.06.2014 as under:-

"Only those persons will be considered for the post of contractual employment who have worked at least for one year on the same post or higher post in BBMB at the time of retirement and retired from BBMB and must have worked in BBMB for more than 2 years in any capacity. However, in case of Hindi Translators, all the employees retiring from BBMB or from the Government Departments / PSUs of the Punjab, Haryana, Rajasthan, Himachal Pradesh, Chandigarh or Central Govt, after attaining the age of superannuation will be considered for contractual employment, provided they have worked at least for one year as Hindi Translator or higher post in their parent department or possess post graduate degree in Hindi.

Item No. 232.12

Grant of compensatory allowance to Marine Fitter having pay scale of 10900-34800+Grade Pay 5450/- in addition to initial of Pay Scale + Interim Relief as per Punjab CSR.

Director (Security), BBMB briefly explained about the agenda.

It was further added that earlier in the 230th meeting of the Board, Chairman, BBMB was authorized to decide the compensation to be paid during the probation period to Dredger Operator Gr. I & Gr. II.

After deliberations, Board approved to give Marine fitter a compensatory allowance of Rs.30,000/- per month (worked out as per **Appendix-M-6**) as a special case during the probation period in addition to initial of Pay scale plus Interim relief (as per Punjab CSR). The same shall be withdrawn once the probation period is over and regular scale is given.

Item No. 232.13

Regarding Court cases being filed by the employees of partner states seeking pension benefit on the basis of last pay drawn in BBMB.

Secretary, BBMB briefly explained about the agenda.

Board Members noted the position explained in the Agenda and agreed to frame a policy regarding repatriation of their employees from BBMB on the pattern of Rajasthan.

Item No. 232.15

Regarding Engagement of Consultants in BBMB.

Secretary, BBMB briefly explained about the agenda.

After deliberations, Board approved to allow BBMB to engage 2 no. consultants in the areas as required from time to time, on the same emoluments, terms and conditions as already approved in the 224th meeting of the Board, with an additional rider that the services of these consultants will not be engaged for more than 6 months each in a calendar year.

Item No. 232.19

Replacement of existing Unit no. 3 Stator (Complete With Frame, Core, Bars), Wound Rotor Poles, Pole Keys, Air Coolers, Bearing oil coolers, Rotor Braking & jacking system, Air Guides, Temperature Recorders and other allied items with new ones alongwith erection, testing and commissioning thereof at Dehar Power House, Slapper.

Special Secretary, BBMB briefly explained about the agenda.

The Board Members noted the following decisions of the WTMs taken during the meeting held on 17.05.2019.

“To place purchase order on M/s BHEL, Chandigarh for replacement of existing Unit no. 3 Stator (Complete With Frame, Core, Bars), Wound Rotor Poles, Pole Keys, Air Coolers, Rotor Braking & jacking system, Air Guides, Temperature Recorders and other allied items with new ones along with dismantling, erection,

testing and commissioning thereof at Dehar Power House, Slapper at revised order value of Rs. 22,81,21,494/- (Rupees Twenty Two Crore Eighty One Lac Twenty One Thousand Four Hundred and Ninety four only) inclusive of Packing and Forwarding charges, freight & transit insurance charges upto destination site, charges for dismantling, erection, testing & commissioning and statutory tax such as GST at existing rate @ 18% on agreed terms & condition.”

The additional GTPs of offered generator shall be as mentioned below:

“Maximum continuous Output – 170 MW at 0.95 pf (with stator and rotor winding absolute temperature as per Class B limits) Maximum overload output (4 hours a day) – 175 MW at 0.95 pf (with stator and rotor winding absolute temperature as per Class B limit).

The above continuous overload output (170 MW) and maximum overload output (4 hours a day), i.e. 175 MW shall be possible if the existing runner is replaced with a new higher efficiency runner and capability, adequacy of retained components of units and auxiliaries are suitably established.”

However, all other parameters of GTPs shall remain unchanged.

Item No. 232.20

Agenda Note regarding construction of Pontoon Bridge over Satluj River at Nangal connecting Bibhaur Sahib Gurudwara (Naya Nangal) on one side and BBMB Colony, Nangal Township on the other side.

Secretary, BBMB briefly explained about the agenda.

Observations of Member (Govt. of India, Jal Shakti) were as follows:

“Agreed in principle subject to statutory clearance. It may need to be brought out whether or not possibility of other means of transportation such as barge etc., have been assessed and the conclusions thereon. Moreover need to be ensured that the proposed Pontoon Bridge should not create any hindrance to the free flow of water during and after construction”.

It was informed that so far no information regarding NOC from Forest and Wildlife Preservation Department has been received in BBMB. It was agreed that BBMB would issue NOC to Punjab Govt. for construction of Pontoon Bridge over Satluj River at Nangal, after receipt of NOC from Punjab Forest and Wildlife Preservation Department and keeping in view the issue raised by the Member (Govt. of India, Jal Shakti).

Item No. 232.22

Compensation to employees affected during natural calamities i.e floods, fire etc., at BBMB colonies.

Chairman, BBMB explained that the incessant rains on 15.7.2019 led to flooding of 220kV Substation, Dhulkote. The area was visited by him to have on-the-spot assessment of the situation wherein it was noticed that household goods of 4 No. employees of BBMB comprising two Peons, one Assistant and

one Asstt. Engineer, got damaged while retrieving them out of the flooded houses. He further informed that as a token of expression of BBMB's concern for the welfare of the employees, Chairman, BBMB announced one time amount of Rs.15.000/- each to the 4 No. employees to partially compensate their loss.

After deliberations, Board approved the following proposal:

- i) One time compensation of Rs.15,000/- each to 4 No. employees to compensate their loss due to flash floods at 220kV sub-station, Dhulkote on 15.07.2019.
- ii) Authorized Chairman BBMB to allow on-the-spot compensation to affected BBMB employees due to natural calamities like floods, fires, earthquake etc. on the same pattern as allowed by the Board in its 109th meeting (Item No.109.09) dated 29.10.1983.

Item No. 232.23

Annual Report of Bhakra Beas Management Board for the year 2017-18.

Due to shortage of time the item could not be discussed. The Annual Report was, however, circulated. The Members were requested to offer their comments within 15 days from the date of circulation of minutes and thereafter the report shall be considered as approved.

Item No. 232.24

Regarding relaxation in BBMB Class I & II officers (Recruitment & conditions of service) Regulation, 2015 for promotion from JE to AE/SDO.

Secretary, BBMB briefly explained about the agenda.

It was explained that we have one JE working in BBMB (Irrigation Wing) who is having degree in Electronics & Communication Engineering and is working as JE in Irrigation Wing since the year 2007. As per BBMB Class-I & II Officers Regulations 2015, amended vide Secretary, BBMB office order No. 48/774/Agenda/Vol.6/APD-5/2018 dated 4.2.2019, as per the decision taken in the 230th meeting of Board under item No. 230.08, only JE having degree in Civil or Mechanical Engineering are to be considered for promotion to the post of AE/SDO in Irrigation Wing. Thus the said official cannot be considered for promotion as SDO being degree holder in Electronics & Communication Engineering.

Similarly, there is another JE in BBMB (Power Wing) who is having diploma in Automobile Engineering and is working as JE in BBMB (Power Wing). The said official was appointed as Mechanical Mistry on 13.10.1984 and was promoted as SSA on 20.11.1993. Thereafter, he was promoted as JE, Sub Station in the year 2003 as per the amended BBMB Class-I & II officers Regulation, 2015, only JEs having diploma in Electrical, Mechanical or Civil Engineering are to be considered for promotion to the post of AE in Power Wing. Thus, the said official cannot be considered for promotion as AE/SDO being diploma holder in Automobile Engineering.

As both the above mentioned officials are working in BBMB since long and their appointment in their respective cadres is fait-accompli, therefore not considering them for promotion to the higher post in their respective cadre will cause substantial hardship to the said incumbents.

After deliberations, the Board, exercising its powers vested as per the provision of clause-21 of the BBMB, Class-I & II Officers(Recruitment & Conditions of Service), Regulations, 2015, allowed Chairman, BBMB, to promote 2 No. JEs as mentioned in the agenda note to the post of SDO/AE in their respective cadres by relaxing the provisions of Sr. No. 3 of Schedule-A (Amended-2019) of BBMB Class-I & II (Recruitment & conditions of service) Regulation, 2015.

Item No. 232.25

Restructuring of Manpower in BBMB.

Secretary, BBMB while explaining the agenda informed that in the 230th Board meeting, 8 posts of Executive Engineers and 6 posts of SDOs in BBMB were approved to be kept suspended with the conditions that these posts shall be revived only with the prior approval of the Board. On similar lines, it is now proposed to suspend another post of Executive Engineer namely "Superintendent/Procurement Store & Disposal Division, BBMB, Talwara under the administration of Chief Engineer/Beas Dam, BBMB, Talwara.

After deliberations, Board approved the following:

1. To keep the post of Superintendent / Procurement Store & Disposal Division, BBMB, Talwara under the administration of Chief Engineer/Beas Dam, BBMB, Talwara suspended. The post shall be revived only with the prior approval of the Board.
2. Redistribution of the work assigned to the post shall be done with the approval of the Chairman, BBMB.

2.2.2 233rd meeting of the Board held on 20.12.2019

Item No.233.02

BBMB power supply to common pool consumer of Bhakra Nangal Project: Deliberations on tariff of old HP (10MW Common Pool Share) on 25% of All India Average Power Purchase Cost (APPC) rate.

Special Secretary/BBMB briefly explained the agenda.

The proposal was deliberated and it was suggested by Member/Haryana that tariff for old HP Power may be charged @ 25% of average of APPC rates of all Partner States.

After deliberations, being a small quantum, all the members agreed to charge tariff @ 25% of All India APPC rate w.e.f. 01.01.2018, as proposed in the Agenda.

Item No.233.03

Grant of annual incentive to BBMB employees in recognition of their excellent contribution towards efficient maintenance and operation of BBMB Projects- Comprehensive Draft Policy thereof.

Special Secretary intimated that in recognition of excellent performance of BBMB, the Board its 230th Board meeting dated 19.11.2018 had allowed incentive of 20 days salary for the year 2017-18. Further, the 'Incentive Policy' as per directions of the Board during 230th meeting was circulated to all the Partner States. While briefing to the Members about the policy and the received comments, Special Secretary also detailed about the performance of BBMB during 2018-19 in terms of Excess Generation above target and excellent Plant & Transmission Availabilities as compared to the National Averages. The Board members appreciated the performance of BBMB and approved the proposal as contained in the Agenda for 21 days with a condition to seek approval of calculated incentive as per approved policy, every year from the Board. It was, however, agreed that as per subsequent agenda Item No. 233.04, 3 days bonus be reduced each time when bonus is granted, to provide financial assistance to the employees working in BBMB in the wake of any unfortunate accidental death/debilitating permanent disability. Thus, the Board approved to pay 18 days incentive to employees for the financial year 2018-19. In addition, 3 days bonus will be contributed to provide financial assistance to the families of employees working in BBMB, as discussed under Item No. 233.04.

Item No. 233.04

To provide immediate financial assistance to the family of employees working in BBMB in the wake of any unfortunate accidental death/debilitating permanent disability due to any untoward happening in service.

Special Secretary intimated that BBMB is in the process of framing a policy to provide immediate financial assistance to the bereaved/affected families in case of death(s) of employees working in BBMB. Further, it was intimated that funding of the scheme shall be broadly based upon one time membership fee with monthly subscription from the employees and hence there shall be no financial burden on the partner states,

Member (MoP) suggested BBMB to have a Group Insurance Policy for its employees. Member/Rajasthan agreed with the suggestions of Member (MoP).

Member (Irrigation) suggested that aforesaid policy should not cover the suicidal death, but the other Members of the Board unanimously contended that since this is a financial assistance to the bereaved family to save them from falling into financial depression/debt, hence may be allowed in such cases also.

Member/Haryana suggested to check the 'level of acceptance' amongst the employees regarding monthly subscription.

Member/Punjab suggested that instead of employees' contribution to the fund, it would be more appropriate that BBMB should earmark and divert a part of the annual bonus grant, allowed to the employees and provide financial assistance to the bereaved families from that fund.

After detailed deliberations, and in view of the fact that employees may object to the monthly subscription, unanimity, to create the fund out of the incentive, emerged during the meeting.

Accordingly, it was decided that out of annual incentive worked out as per policy, each time, 3 days bonus be kept for providing financial assistance

to the family in case of death (of any kind including suicide) of the employee working in BBMB. A special fund under appropriate Head shall be created for the same.

Item No.233.05

Delegations of Powers to Chairman, BBMB, in consultation with the respective Whole Time Member of BBMB, for getting the Studies/ Consultancy conducted on nomination basis related with BBMB Projects from Premier Government Educational Institutes like IITs, NITs and other Government/Government Funded Institutions etc.

Secretary/BBMB explained the Agenda in brief.

After deliberations, the proposal as contained in the Agenda was approved for single or multiple studies/consultancies with an overall cost capping of Rs.75 lac per annum.

Item No.233.07

NOC for lifting of 1.67 Cumec (58.97 Cusec) water from River Beas for Medium Irrigation Project to various Panchayats of Jawalamukhi area in District Kangra, Himachal Pradesh.

Secretary/BBMB intimated that the Agenda has been put up as per request of Govt. of Himachal Pradesh.

Member (Irrigation) stated that since there is no share of water allocated to the State of Himachal Pradesh, hence the matter needs to be deliberated. Further, Member (Haryana) inquired about the number of times the water has been allowed to be lifted by Himachal Pradesh previously. Secretary, BBMB informed the Board that previously, the Board has allowed the lifting of water 11 times, free of cost out of common pool.

Member/Rajasthan stated that in view of demand for increased quantum this time, some structured mechanism should be developed for allowing water supply to HP, to which Member (GOI-MoP) intimated that the requirement of structured mechanism has in fact been raised by HP a number of times to MoP and every time HP has been assured that its requirements will be met with, on need basis.

Member (GOI-MoWR) observed that HP, being a riparian state and quantum being very small, the Board should be gracious to allow the same.

After deliberations, The Board members agreed to allow the lifting of water to the State of Himachal Pradesh, as proposed in the agenda, free of cost, from the common pool.

Item No.233.08

Approval for waiver of surcharge of Rs.10,85,47,234/- (Ten crore eighty five lac forty seven thousand two hundred thirty four only) imposed on delayed payment of dues of RFF by BBMB.

The Agenda as received from Rajasthan was explained by FA & CAO, BBMB and intimated that the surcharge is on account of late payment of RFF dues and hence payable by Rajasthan.

Member/Rajasthan informed that the issue regarding charging of higher tariff of RFF power by BBMB had lingered on for many years and the surcharge got accumulated till final decision in the matter was taken by the Board and suggested for forming of a committee comprising of MD, RUVNL and FA&CAO, BBMB to sort out the issue.

Member (MoP) informed that as per National Tariff Policy, late payment surcharge has been made mandatory and there is no provision for its waiver.

Chairman/BBMB intimated that if such surcharge is waived off for one state, then it would be applicable to other Partner States as well.

Member/Haryana suggested to form appropriate policy for future, which will be applicable to all the Partner States.

After deliberations, it was decided that a Committee comprising of MD, RUVNL and FA&CAO, BBMB, should deliberate upon the issues and findings be put up to the Board.

Item No.233.09

Solar Power Plants (SPPs) in BBMB- Status thereof.

The status of Roof-top, Floating and Ground-mounted Solar Power Plants (SPPs) being set up by BBMB was intimated by Special Secretary.

Chairman, BBMB informed that the solar target of 500 MWp has been assigned to BBMB by the Ministry of New & Renewable Energy, GOI. It was further informed by the Chairman that BBMB is going ahead with the tendering process through SECI for setting up 15 MW Floating SPP at Nangal Dam Reservoir in Himachal Pradesh upstream of boundary with Punjab and through PEDDA for setting up 8 MWp Ground-mounted SPPs at 3 different locations at Talwara and Nangal in Himachal Pradesh on BBMB land and 10 MWp in Punjab on BBMB land.

It was decided that BBMB should go ahead with the tendering process of execution of SPPs. However, comprehensive proposal including quoted unit rate be submitted to the Board before award of the work in respect of Ground-mounted and Floating Solar Power plants. Further, draft PPA as annexed with the Agenda was approved by the Board for Ground-mounted and Floating SPPs.

Item No.233.14

Agenda Note regarding Renovation and Construction of 02 No. New Suites at Rest House, Pandoh.

Secretary BBMB explained the agenda before the Board. He further informed that Member (Irrigation) has raised certain observations which have been annexed with the agenda.

Member (Irrigation) stated that HP PWD Guest House having VIP suites, already exists in Pandoh and hence, there is no necessity to take up this work.

Chairman informed the Members that the above Rest House is on the right bank of River Beas and BBMB's Rest House at Pandoh is situated on National Highway and is oftenly visited by VIPs. He further contended that Pandoh, being location of the diversion dam and intake point of Pandoh-Baggi tunnel, is a very important installation and the present condition of the Rest House requires improvement for stay of the VIPs/Inspecting Officers.

After detailed deliberations, Members approved the proposal for taking up additions, renovation and laying foundation stone etc. at Pandoh Rest House, as contained in the Agenda.

Item No.233.15

Waiving off of penalty charges deducted against purchase order no. 1581/P&D (TS)/PNT-391 Dated 01.05.2006.

Special Secretary briefly explained the Agenda regarding waiving off the penalty charges on account of late submission of drawing by the firm.

Member (MoP) viewed that the provisions of contract should be adhered to.

Member/Haryana opined that the penalty is on account of late submission of drawing and not for any technical deficiency. Further, Member/Haryana enquired about the financial loss to BBMB on this account to which CE/TS, BBMB confirmed that there was no financial loss to BBMB as the work was completed four days after the stipulated period for which penalty has been deducted.

Member (Rajasthan) further enquired whether there are any other similar cases to which CE/TS informed that there are no similar cases pending with BBMB.

In view of above, the recommendations of Purchase Committee and approval of WTMs were noted and approved by the Board.

Item No.233.16

Regarding reduction in time gaps for promotion in BBMB Class-I & II Officers' (Recruitment and Conditions of Service) Regulation' 2015.

Secretary BBMB explained the agenda. He further informed that Member (Irrigation) has raised certain observations which have been annexed with the agenda.

During deliberations, Member/HP enquired that whether the proposal contains any case where relaxation in experience required for promotion would become less than the probation period. This contention was supported by all the Board Members.

Hence, it was decided that in order to bring uniformity amongst various cadres *while complying to the PSCPL norms regarding reduction in experience required for promotion*, BBMB should ensure that the experience required for promotion should not be less than the probation period in any case.

Accordingly, the proposal contained in the agenda note, subject to the above condition, was approved.

Item No.233.20

Delegation of Powers for proposed 40 MW (2x20 MW) Baggi Power House.

Special Secretary briefly explained the Agenda.

Member (Haryana) initiating the discussion sought clarification about 2 main points, which have also been raised in his DO letter and are briefly reproduced below:-

1. That the provision of 13% free electricity is applicable on joint ventures between the PSUs/SEBs and the domestic and foreign private enterprises, whereas, there is no private participation involved in the construction of Baggi Power House. Since BBMB is a statutory body formed by Act of Parliament, and is neither a company nor a PSU. Further, it is not a commercial organization having any profit and loss account, so it may be clarified that why BBMB has proposed to give free power to HP under these policies?
2. Baggi Power House is not a new scheme as it was envisaged during the construction of BSL Project and most of the infrastructure required for Baggi Power House is already constructed alongwith BSL Project. Thus, the power sharing formula as applicable to BSL Project, is applicable to Baggi Power House as well. Why BBMB has proposed new power sharing formula for Baggi Power House?

Member (Power) replied that BBMB is under the control of Central Government as per Section 79 (6) of Punjab Re-organization Act, 1966 and is a Central Generating Station as per Indian Electricity Grid Code. Further, he apprised that the Government of India, Ministry of Power (Department of Power) vide letter dated 1.11.1990 conveyed the formula for sharing of power and benefits from all Central Sector Hydro-electric Projects commissioned after 07.09.1990 which allows 12% free power to the state where the hydroelectric project is located. Accordingly, provision of free power is applicable to Baggi Power House.

Member (MoP) further clarified on the issue and informed the Board that National Hydro Policy is not limited to JV companies but is also applicable to Central Sector Hydel Projects and BBMB is covered under Central Sector Hydro Project. It was further intimated that Hydro Policy-2019 also contains the provision of free power to Home State as 'river' is considered a State Resource which is being given on lease for generation of power.

Member (Irrigation) stated that the consent of State of HP for execution of the project is conditional and needs to be deliberated by the Board.

Member/HP informed that the conditions conveyed to BBMB are standard conditions and no special condition has been incorporated in the instant case. He further intimated that HP has 7.19% share after taking out share of Rajasthan, in BBMB Projects whereas it has 27% share in SJVNL Projects and these conditions (including free power) are applicable to SJVNL as well. Further, Member/HP said that this project would cost around Rs.6 Crore per MW which is an 'Opportunity Cost' for all the Partner States. He further added that BBMB should be complimented for bringing this long pending project to execution stage. If it does not happen now, then another span of 40-50 years may be lost for its execution.

Member/Rajasthan suggested that detailed project report containing analysis of generation cost etc. of this project should also be prepared

by BBMB and deliberated at Board level. Member (MoP) also agreed with the same.

Further, Member/Haryana desired that detailed discussions should be held on the terms & conditions put forth by HP Govt. in the draft MoU which are in deviation of conditions from Hydro Policy. Accordingly, Member (Power) explained in detail all the points contained in the said MoU. Member (Punjab) desired that financial implications of these conditions be put up in the next Board meeting.

Chairman, BBMB stated that till the time the issue regarding DPR, analysis of generation cost etc., is finally concluded, Himachal Pradesh Government may not insist upon signing of MoU/Implementation Agreement (IA), to which Member (HP) consented.

In view of above, it was decided that cost of the Project including generation cost and levelised tariff be put up in the next Board meeting along with the other relevant points of this agenda.

In the meanwhile, the processes already initiated by BBMB i.e. investigations, preparation of detailed project report, process of land acquisition and statutory clearances etc. in pursuance to the Board's approval of the Project, be continued. Payment for acquisition of forest as well as private land be released after final clearance of the Project by the Board.

Item No: 233.21

Regarding Engagement of Specialist in BBMB.

Secretary, BBMB briefly explained the proposed agenda. He further informed that Member (Irrigation) has raised certain observations which have been annexed with the agenda.

After deliberations, the proposal as contained in the Agenda was approved by the Board.

2.2.3 234th meeting of the Board held on 05.03.2020.

Item No 234.02

Budget Estimates for the year 2020-21 and Revised Budget Estimates for the year 2019-20.

FA & CAO, BBMB explained the agenda seeking approval for Revised Budget Estimate (RBE) for FY 2019-20 and Original Budget Estimate (OBE) for FY 2020-21.

Member/Haryana enquired about the reasons of increase in Budget Estimate (2020-21) of Irrigation Wing (Works) which was explained by FA&CAO with due description of item-wise list of proposed expenditures/projects. Member/Haryana further enquired about the details of almost 6% increase desired by BBMB for OBE (2020-21) w.r.t. RBE (2019-20) which were explained by FA&CAO. While going through the details of 'Works Expenditure', Member/Haryana further desired to know the basis of keeping OBE (2020-21) as Rs.121.03 Cr and RBE (2019-20) as Rs.97.61 Cr if only Rs.35.99 Cr had been utilized till Jan. 2020 in respect of Irrigation Wing.

Member (GOI-MOP) informed that as per Govt of India Guidelines, maximum 33% expenditure is allowed during last quarter of a financial year. Member (GOI-MOP) and Member/Haryana desired that 'utilization of budget'

should form basis for ACR evaluation in BBMB as being done in the PSUs and other organizations.

Member/Irrigation stated that the responsibility for preparation of BBMB Budget lies with the Chairman. He further stated that Budget/Works related files are directly routed to Chairman through respective Chief Engineers and his office is being bypassed. Chairman, BBMB, strongly refuted the contention of Member/Irrigation and informed the Board Members regarding sending comments on less utilization of Budget to Member/Irrigation on monthly basis from August, 2019 onwards with the request to expedite utilization of budget of Irrigation Wing. Board asked FA & CAO, BBMB, to prepare a report on the issue for submission to Ministry of Power, GOI within 10 days and also directed Secretary, BBMB to put forth relevant records to FA & CAO. The Board also desired that the report should also incorporate reason for under- utilization of Budget.

In view of fact that the financial year is closing and budget approval would be required for making payments at the end of the year, the proposed budget for the year 2020-21 and Revised Budget for the year 2019-20 were approved by the Board. It was, however, desired that SOP for expenditure be framed by BBMB on the basis of SOP of Govt of India, to prevent lumping of expenditure towards end of the year. Further, Member (Irrigation) and Member (Power) of BBMB would take regular review of budget utilization within their domain and the same would be placed before the Board in every meeting.

Item No 234.03

Agenda note for carrying out the deposit works for shifting/raising of height of 400/220/132/66kV transmission lines of BBMB by beneficiary agencies.

CE/Generation, BBMB explained the Agenda regarding revision of supervision charges for deposit works on self-execution basis from existing 10% to 12.5% on the pattern of PSTCL.

After deliberations, the following proposal was approved by the Board:

1. "To levy supervision charges @ 12.5% of the total project cost (less crop compensation and land cost, if any) excluding GST in respect of shifting/height raising works of BBMB Transmission lines carried out by the beneficiary agencies on self-execution basis. GST on supervision charges will be charged as applicable. These supervision charges will include material inspection charges within India + work site visit charges. Further, charges for off-shore inspection of material, if any, which shall include To & Fro journey and Boarding & Lodging and other charges of the Inspecting Officer(s) as per entitlement, shall be charged extra from the beneficiary agency and the same be mentioned in the tender document by the beneficiary agency.
2. Supervision Charges in respect of shifting/height raising works of BBMB Transmission lines carried out by NHA on self-execution basis will remain the same as approved by the Board in its 232nd meeting held on 17.08.2019 and conveyed by Special Secretary letter no. 28883-88/B-

5/Jamalpur/2P dated 11.09.2019.”

Item No 234.04

Adoption of Punjab PWD plinth area latest norms for construction of houses in BBMB.

CE/Generation, BBMB presented the Agenda regarding adoption of Punjab Govt plinth area norms dated 15.07.2014 for construction of BBMB residences.

Member/Punjab intimated that there is less demand for govt. residences in Punjab and quite a few residences remain unoccupied. CE/Generation explained that BBMB has a different scenario where employees deployed at sub-stations and Project sites prefer to stay at BBMB residences but the residences are in dilapidated condition, being old construction.

Member (GOI-MOP) stressed to ensure construction of best quality houses and to provide good living conditions to the employees to boost their self-respect. Accordingly, it was approved by the Board to:

“Adopt Punjab Government Plinth Area norms as notified vide Govt. of Punjab, Department of Public Works notification no.11/411/2012-4B&R3/4108 dated 15/07/2014 for construction of houses throughout BBMB. Further, CPWD specifications be followed for construction of these houses.”

Item No 234.06

Dam Rehabilitation and Improvement Project, Phase- II & III (DRIP-II & III).

Secretary, BBMB while explaining the agenda informed that this issue was discussed in the 232nd meeting of Board under item No. 232.08, wherein the Board granted its approval to go ahead with DRIP Project amounting to Rs.230 Crores. Subsequently, as per the guidelines issued by the Ministry of Jal Shakti, Dam Safety Review Panel was constituted, which visited BBMB Dams in December 2019. As per the project report submitted by the Dam Safety Review Panel, the cost of works to be carried out under the project has been estimated at about Rs. 316.76 Crores. He further informed that as per the guidelines, a budget line with at-least 30% project preparedness needs to be opened before 31st March 2020, for which the case was sent to FA&CAO, BBMB, for opening a head of account under the EAP (External Aided Project) - DRIP. Finance Department of BBMB and Member/Irrigation have raised certain observations on the issue, which are placed before the Board Members for consideration and further deliberations. Observations of finance wing of BBMB would form part of agenda for Item No. 234.06.

Member/Irrigation, BBMB stated that BBMB cannot take any loan and also the work regarding catchment area treatment of BBMB Reservoirs, proposed to be done under this project is required to be done by the Forest Department of HP and BBMB has submitted an affidavit in this regard in the Hon'ble High Court. Member/Haryana also desired to know as to whether

BBMB has taken any stand regarding catchment area treatment and directed to inform the Board accordingly.

Chairman, BBMB explained that the reservoirs of BBMB Dams are getting silted fast and there is an urgent need to control the sediment load entering into the reservoirs in order to enhance the useful life of BBMB Dams, for which the work of catchment area treatment needs to be taken up.

The representative of Member/Rajasthan requested to provide the budget details and reports of the project so that they can take clearance from their Finance Department regarding funding of the project. It was agreed that Dam Safety Review Panel (DSRP) Inspection Reports in respect of all the four dams of BBMB would be sent to all partner states.

Member (GOI-MOP) stated that the partner States of BBMB will have to make provision for the upfront cost as well as loan repayment in their respective budgets.

The matter was discussed in detail and the Board decided as under:

1. To grant approval to BBMB to participate in the DRIP Project. Regarding catchment area treatment to be undertaken, Secretary, BBMB was directed to clarify BBMBs stand as to whether the works related to catchment area treatment are to be taken up by BBMB or by the state of Himachal Pradesh.
2. BBMB was authorized to open the budget line. BBMB, would proceed with the tendering process. Award of works and Expenditure under DRIP– II & III would be incurred after clearance from the partner States.
3. In order to enable the partner States to obtain requisite clearances, BBMB will supply data regarding liability of each partner State on account of upfront expenses as well as loan/repayment to all partner States immediately, upon which the partner states would supply their concurrence upto 31.03.2020.

Item No 234.07

Participation of BBMB in International Commission on Large Dams (ICOLD) 2020 from 4th to 10th April, 2020, at India Expo Mart, Greater Noida.

Secretary, BBMB briefly explained the agenda.

Member/Irrigation informed that the Conference has been postponed for September 2020 and as such this agenda should be deferred.

Chairman, BBMB stated that Member/Irrigation has levelled some personal allegations against him on the issue. It is learnt that Member/Irrigation has sent a dissent note addressed to all the Board Members. Though, this note is addressed to all the Board members but copy of the note has not been sent to the Chairman and Member/Power. In his dissent note, Member/Irrigation has alleged that the Chairman, BBMB is lobbying for the post of President of ICOLD and diverting the BBMB resources to promote ICOLD. Chairman, BBMB expressed strong objection over the note circulated by Member/Irrigation without his knowledge and stated that the allegation levelled against

him is absolutely false, baseless, concocted and has malafide intentions. Chairman categorically stated that he is not going to contest any election of ICOLD Board in the Annual Meeting & General Assembly scheduled to be held during the ICOLD 2020 Conference. He further stated that the proposal to nominate BBMB officers to participate in the ICOLD 2020 Conference was approved considering capacity building requirements of BBMB in view of the challenges being faced in operating and maintaining the ageing Dams and power houses of BBMB and it is well within his powers to nominate BBMB officers for capacity building programmes in the interest of the organization.

Member/Irrigation, BBMB, stated that only 4 officers of BBMB were allowed to participate in the NHP Conference held at Pune and even he was not allowed to participate in it. In this regard, Chairman, BBMB informed that between 03.06.2019 to 08.01.2020 Member/Irrigation has proposed his own name for 16 Conferences/Seminars/Courses etc., out of which his name for participation was approved for 8 events. For, NHP Conference at Pune, three officers directly working for National Hydrology Project in BBMB were nominated. As per guidelines of the organizers, not more than two to three officers were to be nominated. Chairman, BBMB was invited by the organizers to Chair a technical session and to present a technical paper during the Conference.

Member (GOI-MOP) mentioned that ICOLD is a very prestigious international organization which provides forum for exchange of knowledge and experience in Dam Engineering. ICOLD is specifically focusing on the subjects of current concern and has about 28 technical committees covering various fields of Engineering Design, Construction, Operation & Maintenance, Surveillance and Safety of Dams, Hydropower, Environment and Rehabilitation etc. He further intimated that all other PSUs under MoP such as NTPC, NHPC, SJVNL, THDC etc. are also nominating their professionals to this event.

Member(GOI-MoWR) also supported views of the Member(GOI- MOP) and stated that participation in this conference to be held in India is an opportunity, which must be availed by BBMB to provide international exposure to its officers. On this, Member/Haryana and Member/Punjab also agreed that participation of BBMB in the conference will be useful for capacity building of BBMB Engineers/Professionals.

After detailed deliberation, the proposal contained in the agenda note was approved by the Board.

Since this agenda was within powers of the Chairman, its approval by the Board will not be considered as precedence in future.

Item No 234.08

Annual Report of Bhakra Beas Management Board for the year 2018-19.

The Annual Report (2018-19) was approved by the Board.

Item No 234.13

Enhancement of emoluments for doctors appointed on contract in BBMB from open market.

Secretary, BBMB briefly explained the agenda.

Member/Haryana desired to know the present and proposed emoluments of the doctors appointed on contract basis by BBMB. In this regard, Secretary, BBMB informed that the present emoluments of General Cadre (MBBS) and Specialist (Post Graduate) Doctors are Rs 50,000/- per month and Rs 60,000/- per month respectively which are proposed to be enhanced to Rs 60,000 per month with 3% annual increase and Rs 1,00,000/- per month with 3% annual increase respectively, as per the emoluments being paid by the Govt. of Punjab.

Member(GOI-MOP) desired to know that whether the proposed hike will also be applicable for the doctors already appointed by BBMB. In this regard, Secretary, BBMB clarified that the proposed emoluments would be applicable from the date of notification of decision of the Board for all the existing doctors appointed by BBMB on contract basis.

After deliberations, Board approved to enhance emoluments of Doctors as per proposal contained in the agenda note.

Item No 234.14

Regarding implementation of the judgment dated 21.11.2019 of Hon'ble High Court of Himachal Pradesh, Shimla in LPA No.89/2019 to create a Supernumerary Post of Joint Director/Personnel cum Legal on adhoc basis w.e.f. 17.5.2010 to 30.11.2010.

Secretary, BBMB briefly explained the agenda.

The representative of Member/Rajasthan stated that their Legal Department has advised to file SLP in the matter on the ground that the Hon'ble Court cannot direct the organisation to create a supernumerary post to grant benefit to an individual. On this, Member (GOI-MOP) asked Secretary, BBMB, to intimate the financial implications and any future repercussions of the judgment. In this regard, Secretary, BBMB intimated that the financial implications on account of arrears to be paid to the officer would be of the order of Rs. 4 Lacs and there is no perceived future repercussion as the decision has been pronounced under the unique facts and circumstances of the case. After detailed deliberations, Board was decided not to file SLP in the matter and the proposal contained in the agenda note was approved.

Item No 234.15

Baggi Power House Project – Financial Implications and revision of DoP (Delegation of Power)

CE/Generation, BBMB presented the Agenda and informed that during last Board meeting held on 20.12.2019, it was desired that the cost of the Project, generation cost, levelized tariff alongwith other relevant points (i.e. deviations of terms & conditions of MoU submitted by H.P. w.r.t. Hydro Policy and their financial implications) be put up in next Board Meeting. He intimated that requisite details have accordingly been worked out and discussed in the instant Agenda.

Chairman BBMB intimated that the Cost per MW of the Project comes to around Rs.6 Cr/MW as against National Average Cost per MW of around Rs.9.83 Cr./MW for Hydro projects. Moreover, levelized tariff of Rs.2.66 per unit as against Rs. 5.00 to 6.00 per unit levelized tariff (for Rs.10 to 11 Crore/MW for a hydro project), is quite reasonable. Member (GOI-MOP) informed that per MW cost of E&M works of the project taken for working out levelized cost seems on higher side. On this, Chairman, BBMB intimated that in case cost of E&M works is less at the time of tendering, levelized tariff would accordingly get reduced.

Member/Haryana consented to go ahead with execution of the Project. As regards the query of Member/Punjab & Member/Haryana, it was intimated by Member (GOI-MOP) that the conditions of 13% free power and 1.5% LADF are as per Hydro Policy and therefore cannot be dropped. Member/Irrigation BBMB, however, did not agree to provide 13% free power and 1.5% LADF to Himachal Pradesh.

After deliberations, it was decided by the Board that BBMB shall go ahead with the construction/implementation of the Project immediately. BBMB shall take up preparation of the DPR as per conditions of the MoU and approval of the DPR. BBMB shall also proceed with tendering process for construction of the Project.

In the meanwhile, matter be referred to the HP Govt. for exemption of '13% free power' and '1.5% LADF' clauses for Baggi Power House. After obtaining response of HP Govt., BBMB would proceed with signing of the MoU. Response of H.P. Government would, however, be placed before the Board for information. Also, it was desired that calculation details of the costs as projected in the agenda be provided to the representative of Member/Rajasthan.

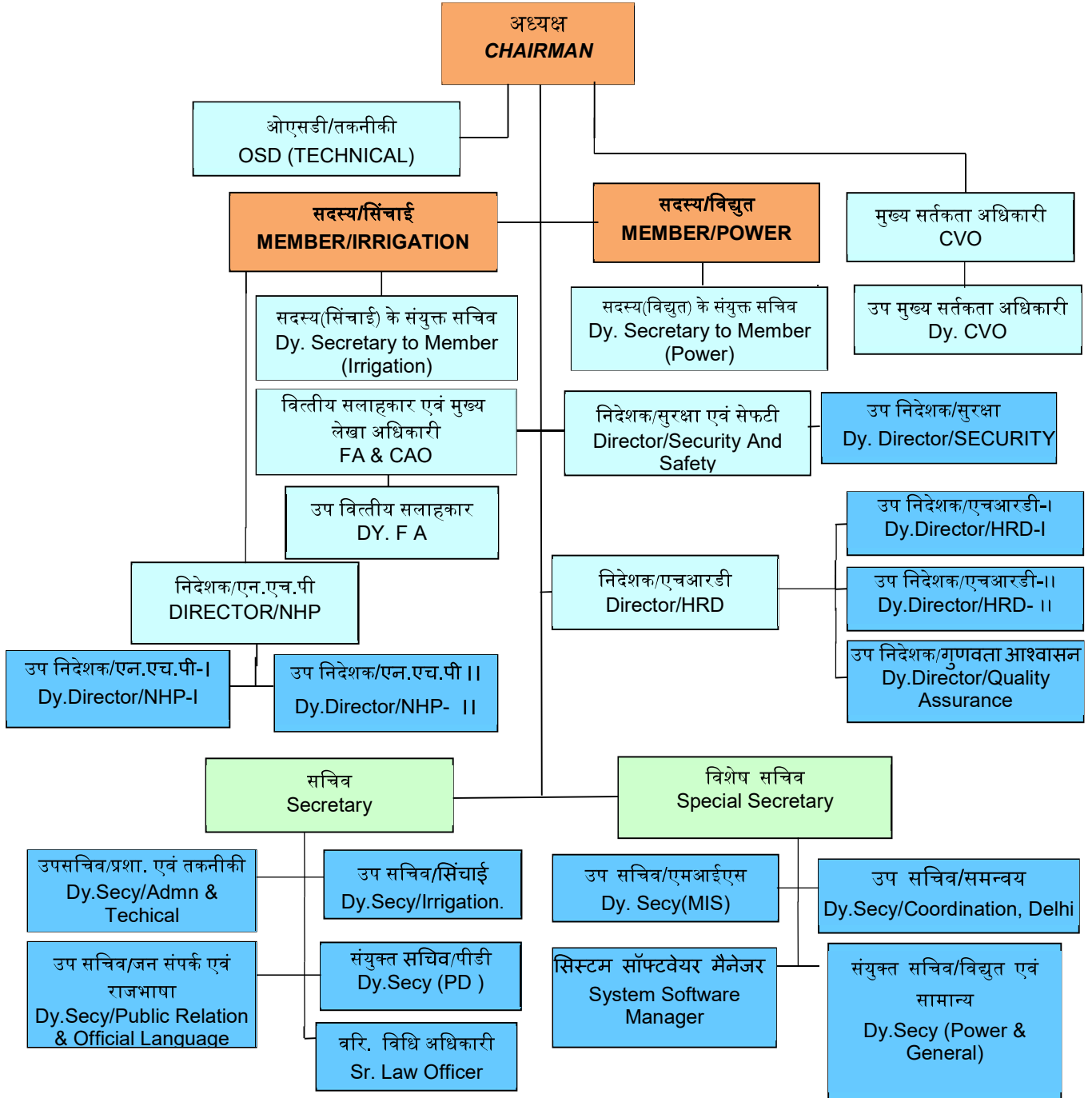
Further, it was decided that the proposal regarding revision of DOP and deployment of manpower as contained in Agenda, be discussed in the next Board meeting.



अध्याय-3
Chapter-3

संगठनात्मक व्यवस्था
Organisational
Set-Up

बीबीएमबी सचिवालय की संगठनात्मक व्यवस्था
Organisational Set-Up Of BBMB Secretariat

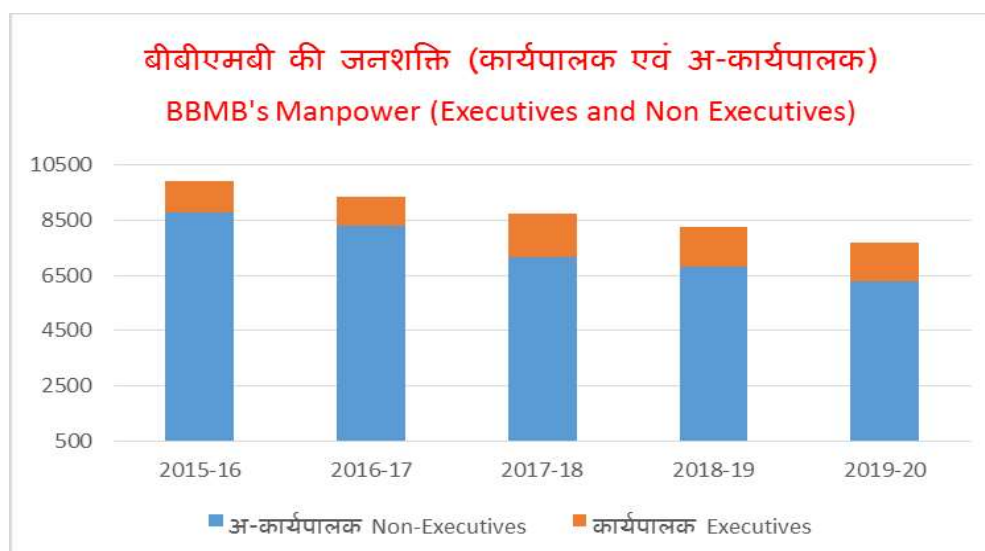


3.1 BBMB Manpower

Total sanctioned and in-position strength for entire BBMB as on 31.03.2020 is as under:-

Class of Establishment	Sanctioned Strength	In-position
Group A	613	479
Group B	1512	914
Group C	4761	3004
Group D	5185	3284
Total	12071	7681

बीबीएमबी की जनशक्ति (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 Dy.Secretary/Co-ordination office, New Delhi, as on 31.3.2020 is as under:-

Class of Establishment	Sanctioned Strength	In-position
Group-A	72	58
Group-B	83	68
Group-C	141	99
Group-D	141	63
Total	437	288

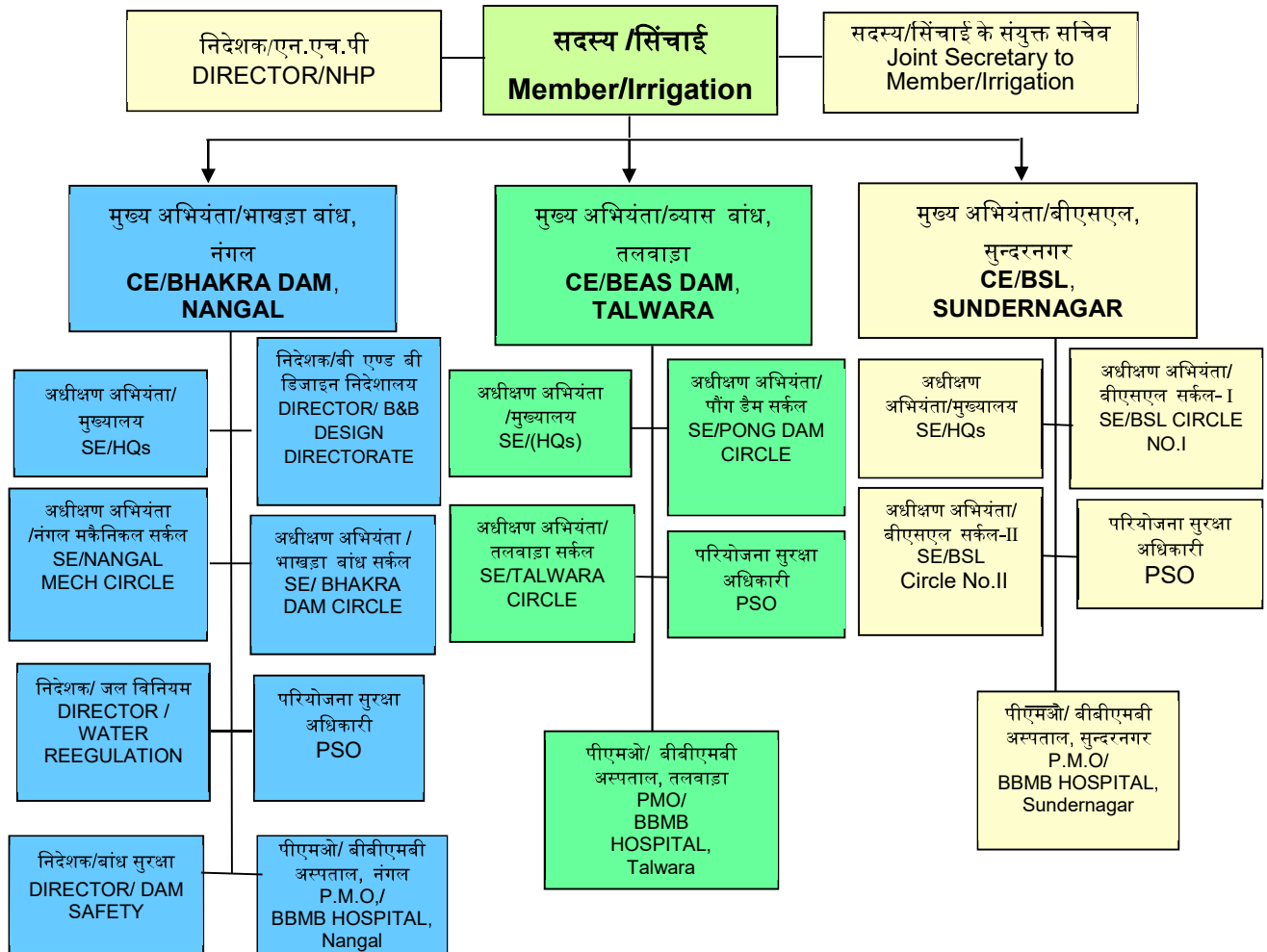
B. Allocation of Officers/Officials (in-position as on 31.3.2020 to various Sections of BBMB Sectt.):-

Category	Punjab	Haryana	Rajasthan	HP	C/Govt.	Others	PSEB	Har.Power Utilities	Raj.Power Utilities	HPSEBL	BBMB				Total
											Regular	Contract basis	Adhoc	Other	
Group –A	7	15	3	0	0	0	9	6	0	9	9	NA			58
Group-B	10	14	1	0	0	0	7	7	0	4	25	NA			68
Group-C	11	2	4	0	0	0	10	1	0	1	70	NA			99
Group-D	16	9	1	0	0	0	5	0	1	0	31	NA			63
Total	44	40	9	0	0	0	31	14	1	14	135	0			288

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 31.3.2020 is as under:-

Class of Establishment	Sanctioned Strength	In-position
Group-A	210	149
Group-B	646	359
Group-C	2614	1807
Group-D	3387	2339
Total	6857	4654

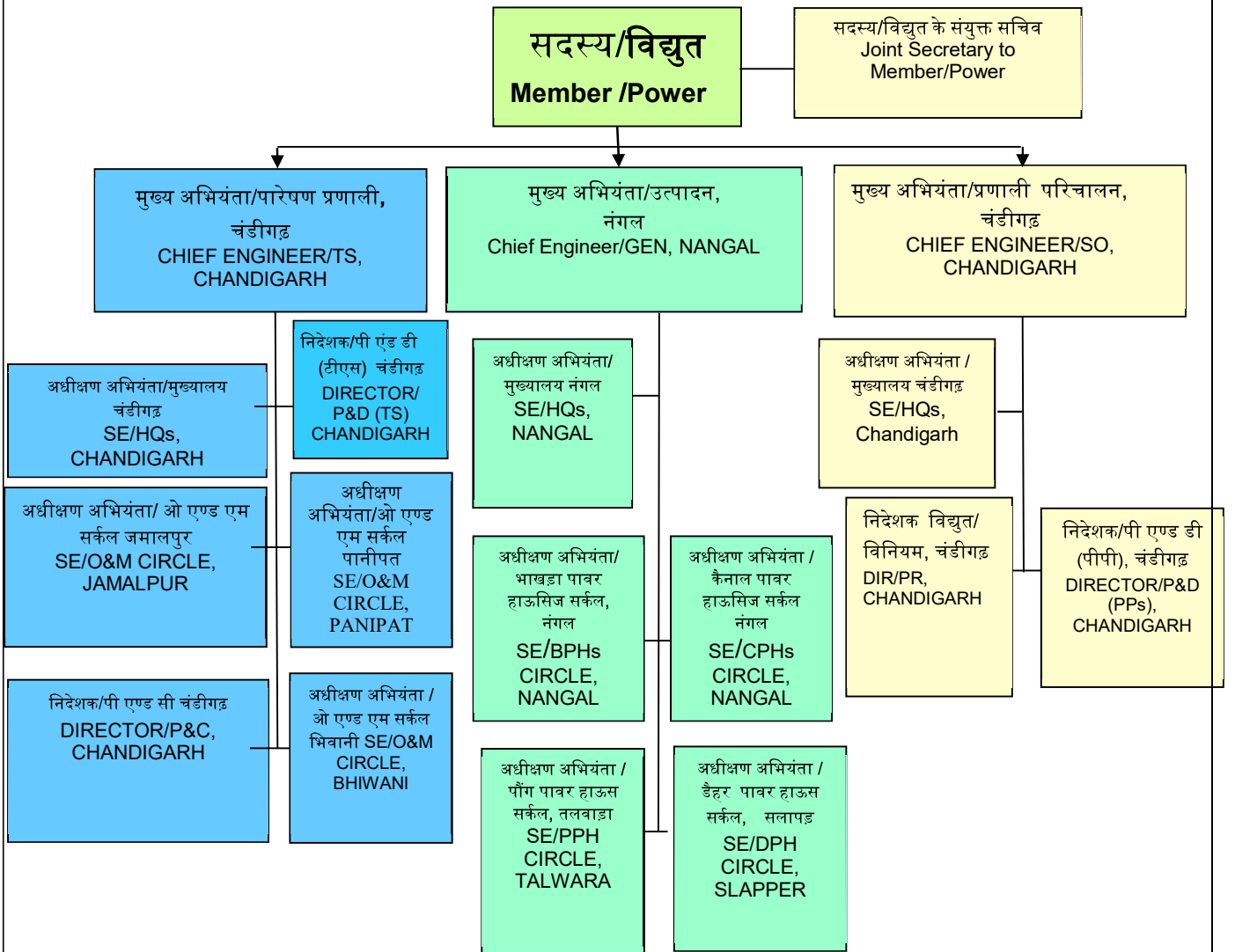
B. Allocation of Officers/Officials (in-position as on 31.3.2020 to various organisations):-

Category	Punjab	Haryana	Rajasthan	HP	C/Govt.	Others	PSEB	Har.Power Utilities	Raj.Power Utilities	HPSEBL	BBMB				Grand Total
											Regular	Contract basis	Adhoc	Other	
Group –A	60	27	16	3	0	0	3	0	1	23	16	NA			149
Group-B	125	74	1	10	0	0	5	2	0	14	128	NA			359
Group-C	724	15	7	15	0	0	14	8	3	27	994	NA			1807
Group-D	731	27	5	0	0	0	3	0	0	1	1572	NA			2339
Total	1640	143	29	28	0	0	25	10	4	65	2710	0			4654

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 विद्युत 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 31.3.2020 is as under:-

Class of Establishment	Sanctioned Strength	In-position
Group-A	296	243
Group-B	641	386
Group-C	1838	1006
Group-D	1564	829
Total	4339	2464

A. Allocation of officers/officials (in-position as on 31.3.2020 to various organisations):-

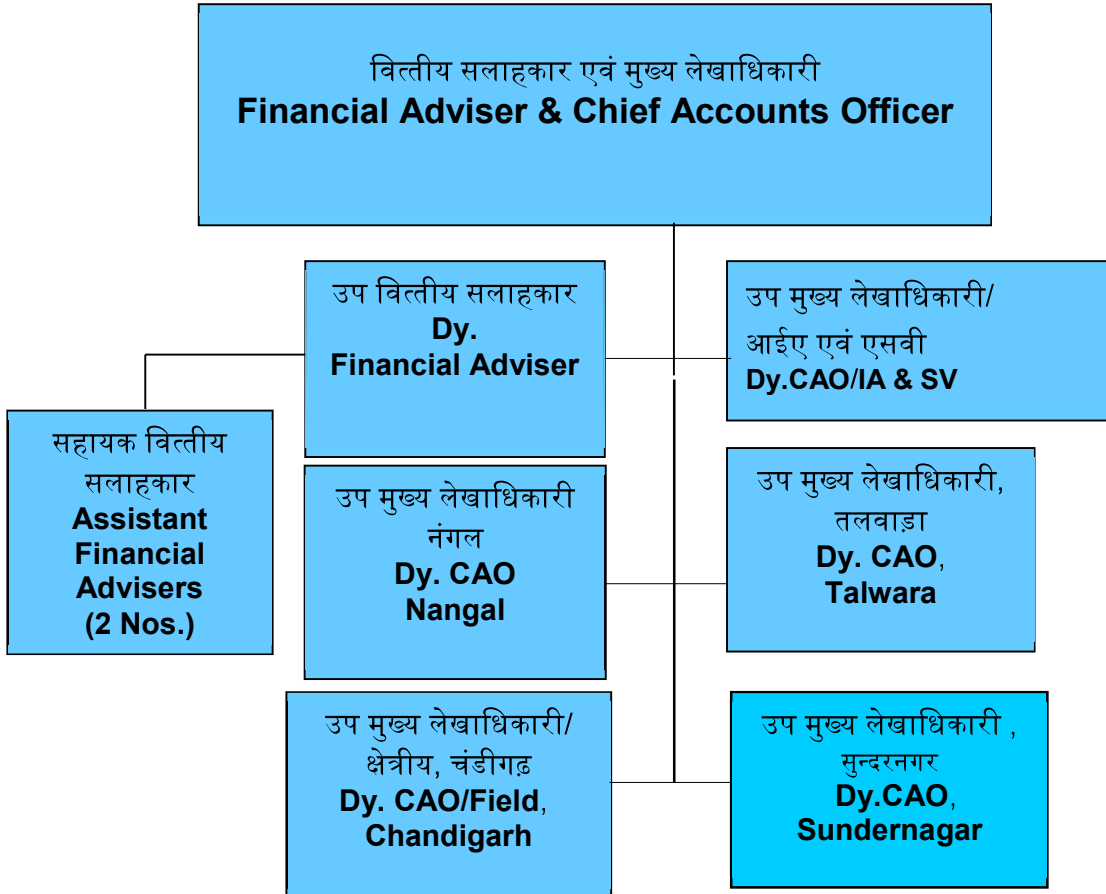
Category	Punjab	Haryana	Rajasthan	HP	C/Govt.	Others	PSEB	Har.Power Utilities	Raj.Power Utilities	HPSEBL	BBMB				Grand Total
											Regular	Contract basis	Adhoc	Others	
Group –A	3	4	1	1	0	0	78	76	35	19	25	NA	1	243	
Group-B	2	19	0	1	0	0	76	62	31	10	185	NA	0	386	
Group-C	85	10	1	0	0	0	83	50	20	1	756	NA	0	1006	
Group-D	67	0	0	0	0	0	15	8	16	0	723	NA	0	829	
Total	157	33	2	2	0	0	252	196	102	30	1689		1	2464	

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:

- the Financial Adviser to the Board on all financial matters.
- the Chief Accounts officer for compiling the income and expenditure accounts of the Board and
- 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 **Organisational Set-Up Of FA & CAO, BBMB**



A. Strength of Staff

The sanctioned and in-position strength of regular establishment as on 31.3.2020 is given in the table below:

Class of Establishment	Sanctioned Strength	In-position
Group-A	35	29
Group-B	142	101
Group-C	168	92
Group-D	93	53
Total	438	275

A. Allocation of Officers/Officials (in-position as on 31.3.2020 to various organisations):-

Category	Punjab	Haryana	Rajasthan	HP	C/Govt.	Others	PSEB	Har. Power Utilities	Raj. Power Utilities	HPSEBL	BBMB				Grand Total
											Regular	Contract basis	Adhoc	Other	
Group –A	3	10	0	4	1	0	7	3	0	0	1	NA	0	29	
Group-B	24	21	0	3	1	0	16	7	0	2	26	NA	1	101	
Group-C	29	3	1	0	0	0	13	1	1	0	44	NA	0	92	
Group-D	16	6	0	0	0	0	5	0	0	0	26	NA	0	53	
Total	72	40	1	7	2	0	41	11	1	2	97		1	275	



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 realised 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 budget for the year 2019-20, after deducting the share of Revenue Receipts of Power Wing, are determined as under:-

(Rs. in Lakhs)

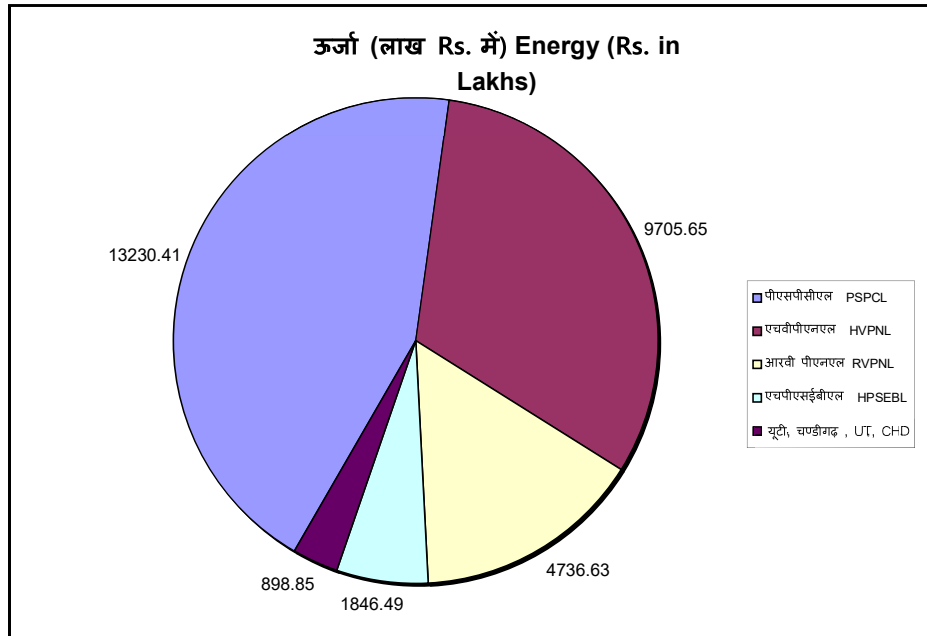
Punjab	15483.19	PSPCL	28137.01
Haryana	10105.86	HVPNL	23211.24
Rajasthan	12695.48	RRVPNL	15100.34
		HPSEB Ltd.	4133.83
		UT, Chandigarh	2012.30

- 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.
 - The PLA of BBMB, which remained positive throughout the year under review, closed with a credit balance of Rs. 18326.30 Lakhs on 31st March, 2020.
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 Rs. 75926.18 Lakhs.
(Chargeable to Power Wing)

4.	ii)	Units generated (ex-Bus) Notional Operating Expenditure per unit of energy (Generation & Transmission)	12018.73 MU 63.18 paise
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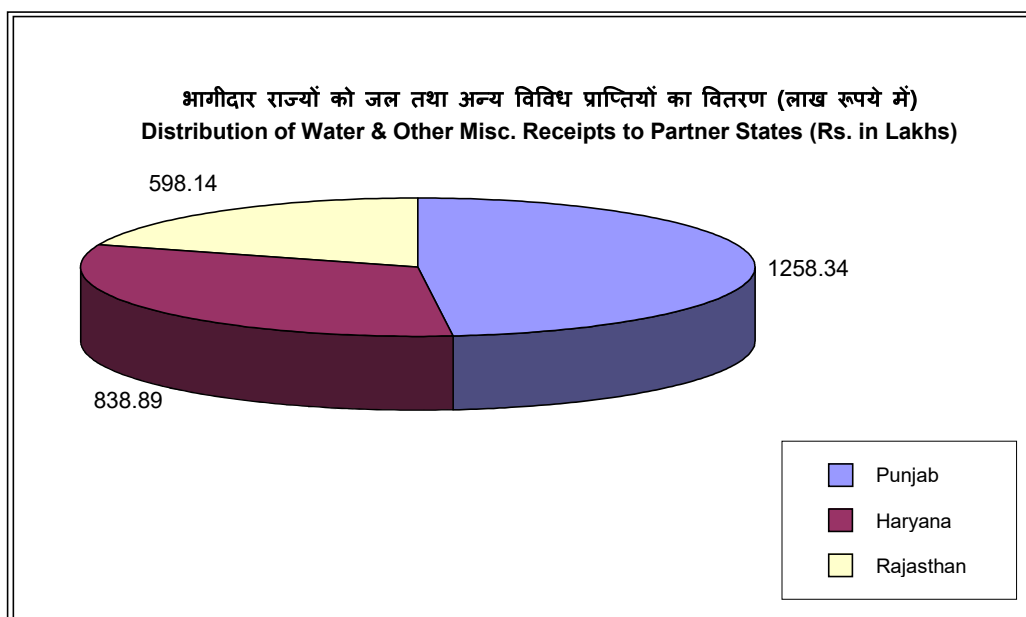
5. **Energy Sales Revenue: Rs. 30418.03 Lakhs**

i)	PSPCL	= Rs. 13230.41 Lakhs
ii)	HVPNL	= Rs. 9705.65 Lakhs
iii)	RRVNL	= Rs. 4736.63 Lakhs
iv)	HPSEB Ltd.	= Rs. 1846.49 Lakhs
v)	UT, Chandigarh	= Rs. 898.85 Lakhs



6. Water Sales Revenue & Other Misc. Receipts: Rs. 2695.37 Lakhs

- (i) Punjab State = Rs. 1258.34 Lakhs
 (ii) Haryana State = Rs. 838.89 Lakhs
 (iii) Rajasthan State = Rs. 598.14 Lakhs



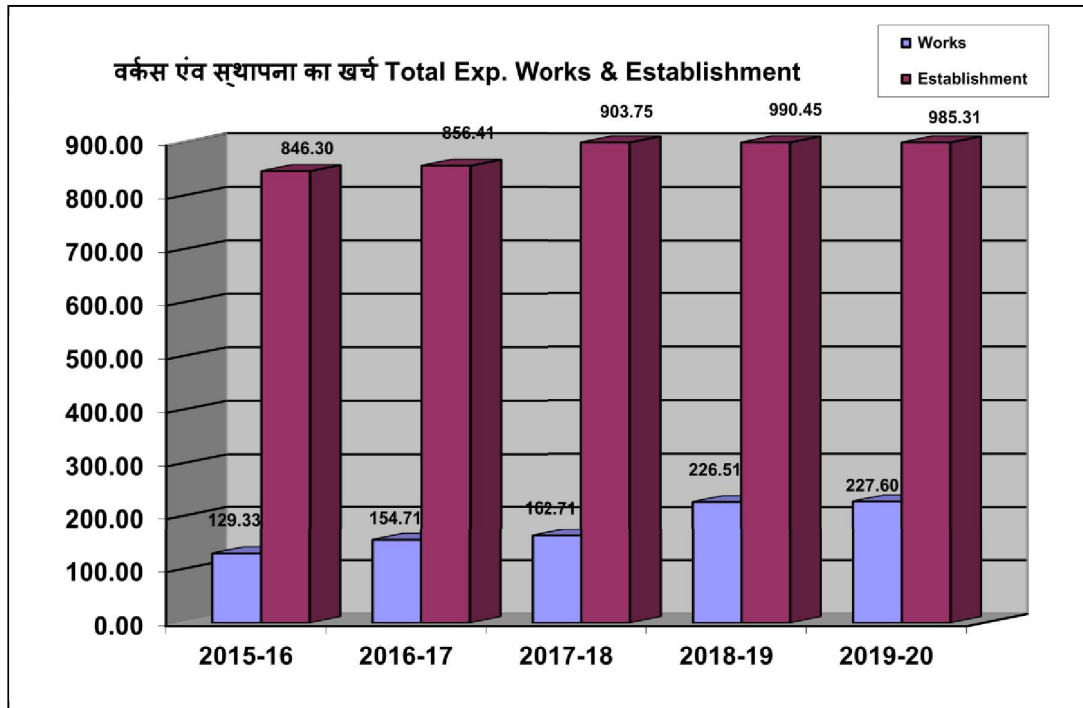
Note:- Revenue receipt for the year 2018-19 amounting to Rs. 333.88 Lakhs has been paid in the Financial Year 2019-20 between share of Punjab, Haryana and Rajasthan amounting to Rs. 184.04, 122.70 & 27.14 Lakhs respectively.

7. Capital Expenditure

(Rs. in Lakhs)

	Punjab Govt.	Haryana Govt.	Rajasthan Govt.	Total
Bhakra	-131.44	-87.62	-39.33	-258.39
Beas (Residual Works)	1.53	-6.00	0.09	-4.38

8. Total Expenditure of BBMB (Works & Establishment).



	Rs. in Crores				
	2015-16	2016-17	2017-18	2018-19	2019-20
Works	129.33	154.71	162.71	226.51	227.60
Establishment	846.30	856.41	903.75	990.45	985.31

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	1.2 LU/day
C.	Supply of power for Fertilizer factory in Rajasthan	5 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 Revenue Receipts and 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 Electricity Boards/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 below:

A.	Revenue Receipts	(Rs. in Lakhs)
1	Bhakra	28090.97
2	Beas Transmission Lines	412.47
3	Dehar Power Plant, Slapper (Other Receipt)	61.80
4	Dehar Power Plant (Sale of Power)	19.79
5	Pong Power Plant, Talwara (Other Receipt)	14.58
6	Pong Power Plant (Sale of Power)	16.42
7	Add from Bhakra I.B.	1623.01
8	Add from Unit No.1 BSL Sundernagar	60.18
9	Add from Unit No.2 Pong Dam Talwara	118.81
	Total:-	30418.03

B. Revenue Expenditure

Following are the figures of Revenue Expenditure during the year 2019-2020:-

(Rs. in Lakhs)

Sr. No.	Particulars	Works	Estt.	Total
OPERATION & MAINTENANCE				
1.	Bhakra Left Power Plant/Generation	65.59	5452.83	5518.42
2.	Bhakra Left Power Plant /Transmission	233.86	3298.90	3532.76
3.	Bhakra Right Power Plant /Generation	-270.00	3593.68	3323.68
4.	Bhakra Right Power Plant/Transmission	655.40	9850.35	10505.75
5.	Beas Transmission lines	1085.94	7094.11	8180.05
6.	Dehar Power Plant	1799.40	3853.86	5653.26
7.	Pong Power Plant	242.30	650.20	892.50
8.	Add from Bhakra Irrigation Branch	1713.66	16221.43	17935.09
9.	Add from Unit No. I of Beas Project (Beas Sutlej Link, Sundernagar)	1375.70	15645.45	17021.15
10.	Add from Unit No.2 of Beas Project (Pong Dam, Talwara)	240.87	3122.65	3363.52
	TOTAL	7142.72	68783.46	75926.18
RENOVATION, MODERNISATION & UPRATING (RM&U)				
11.	RM&U of Bhakra Left Bank Power House	11812.17	--	11812.17
	TOTAL RM&U	11812.17	--	11812.17
TOTAL EXPENDITURE (POWER WING) (O&M + R,M&U)		18954.89	68783.46	87738.35

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 on in 4.1.2 B.

4.1.3 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.	3.5%
	(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 following ratios:-

R.R.V.P.N.L.	20%
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)

(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

With effect from 01.11.2011 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)

4.1.4 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, 2020 is as under:-

Particulars	(Rs. in Lakhs)					
	PSPCL	HVPNL	RRVPNL	HPSEBL	UT, Chd.	Total
Outstanding as on 01.04.2019	9222.77	-726.91	-271.77	-139.87	-20.48	8063.74
Revenue	13230.41	9705.65	4736.63	1846.49	898.85	30418.03
Receipts realized during the year.						
Advances released by partner States Power Utilities during the year.	17946.62	15428.89	10984.11	2686.91	1150.58	48197.11
Total amount available	21954.26	25861.45	15992.51	4673.27	2069.91	70551.40
Expenditure incurred during the year.	30025.70	24223.45	15183.65	4367.39	2125.99	75926.18
Outstanding/ Balance available as on 31.03.2020	8071.45	-1638.01	-808.86	-305.88	56.08	5374.78

4.1.5 SUMMARY OF OUTSTANDINGS AS ON 31.03.2020

(-)Advance

(+) Recoverable

	(Rs. in Lakhs)		
	Total O&M charges	Total RM&U Charges	Total outstanding amount
PSPCL	8071.45	88.30	8159.75
HVPNL	-1638.01	142.88	-1495.13
RRVPNL	-808.86	68.42	-740.44

HPSEBL	-305.88	34.44	-271.44
UT, Chd.	56.08	75.41	131.49
Total	5374.78	409.45	5784.23

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 on 31.03.2020 against the various common pool consumers and others.

Sr. No.	Sale of Power to	(-)Advance
		(+) Recoverable
		Rs. in Lakhs
1.	M/S National Fertilizer Limited., Naya Nangal - Energy - Sale of Water	6.33
2.	Rajasthan Fertilizer Factory through Rajasthan Vidyut Prasaran Nigam Ltd.	5439.51
3.	Jammu and Kashmir	679.69
4.	Irrigation Wing Nangal	-0.24
5.	Beas Sutlej Link Project	15.71
6.	Beas Project, Talwara	2.82
7.	Union Territory Chandigarh (3.5% Schedule allocation)	12328.86
8.	Union Territory Chandigarh (Special Assistant)10 Lakhs/day	1059.66
9.	Union Territory Chandigarh (1 Lakhs/day))	105.97
10	Himachal Pradesh State Electricity Board (old Supply)	79.00
	TOTAL	19717.31

4.1.7 Other Outstanding Dues

A) Pooled Transmission Losses

Sr. No.	Particulars	Rs. in Lakhs
1	P.S.P.C.L.	-2.89
2.	HVPL	0.01
3.	Uttar Pradesh Power Corporation Limited	0.01
4.	Union Territory, Chandigarh	0.01
5.	Jammu & Kashmir	2.43
	TOTAL	-0.43

B) Wheeling Charges (Samyapur)

Sr. No.	Particulars	Rs. in Lakhs
1.	Uttar Pradesh Power	-2.72

	Corporation Limited	
2.	Delhi Transco Ltd. (DESU)	13.06
3.	Jammu & Kashmir.	1111.82
	TOTAL.	1122.16

C) Wheeling Charges (Bairasiul)

Sr. No.	Particulars	Rs. in Lakhs
1.	Delhi Transco Ltd. (DESU)	102.91
2.	Haryana Vidyut Prasaran Nigam Ltd. (HSEB).	316.85
	TOTAL	419.76

D) CENTRAL ELECTRICITY DUTY

Sr. No.	Particulars	Rs. in Lakhs
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

Sr. No.	Particulars	Rs. in Lakhs
1.	Himachal Pradesh State Electricity Board Limited.	4.43
	TOTAL	4.43

GRAND TOTAL.

Rs. 21325.57 Lakhs

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 as follows:

(Figures in MU)

Project	PSPCL	HVPNL	RRVNL	HPSEBL	UT	NFL	Irrigation	Total
		L	Includin	Includin	Chd		Wing	
			g RFF	g Old HP				
Bhakra Complex	2843.73	2117.19	1196.29	449.78	600.18	20.42	20.12	7247.71

Dehar Power House	1354.2 1	980.69	653.58	187.90	91.50	0.00	12.29	3280.17
Pong Power House	289.43	209.60	787.51	40.12	19.52	0.00	9.90	1356.08
Grand Total	4487.37	3307.48	2637.38	677.80	711.20	20.42	42.31	11883.96

- Note:**
- Figures are based on scheduled energy as mentioned in REAs issued by NRPC.
 - Total energy sent out from BBMB Power Houses is 12018.73 MUs and energy booked to the Partner States/Beneficiaries is 11883.96 MUs. The difference in actual energy sent out and energy booked to the Partner States/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.

4.2 IRRIGATION WING

4.2.1 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 Engineer' s 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 realized during the year were Rs. 2695.36 Lakhs. As per prevailing practice, the revenue receipts relating to the Irrigation Wing are paid to the Partner State Governments.

Note:- Revenue receipt for the year 2018-19 amounting to Rs. 333.88 Lakhs has been paid in the Financial Year 2019-20 between share of Punjab, Haryana and Rajasthan amounting to Rs. 184.04, 122.70 & 27.14 Lakhs respectively.

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
<u>Bhakra Project</u>				
Opening balance as on 01.04.2019	753.95	2998.62	-208.37	3544.20
Amount released during the year	10148.41	5400.00	3202.59	18751.00
Total amount available	9394.46	2401.38	3410.96	15206.80
Expenditure during The year	9411.81	6059.60	2779.43	18250.84
Closing balance as on 31.03.2020	17.35	3658.22	-631.53	3044.04
<u>Beas Project</u>				
Opening balance as on 01.04.2019	-1192.50	-2857.31	-55.62	-4105.43
Amount released during the year	4551.59	3500.00	9492.89	17544.48
Total amount available	5744.09	6357.31	9548.51	21649.91
Expenditure during the year.	4187.94	2791.96	8322.09	15301.99
Closing balance as on 31.03.2020	-1556.15	-3565.35	-1226.42	-6347.92
Total balance available Bhakra & Beas as on 31.03.2020	-1538.80	92.87	-1857.95	-3303.88

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

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%

4.2.3 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

(-)Advance

(+) Recoverable

(Rs. in Lakhs)

	Punjab	Haryana	Rajasthan	Total
Opening balance as on 01.04.2019	-737.04	-491.37	-220.20	-1448.61
Expenditure during the year	-131.44	-87.62	-39.33	-258.39
Total amount payable by the State Govts. to BBMB	-868.48	-578.99	-259.53	-1707.00

4801 – Power Project- Hydrel Generation Left Power Plant

(-)Advance

(+) Recoverable

(Rs. in Lakhs)

Opening balance as on 01.04.2019	- 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

(-)Advance

(+) Recoverable

(Rs. in Lakhs)

Opening balance as on 01.04.2019	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) payable by the State Govts. to BBMB	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

(-)Advance

(+) Recoverable

(Rs. in Lakhs)

	Punjab	Haryana	Rajasthan	Total
Opening balance as on 01.04.2019	338.83	263.85	441.32	1044.00
Amount received from the State Govts. during the year.	--	--	--	--
Expenditure during the year.	1.53	-6.00	0.09	-4.38
Total amount payable by the State Govts. to BBMB	340.36	257.85	441.41	1039.62

(Irrigation &Power)

**4.3 Position of Outstanding dues from Partner State Governments:
(AS ON 31.03.2020)**

(-)-Advance

(+) Recoverable

(Rs. in Lakhs)

Particulars	Punjab Govt.	Haryana Govt.	Rajasthan Govt.	Total
O&M Charges	-1538.80	92.87	-1857.95	-3303.88
BCB (Residual Works)	340.36	257.85	441.41	1039.62
Total	-1198.44	350.72	-1416.54	-2264.26

4.4 CONTRIBUTORY PROVIDENT FUND (AS ON 31.03.2020)

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	9309.30
2	Govt.of India Special Deposit Scheme A/c	6678.99
3	Adhar Housing Finance Ltd	450.00
4	Aditya Birla Finance	400.00
5	Andhra Bank Bonds	400.00
6	Andhra Pradesh State Dev. Loan A/c	2079.90
7	Bajaj Finance Ltd. Bonds	300.00
8	Bihar State Development Loan A/c	1,030.00
9	Capital First Ltd.	700.00
10	Chhattisgarh State Power DC Ltd.	1,000.00
11	Credila Financial Service Pvt Ltd.	100.00
12	Dewan Housing Finance Ltd	650.00
13	Export Import Bank Bond	140.00
14	Edelweiss finvest Pvt. Ltd.	600.00
15	Food Corporation of India Bonds	1000.00
16	Gujrat State Development Loan A/c	308.00
17	Haryana Vidyut Prasaran Nigam Ltd. Bond	530.00
18	Haryana State development Loan	500.00

19	Hero Fiancé Corporation Ltd.	600.00
20	HP State Electricity Board Bond	450.00
21	IDBI Bank Ltd Bond	820.00
22	India Bulls Financial Services Ltd	310.00
23	Indian Railway Finance Corp Bond	300.00
24	Industrial Development Finance Corp.Bond	900.00
25	IL&FS Financial Service Ltd	700.00
26	IL&FS Transportation network Ltd	1,550.00
27	J&K State Development Loan A/c	900.00
28	Jaipur Vidyut Vitran Nigam Ltd. (JVVNL)	800.00
29	Krishna Bhagya Nigam Ltd	250.00
30	Karnataka SDL	900.00
31	L&T Infrastructure Finance Co. Ltd Bond	980.00
32	L&T Housing Finance Ltd	200.00
33	Maharashtra State Development Loan A/c	580.00
34	Mahindra & Mahindra Financial Service Ltd.	300.00
35	North Eastern Electric power Corporation (NEEPCO Ltd)	200.00
36	Patel KNR Heavy Infra Ltd	1,000.00
37	PNB Housing Finance Ltd Bond	530.00
38	PNB Perpetual Bond	350.00
39	Power Finance Corp.Ltd. Bond	2,500.00
40	Federal Bank Limited	100.00
41	Punjab State Development Loan A/c	1,800.00
42	HDFC Credila Financial Services Ltd.	300.00
43	Ajmer Vidut Vitran Nigam Ltd	400.00
44	Telangana State Development Account	400.00
45	Assam State Development Loan	495.10
46	Rajasthan Rajya Vidut Prasaran Nigam Ltd.	700.00
47	Rajasthan State Development Loan A/c	1700.00
48	Reliance Capital Ltd. Bond	900.00
49	Rural Electrification Corp. Ltd. Bond	1,840.06
50	Sintex industries ltd	600.00
51	SBI Cards & Payments	1,000.00
52	State Bank of India Bond	8.40
53	Steel Authority India Ltd	200.00
54	Tamil Nadu Uday Bond	2,040.00
55	Tata Cleantech Capital Limited	400.00
56	Tamil Nadu Power Finance & Infra Dev Ltd.	150.00
57	Tamil Nadu Generation & Distribution Co.	500.00
58	Tata Capital Finance Ltd	1200.00
59	Treasury Bills (DTB) 182	300.00
60	Tourism Finance Corporation Ltd.	132.00
61	Tamilnadu State Development Loan	200.00
62	UP State Development Loan A/c	3,600.00

63	U P Power Corporation Ltd	800.00
64	West Bengal State Development Loan A/c	1,175.00
Total		62236.75
Mutual Fund		
65	BOI AXA MIDCAP EQUITY & DEBT FUND	25.00
66	BHARAT 22 ETF MF	150.00
67	SBI Blue Chip Fund Growth	580.00
68	ICICI Prudential Value Discovery Fund Growth	345.00
69	IL&FS Infrastructure Debt Fund Series-3-A	200.00
70	Reliance Regular Saving Funds	140.00
71	RELIANCE TOP 200	25.00
72	Kotak ETF Fund	50.89
73	Kotek Select Gilt Investment Fund	200.00
74	Axis Blue Chip Fund	100.00
75	UTI Gilt Advantage Fund	200.00
76	Motilal Oswal 35 Cpa Multicap Fund (MF)	100.00
77	Kotak Standard Multicap Fund	150.00
78	Reliance Large Cap Fund	50.00
79	CPSC ETF (Reliance) Mutual Fund	250.00
80	HDFC Top-100 Fund	50.00
81	SBI Nifty Index Fund	75.00
82	ICICI Prudential Nifty Index Fund	100.00
83	Reliance Index Fund	100.00
84	HSBC Mutual Fund	100.00
85	HDFC Liquid Fund	300.00
86	HDFC Index Fund	50.00
Total Mutual Fund		3,340.89
Total Investment up to 31/3/2020		65,577.64
Balance in Current/SB Accounts		2433.12
G.Total		68,010.76

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. The Board's accounts have been audited by the Accountant General, Audit, Punjab upto 03/2020.

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 31.03.2020 balance in Personal Ledger Account was Rs. 18326.30 Lakhs only.

4.7 O&M Cost of BBMB System

The cost booked to notional generation and notional transmission of BBMB during the year was Rs. 537.08 Crore and Rs. 222.19 Crore respectively. The O&M cost for notional generation works out to 44.69 p/kWh and notional transmission cost to 18.49 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 40.66 p/kWh.



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 partner States/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 2019-20 was 12175.65 MU (including of 8.5534 MU deemed generation at Ganguwal & Kotla Power Houses) which is 28.57% more than the Annual Generation Target of 9470 MU fixed by the CEA for the year 2019-20. The annual energy generation at each BBMB Power House for the year 2019-20 is indicated in **Fig.1**. The annual target and actual energy generation during the year 2010-11 to 2019-20 are depicted in **Fig.2**.

5.1.2 Peak Generation

BBMB strives to meet peaking demands of partner States. Typical 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 plant availability factor of Bhakra Left Bank and Bhakra Right Bank Power Houses was 99.99% and 99.85% respectively. At Pong, the availability was 98.81%. The availability at Dehar Power House was 97.71%. The availability factors of Ganguwal and Kotla Power Houses were 98.85% and 98.33% respectively. The plant availability factors of BBMB Power Houses are depicted in **Fig.4**. Overall availability of BBMB Power Houses was 98.94%.

5.1.4 Energy Transmitted

Energy transmitted from BBMB Power Houses (to the various partner States/beneficiaries) was 12018.73 MUs and energy booked to the partners/beneficiaries is 11883.96 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 has been accounted for under Deviation Settlement Mechanism (DSM) since power houses of BBMB have come under the ambit of ABT w.e.f. June 2016. The auxiliary consumption in BBMB Power Houses has been 29.98 MUs (0.2494%) and transformation losses have been 118.3866 MUs (0.985%).

5.1.5 Availability of Transmission

The availability of Transmission System of BBMB during 2019-20 was 99.82%.

5.1.6 System 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 2019-20 is as under:-

(All Figs. in MU)

Period	Loss of Generation at Ganguwal & Kotla	Excess Generation at ASHP	Deemed Generation	Gain to BBMB
4/19 to 3/20	4.547	12.56	8.5434	4.0064

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.

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 10 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.

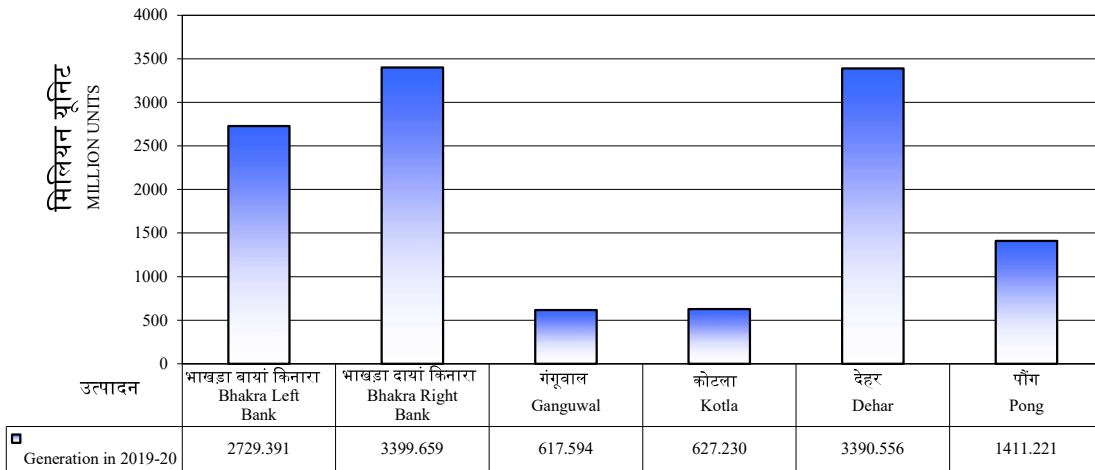
Through their concert efforts, the Engineers at BBMB SLDC have pioneered various innovative techniques in Power System Monitoring, Operation and Control and continue to march forward towards their goal for implementation of Smart Grid in BBMB.

बीबीएमबी के विद्युत-घरों में वार्षिक सकल उर्जा उत्पादन वर्ष 2019-20

चित्र-1
Figure - 1

ANNUAL GROSS ENERGY GENERATION AT BBMB POWER HOUSES
2019-20

योग : 12175.651 मिलियन यूनिट
Total : 12175.651 MU

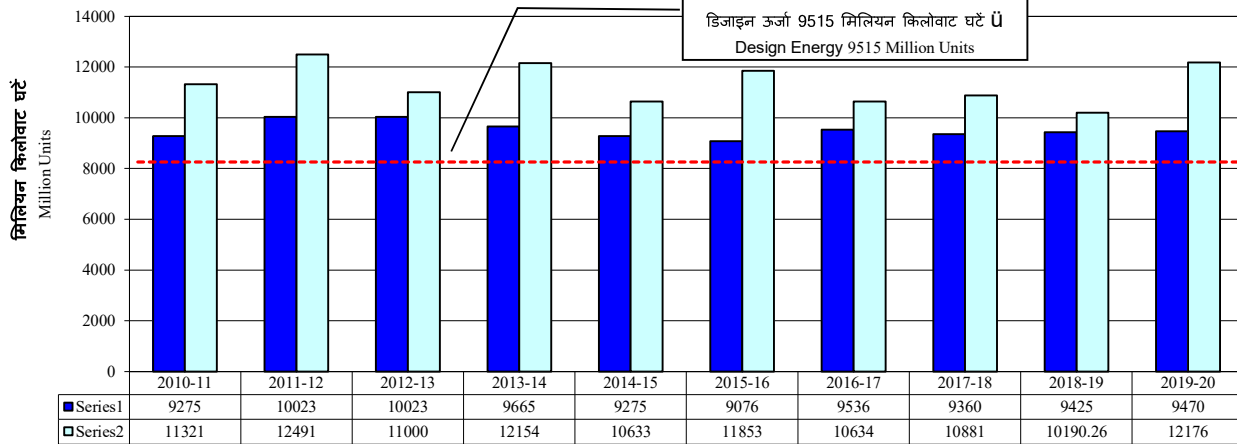


गंगुवाल एवं कोटला विद्युत घरों से कुल उत्पादन में डीम्ड उत्पादन के रूप में 8.5534 मिलियन यूनिट शामिल हैं।

The Total Generation at Ganguwal & Kotla PHs includes 8.5534 MUs as Deemed Generation. (Gwl=2.763 MU & Ktl=5.7904 MU)

वर्ष 2010-11 से 2019-20 के दौरान वार्षिक ऊर्जा उत्पादन के सम्बन्ध में लक्ष्य/उपलब्धियां
 TARGET/ACHIEVEMENTS IN RESPECT OF ANNUAL ENERGY GENERATION DURING THE
 YEARS 2010-11 TO 2019-20

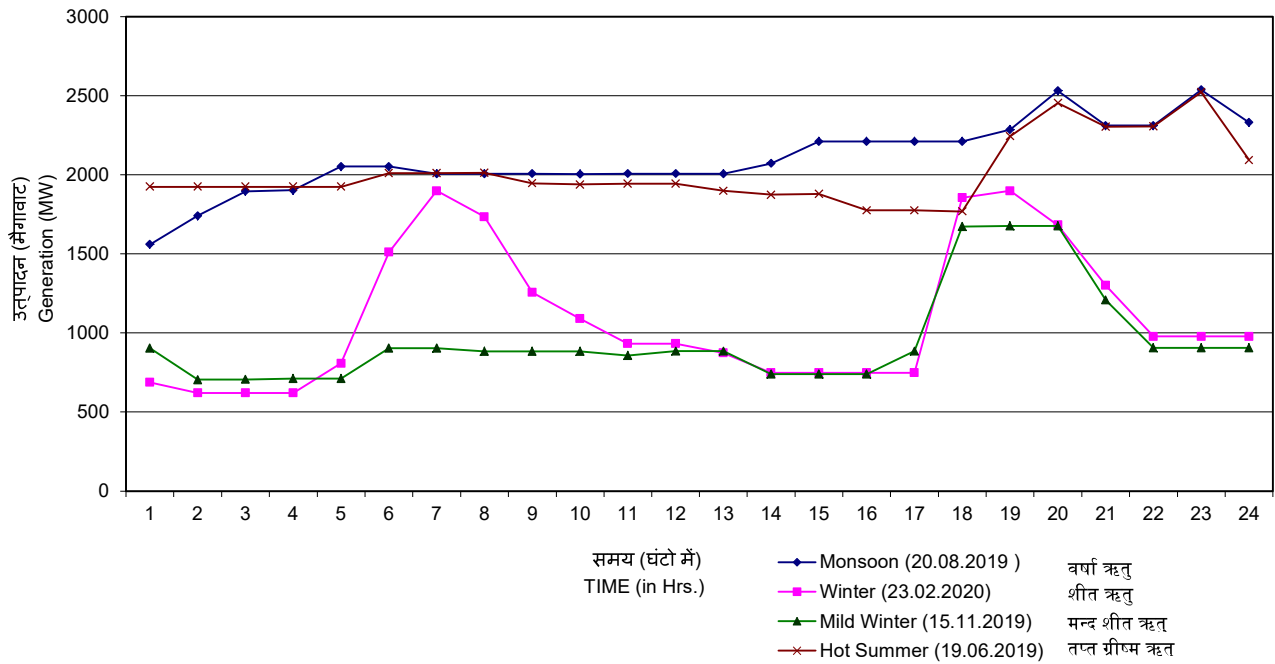
चित्र-2
 Figure - 2



वर्ष
 Year

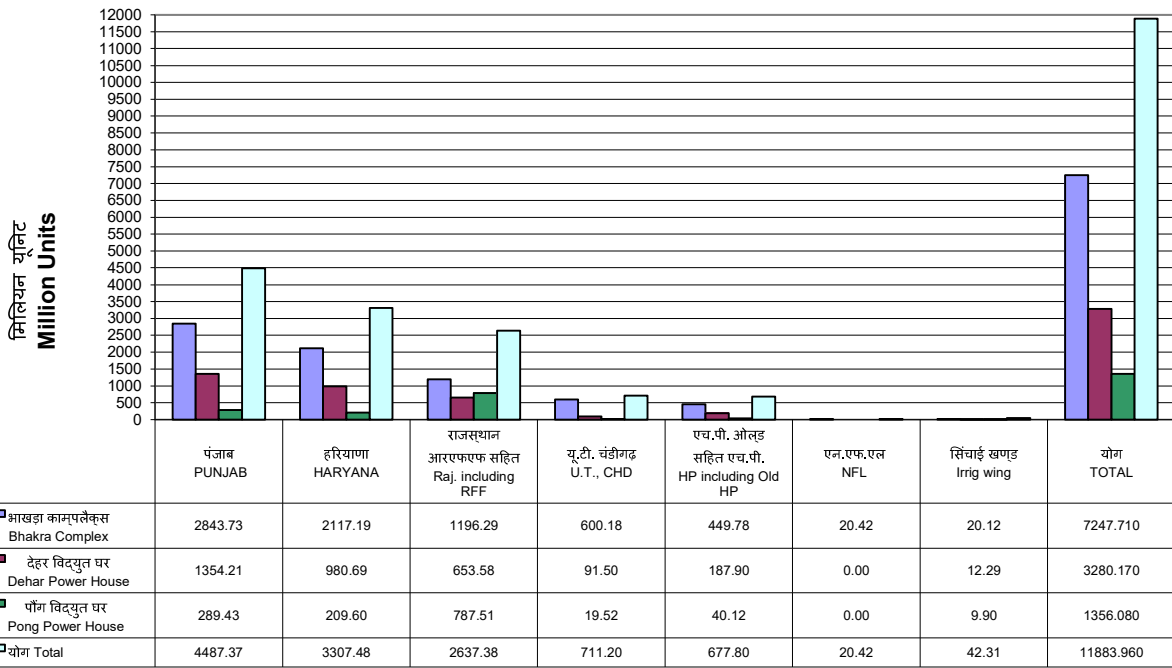
वर्ष 2019-20 के दौरान बीबीएमबी के प्रतीकात्मक दैनिक उत्पादन वक्र
 TYPICAL DAILY GENERATION CURVES OF BBMB DURING 2019-2020

चित्र-3-ए
 Fig. 3-A



वर्ष 2019-20 के दौरान बीबीएमबी विद्युत-घरों से भागीदार/लाभानभोगियों को पारेषित ऊर्जा
 ENERGY TRANSMITTED TO PARTNERS/BENEFICIARIES FROM BBMB PHs DURING 2019-20

चित्र-5
 Figure -5



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) Filling of Bhakra Reservoir started on 25th June, 2019 when the Reservoir level was El. 1604.21 ft (488.96 m).
- b) Total inflows including diversion through BSL system from 21.05.2019 to 20.05.2020 were 15.282 MAF/18.693 BCM.
- c) Diversion through BSL system from 21.05.2019 to 20.05.2020 was 3.560 MAF/4.356 BCM.
- d) Maximum level El. 1680.82 ft. (512.31 m) was attained on 20th August-2019.

- Pong Reservoir

- a) Filling of Pong reservoir started on 06th July, 2019 when the reservoir level was El. 1326.51 ft. (404.32 m).
- b) Total inflows from 21.05.2019 to 20.05.2020 were 7.067 MAF/8.645 BCM.
- c) Maximum level El. 1388.47 ft. (423.21 m) was attained on 11th September, 2019.

5.2.2 Regulation of Water Supplies and Water Account

For the preparation of water account, the year is divided into two periods i.e. the filling period from 21st May to 20th September and the depletion period from 21st Sept. to 20th May of the 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 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 21.5.2019 to 20.5.2020 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

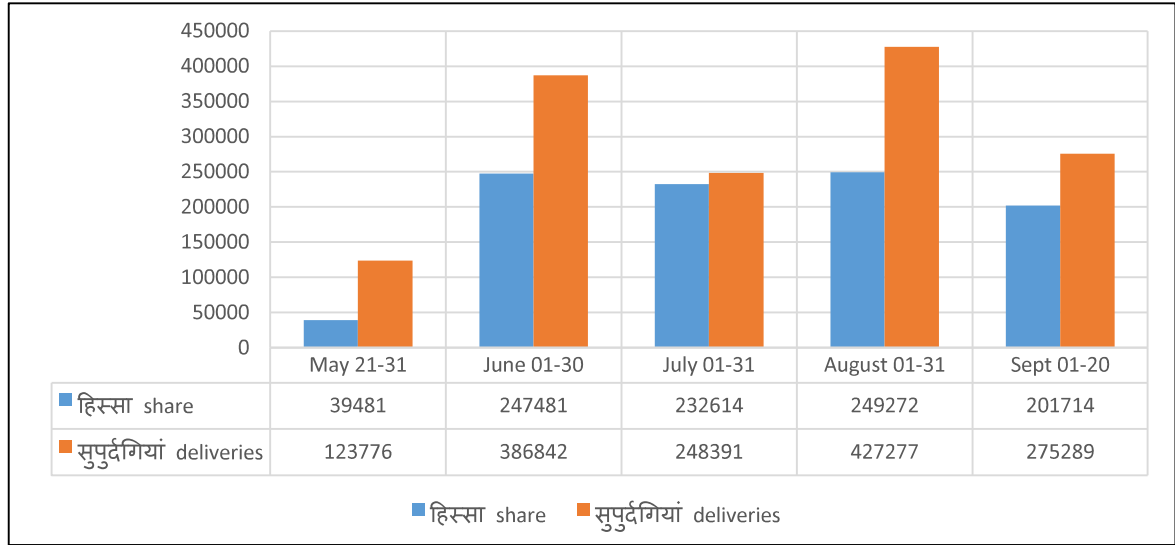
Total water supplied to the States from 21.05.2019 to 20.05.2020 has been as under:-

(All figures in million acre ft)

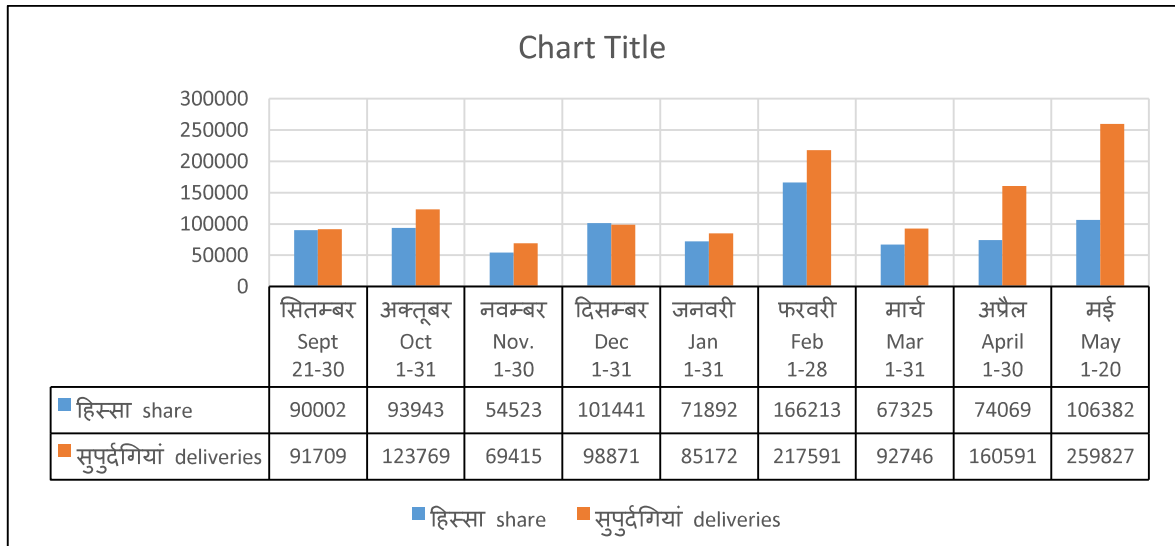
State	Satluj	Ravi-Beas	Total
Punjab	5.323	5.942	11.264
Haryana	4.028	1.893	5.922
Rajasthan	1.232	9.058	10.290
Delhi Jal Board	-	0.295	0.295
Total	10.583	17.188	27.77

दिनांक 21.05.2019 से 20.05.2020 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 Satluj water for the period from 21.05.2019 to 20.05.2020

भराई अवधि (21.05.2019 से 20.09.2019)
Filling Period (21.05.2019 to 20.09.2019)



रिक्तीकरण अवधि (21.09.2019 से 20.05.2020)
Depletion period (21.09.2019 to 20.05.2020)



Note (1) All figures are in cusec days.

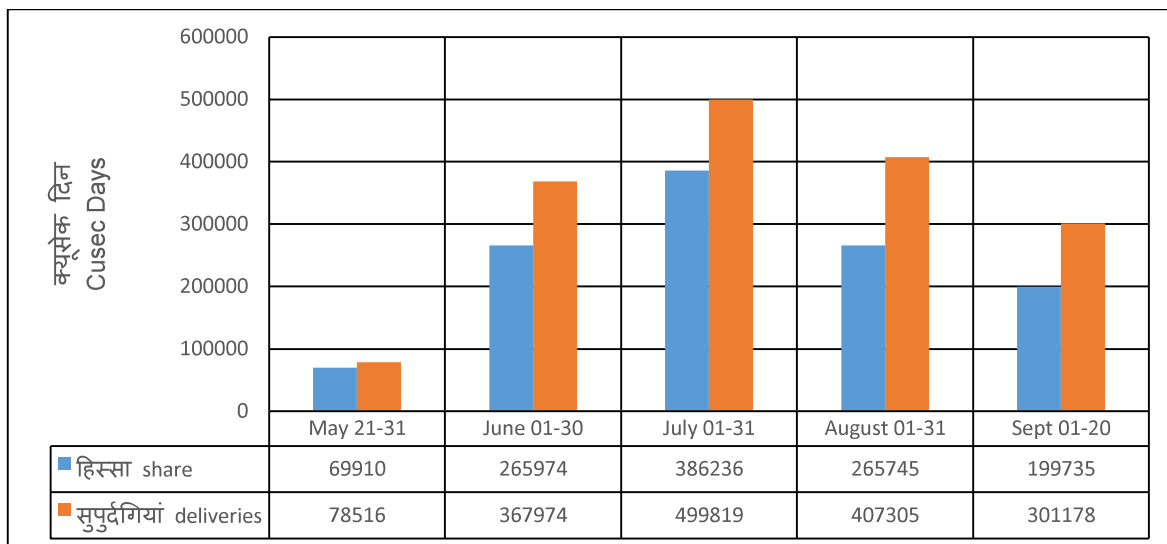
(2) The deliveries have been made as per requirements decided in Technical Committee Meeting.

नोट:-

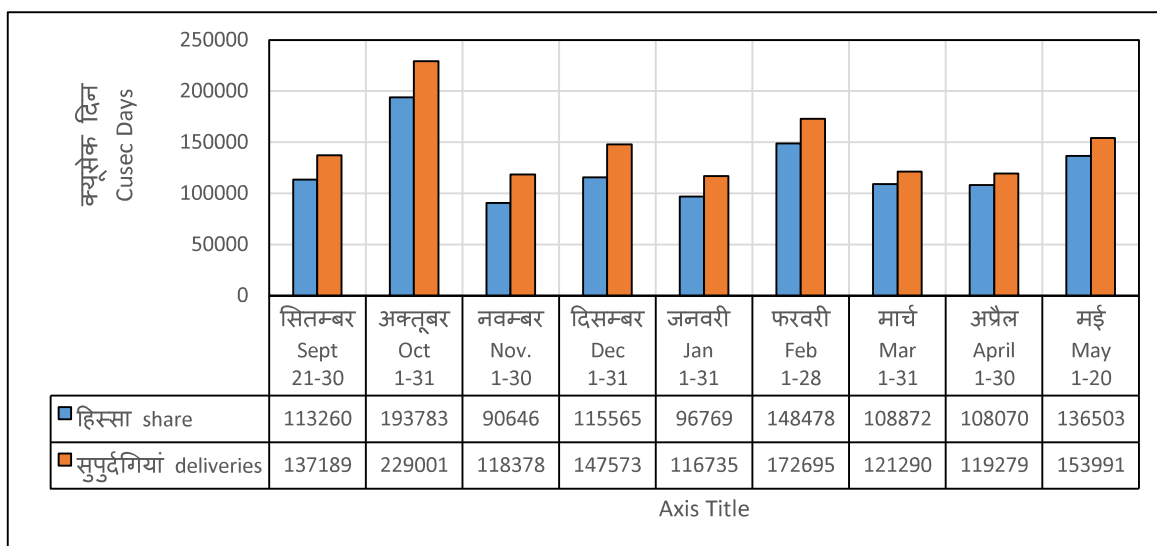
1. सभी आंकड़े क्यूसिक दिनों में ।
2. सभी सुपुर्दगियां आवश्यकता अनुसार तकनीकी समिति की बैठक में लिए गए निर्णय अनुसार ।

दिनांक 21.5.2019 से 20.05.2020 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 21.5.2019 to 20.05.2020

भराई अवधि (21.05.2019 से 20.09.2019)
Filling Period (21.05.2019 to 20.09.2019)



रिक्तीकरण अवधि (21.09.2019 से 20.05.2020)
Depletion period (21.09.2019 to 20.05.2020)



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.

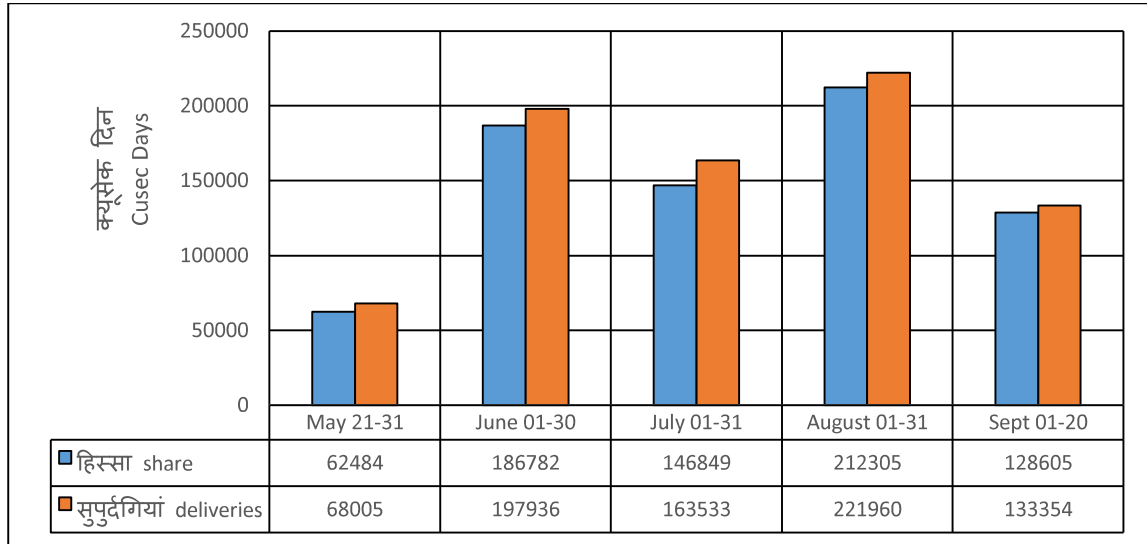
नोट:-

- सभी आंकड़े क्यूसिक दिनों में ।
- सभी सुपुर्दगियां आवश्यकता अनुसार तकनीकी समिति की बैठक में लिए गए निर्णय अनुसार ।
- पंजाब को की गई सुपुर्दगियों में रोपड़ के डाउनस्ट्रीम की गई कुछ आपूर्तियां भी शामिल हैं जो पंजाब को रोपड़ पर पहले ही बुक की जा चुकी हैं।

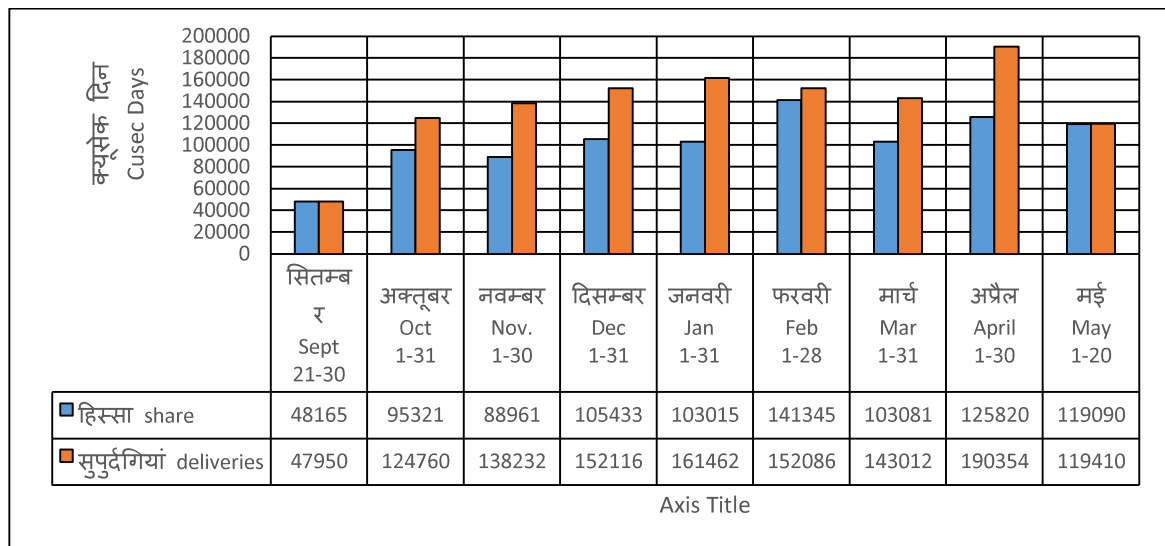
दिनांक 21.5.2019 से 20.05.2020 तक की अवधि के लिए सतलुज जल से हरियाणा को सप्लाई किए गए जल की स्थिति को दर्शाने वाली विवरणिका

Statement showing position of water supplies to Haryana out of Satluj waters for the period from 21.5.2019 to 20.05.2020

भराई अवधि (21.05.2019 से 20.09.2019)
Filling Period (21.05.2019 to 20.09.2019)



रिक्तीकरण अवधि (21.09.2019 से 20.05.2020)
Depletion period (21.09.2019 to 20.05.2020)



Note(1) All figures are in cusec days.

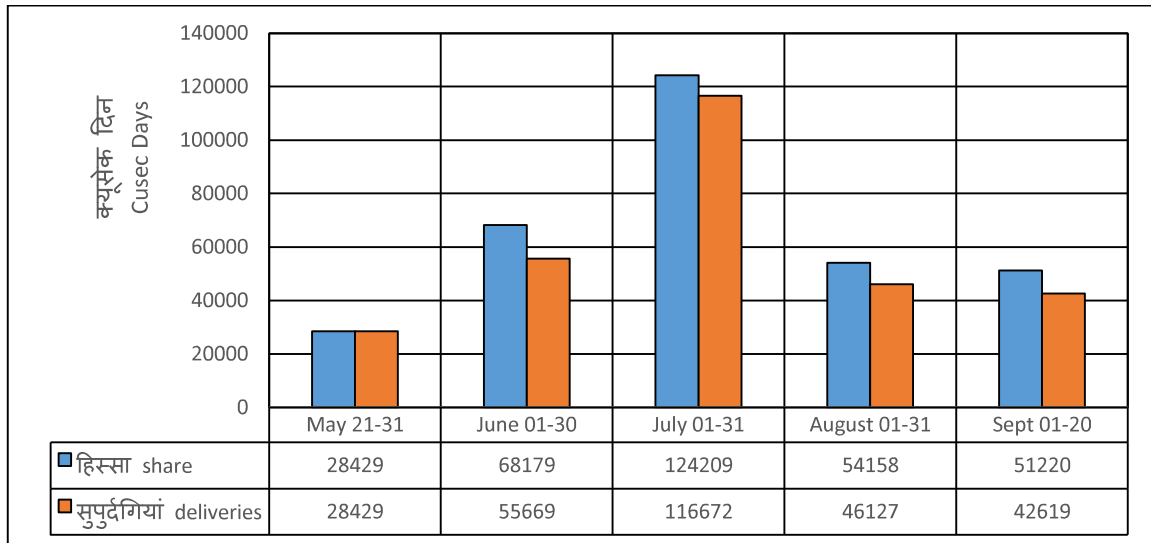
(2) The deliveries have been made as per requirements decided in Technical Committee Meeting.

नोट:-

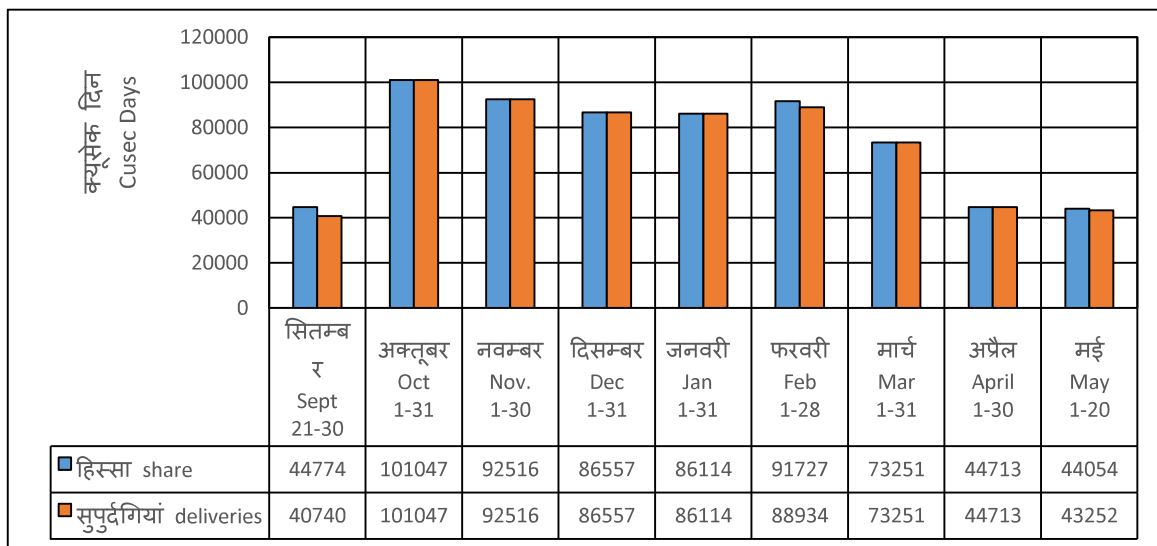
1. सभी आंकड़े क्यूसिक दिनों में ।
2. सभी सुपुर्दगियां आवश्यकता अनुसार तकनीकी समिति की बैठक में लिए गए निर्णय अनुसार ।

दिनांक 21.5.2019 से 20.05.2020 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 21.5.2019 to 20.05.2020.

भराई अवधि (21.05.2019 से 20.09.2019)
Filling Period (21.05.2019 to 20.09.2019)



रिक्तीकरण अवधि (21.09.2019 से 20.05.2020)
Depletion period (21.09.2019 to 20.05.2020)



Note(1) All figures are in cusec days.

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

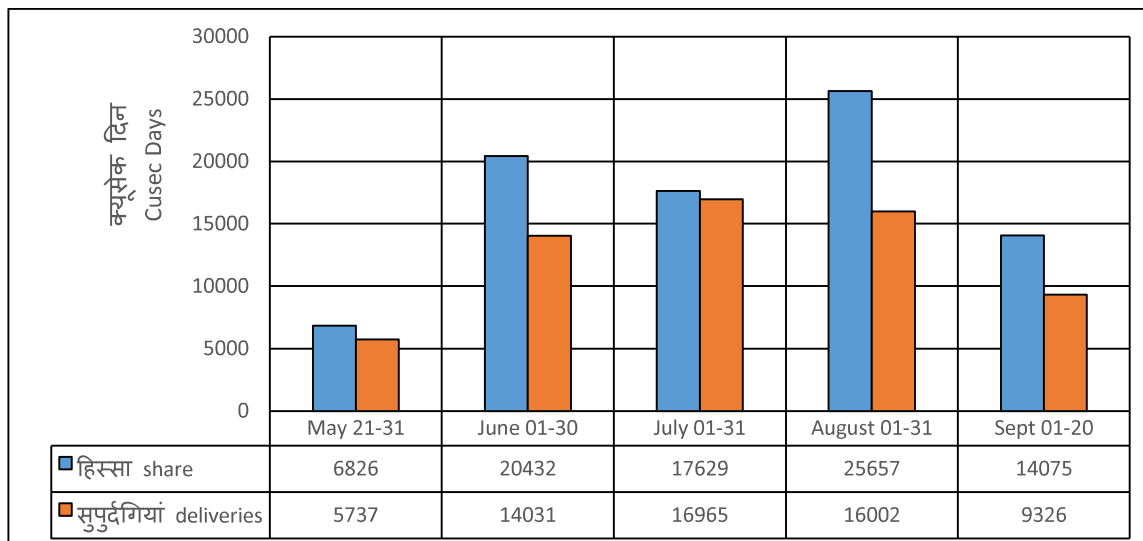
नोट:-

1. सभी आंकड़े क्यूसिक दिनों में ।
2. सभी सुपुर्दगियां आवश्यकता अनुसार तकनीकी समिति की बैठक में लिए गए निर्णय अनुसार ।

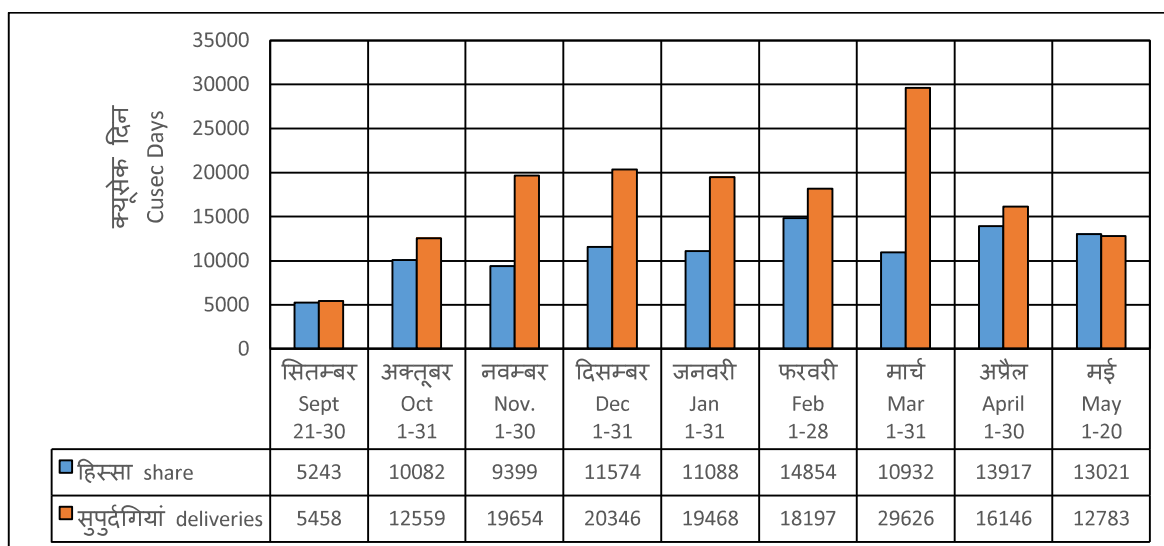
दिनांक 21.5.2019 से 20.05.2020 तक की अवधि के लिए सतलुज जल की हरियाणा के रास्ते राजस्थान को हुई सप्लाई की स्थिति को दर्शाने वाली विवरणिका

Statement showing position of water supplies to Rajasthan via Haryana out of Satluj water for the period from 21.5.2019 to 20.05.2020

भराई अवधि (21.05.2019 से 20.09.2019)
Filling Period (21.05.2019 to 20.09.2019)



रिक्तीकरण अवधि (21.09.2019 से 20.05.2020)
Depletion period (21.09.2019 to 20.05.2020)



Note(1) All figures are in cusec days.

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

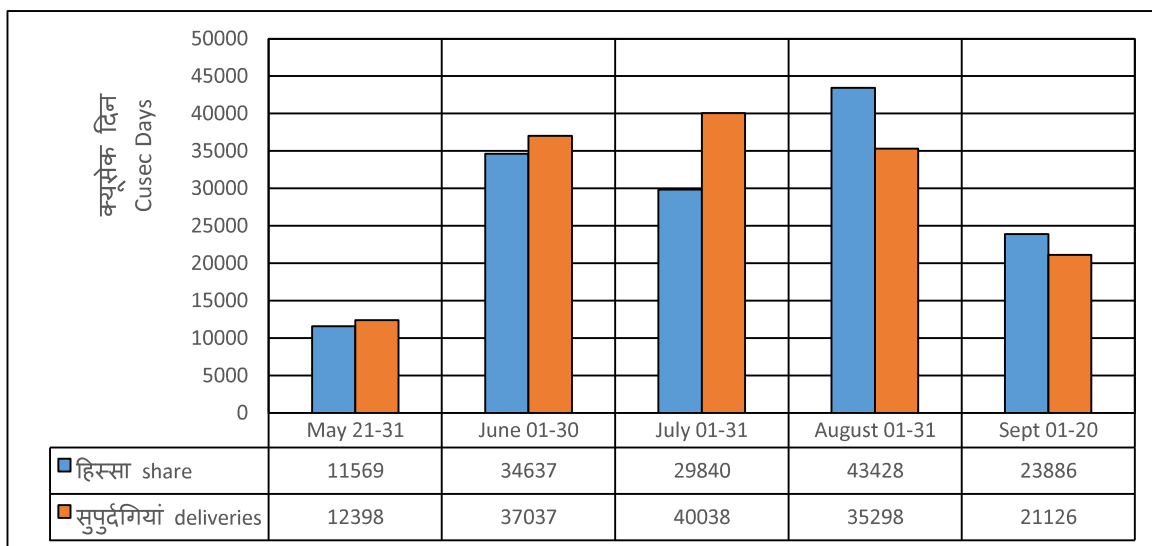
नोट:-

1. सभी आंकड़े क्यूसिक दिनों में ।
2. सभी सुपुर्दगियां आवश्यकता अनुसार तकनीकी समिति की बैठक में लिए गए निर्णय अनुसार ।

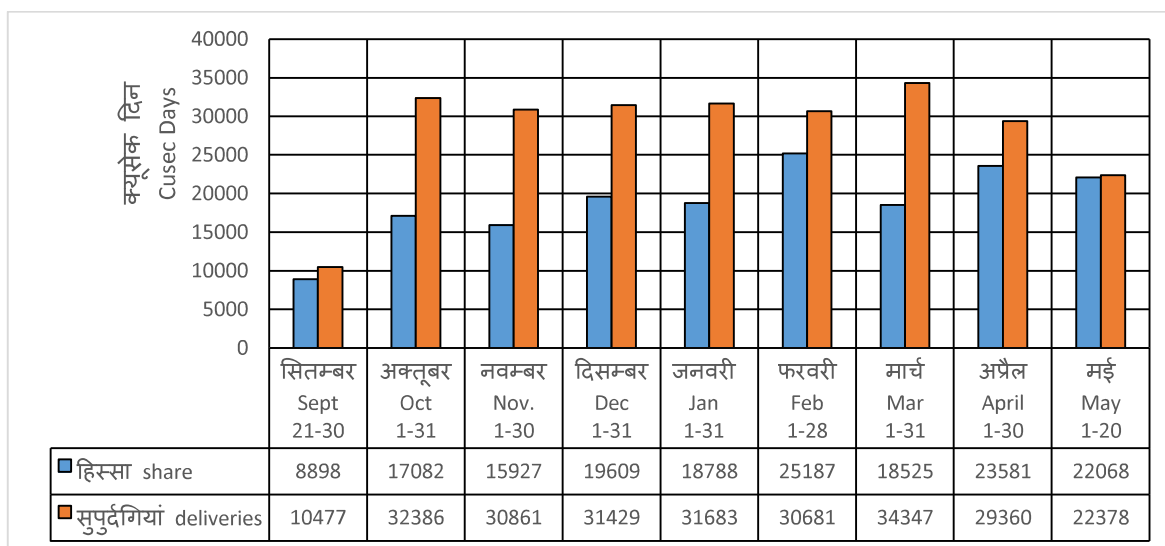
दिनांक 21.5.2019 से 20.05.2020 तक की अवधि के लिए सतलुज जल की पंजाब के रास्ते राजस्थान को हुई सप्लाई की स्थिति को दर्शाने वाली विवरणिका

Statement showing position of water supplies to Rajasthan via Punjab out of Satluj water for the period from 21.5.2019 to 20.05.2020

भराई अवधि (21.05.2019 से 20.09.2019)
Filling Period (21.05.2019 to 20.09.2019)



रिक्तीकरण अवधि (21.09.2019 से 20.05.2020)
Depletion period (21.09.2019 to 20.05.2020)



Note(1) All figures are in cusec days.

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

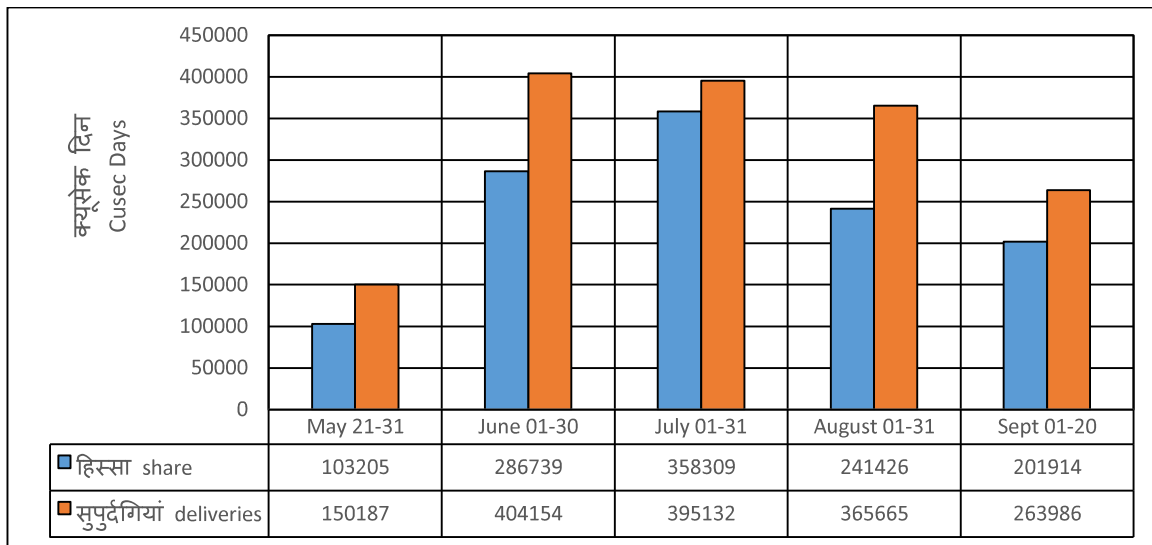
नोट:-

1. सभी आंकड़े क्यूसिक दिनों में ।
2. सभी सुपुर्दगियां आवश्यकता अनुसार तकनीकी समिति की बैठक में लिए गए निर्णय अनुसार ।

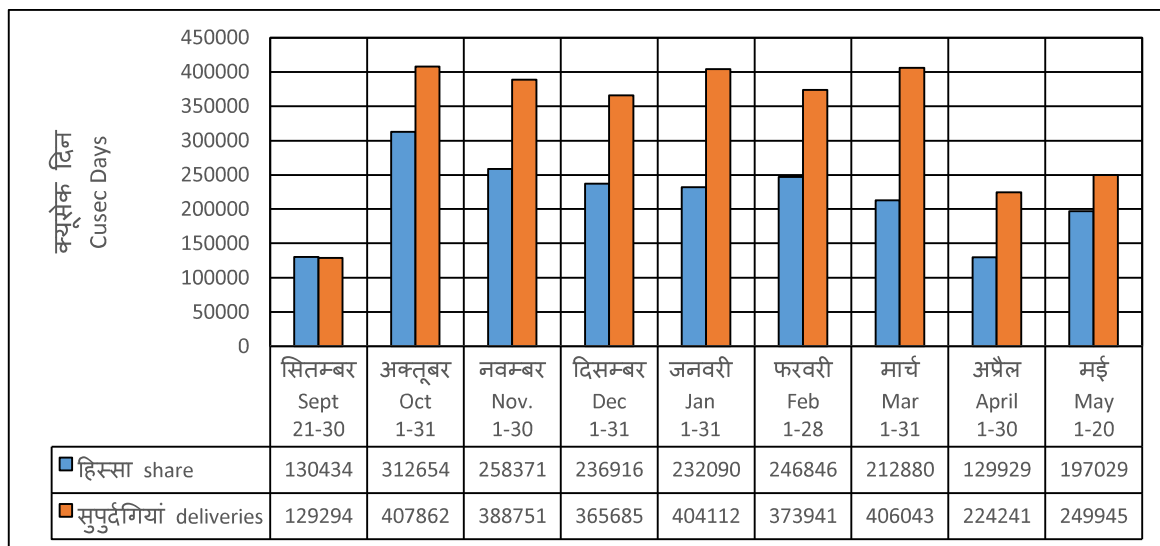
दिनांक 21.5.2019 से 20.05.2020 तक की अवधि के लिए रावी-ब्यास जल से राजस्थान को हुई जल आपूर्ति की स्थिति को दर्शाने वाली विवरणिका

Statement showing position of water supplies to Rajasthan out of Ravi-Beas water for the period from 21.5.2019 to 20.05.2020

भराई अवधि (21.05.2019 से 20.09.2019)
Filling Period (21.05.2019 to 20.09.2019)



रिक्तीकरण अवधि (21.09.2019 से 20.05.2020)
Depletion period (21.09.2019 to 20.05.2020)



Note(1) All figures are in cusec days.

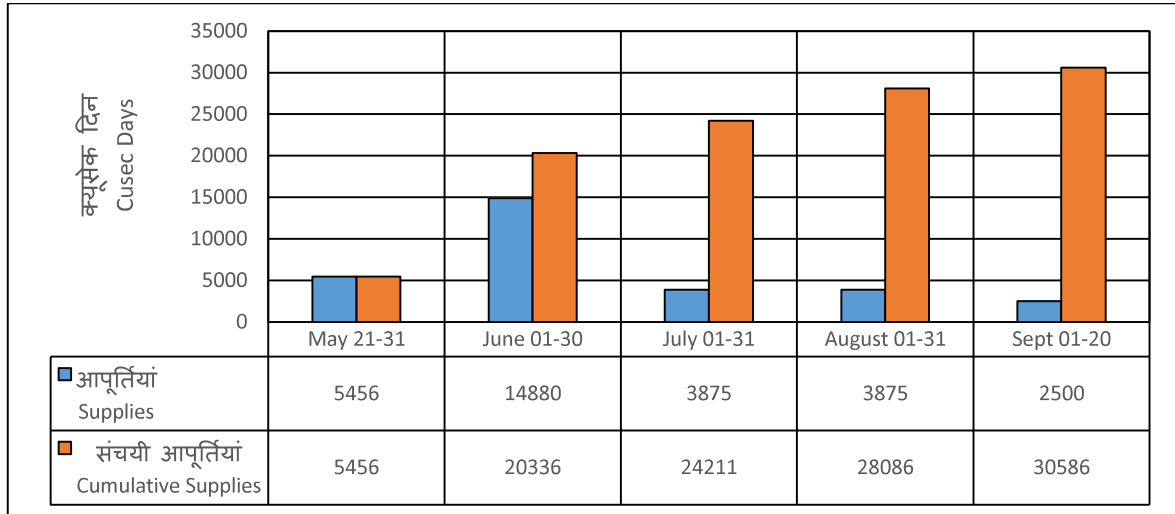
नोट:-

1. सभी आंकड़े क्यूसिक दिनों में।

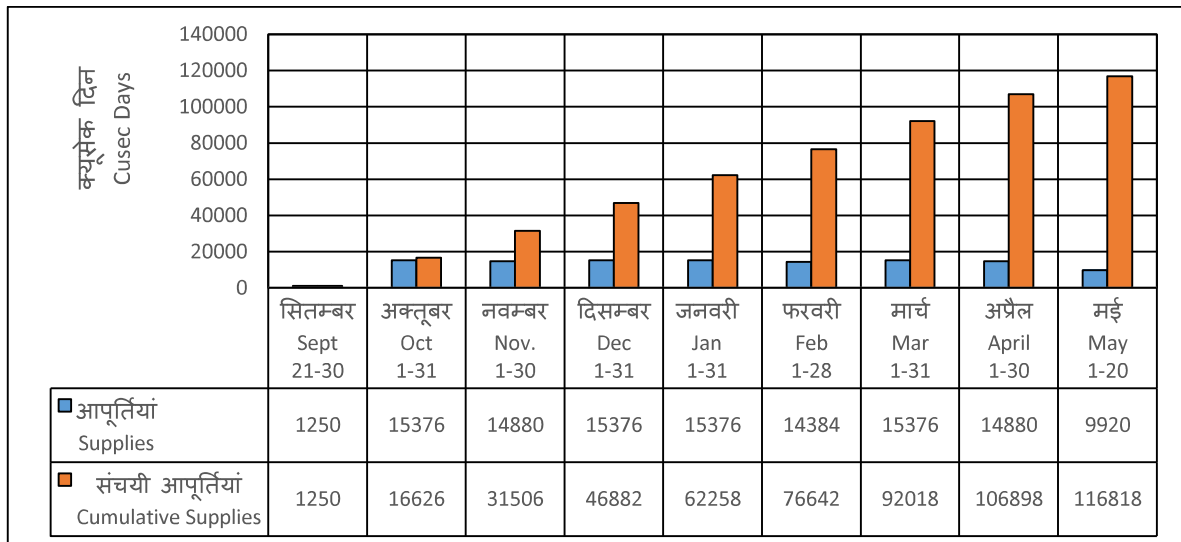
दिनांक 21.5.2019 से 20.9.2020 तक की अवधि के लिए दिल्ली जल बोर्ड को की गई जल आपूर्ति की स्थिति दर्शाने वाली विवरणिका

Statement showing position of water supplies made to Delhi Jal Board for the period from 21.5.2019 to 20.05.2020

भराई अवधि (21.05.2019 से 20.09.2019)
Filling Period (21.05.2019 to 20.09.2019)



रिक्तीकरण अवधि (21.09.2019 से 20.05.2020)
Depletion period (21.09.2020 to 20.05.2020)



नोट(1)

सभी आंकड़े क्यूसिक दिनों में ।

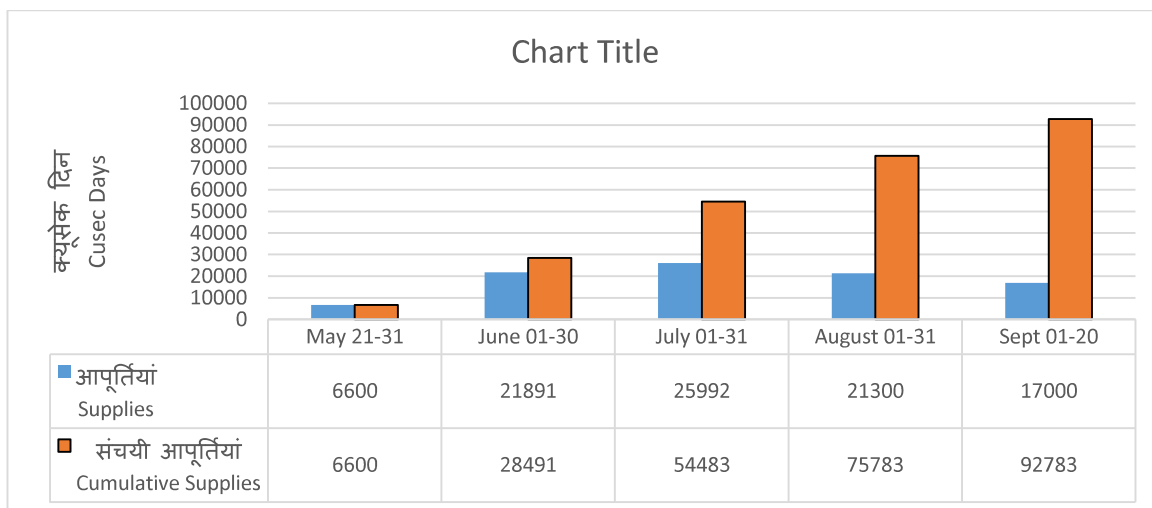
Note(1)

All figures are in cusec days.

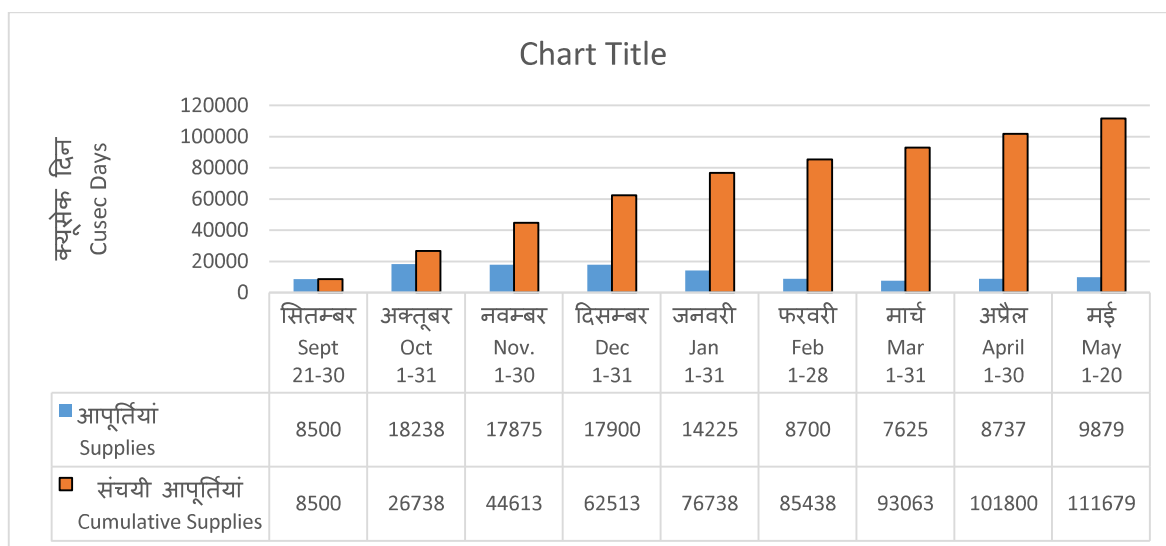
दिनांक 21.5.2019 से 20.9.2020 तक की अवधि के लिए जे एंड के जल बोर्ड को की गई जल आपूर्ति की स्थिति दर्शाने वाली विवरणिका

Statement showing position of water supplies made to J&K Jal Board for the period from 21.5.2019 to 20.05.2020

भराई अवधि (21.05.2019 से 20.09.2019)
Filling Period (21.05.2019 to 20.09.2019)



रिक्तीकरण अवधि (21.09.2019 से 20.05.2020)
Depletion period (21.09.2020 to 20.05.2020)



नोट(1)

सभी आंकड़े क्यूसिक दिनों में ।

Note(1)

All figures are in cusec days.

5.3 Automation of 220kV BBMB Substations:

BBMB has taken a significant step in automation of Substations in its Transmission System. Fully automated 200 kV Sub Station at Barnala with remote operation from 220 kV Sub Station at Sangrur (40 km from Barnala) has been commissioned recently at a cost of Rs.1.7 Crore. The Sub Station is now unmanned with Control Room locked up and no staff is deployed in shift duty. The benefits include reduced O&M cost, increased system reliability reduced downtime, remote monitoring of operations etc. Similar work for other Sub Station's located at Hissar, Charkhi Dadri Ballabgarh and Samaypur is under process.

5.4 Solar power Plants

BBMB has commissioned 1710 kWp Rooftop Solar Power Plants on 44 nos. non-residential buildings/Sub-Stations.

5.5 Protection/Technical Audit

For system strengthening and technological upgradation of BBMB power houses and transmission system, BBMB carries out third party protection audit of its substations/switchyard and technical audit of power houses.

Work Order No. 43/P&D(TS)/SS&P-358, dated 16.10.2019 has been placed on CPRI to carry out Protection Audit of all the substations & generating stations of BBMB. Out of 22 substations/generating stations to be audited as per work order, audit of 19 substations/generating stations has been completed. End to end testing of 4 nos. transmission lines (as per work order) has also been completed.



अध्याय-6 Chapter-6

परिचालन एवं अनुरक्षण 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 2019-2020:-

6.1.1 Bhakra Power Houses

A. Maintenance of Units

Unit No.	Period of Maintenance		Remarks
	From	To	
1.	07.02.2020	26.02.2020	Annual Maintenance
2	09.03.2020	25.03.2020	Annual Maintenance
3	01.04.2019	31.03.2020	The RM&U of Unit no.3 from 108 MW to 126 MW is in progress.
4.	04.04.2019	21.05.2019	Runner blade profile modification
	06.12.2019	26.12.2019	Annual Maintenance
5.	11.11.2019	03.12.2019	Capital Maintenance of penstock head gate and its hoist system.
6.	30.09.2019	10.12.2019	Annual Maintenance
	17.02.2020	14.03.2020	Capital Maintenance
7.	17.03.2020	28.04.2020	Annual Maintenance
9.	25.01.2020	15.02.2020	Annual Maintenance
10.	24.12.2019	22.01.2020	Annual Maintenance

B. Major Works

a) RM&U of Bhakra Left Bank Power House

The work of Renovation, Modernization & Uprating (RM&U) of Bhakra Left bank Power house from 5x108 MW to 5x126 MW is in progress. So far as assembly & erection of Unit no 2, 4 & 5, the same has been completed. These units are running successfully at the rating capacity of 126 MW. Thereafter during the FY 2019-20, another Unit i.e. Unit No 3 of Bhakra Left Bank has been taken on RM&U w.e.f. 01.04.2019 and following major works of RM&U of Unit No 3 have been completed/are in progress.

Unit No – 3 (Turbine)

- Disassembly and dismantling of guide vane operating mechanism and lift up gate operating ring, servomotor, guide bearing runner, head cover, throat ring and bottom cover liner, aeration pipe and other parts from the pit.
- Assembly of guide vanes, runner with existing shaft, head cover, throat ring, guide bearing, aeration pipe and other parts of pit.
- Assembly of sealing box, turbine guide bearing.
- Turbine shaft free achieved on 30.09.2019

- Assembly of guide vane operating mechanism and servomotor
- Installation of GOP system pumps and its piping works and electrical control panel.
- Installation of instrument panel & booster pumps & its piping.

Unit No – 3 (Generator)

- Disassembly and dismantlement of Generator parts and its auxiliaries
 - NDT testing of generator shaft of unit no. 3 was completed at site by CPRI
 - The complete new stator for Unit No – 3 was build up at site involving assembly of stator frame, built-up of core, core induction test, insertion of top & bottom bars, pole to pole connection, brazing work, insulating capping and taping work etc. and thereafter final electrical testing of the complete stator completed on 24.07.2019 and thereafter stator successfully lowered in pit for further assembly of machine.
 - 151 nos. weld cracks in the spider were found in NDT testing of the spider including 10 nos. defective rim bolt and these cracks were got repaired and defective rim bolts replaced with the healthy one by placing the extra work order to the M/s Andritz Hydro
 - Refurbishing of rotor, installation of brake ring, insertion of rotor poles, checking of magnetic centering, pole to pole & damper connections, rotor lead and shaft lead connections installations, installation of NDE & DE fans, spider cover assembly etc.
 - Readiness of rotor for its lowering in the stator is near to completion.
 - On completion of the pre-assembly work, lower bracket was lowered in pit and pre alignment of lower bracket checked .
 - Installation of cooling water pipe lines is near completion.
 - Laying of cable tray, cables and its termination is near completion.
 - Erection of structure and bus duct is near to completion.
- b) Further during the Oct/Nov.-2019, the installation and commissioning of the remote work station of bhakra left bank power house at SLDC, B.B.M.B (P.W) Chandigarh was completed successfully and remote operation of power house units no. 2,4 & 5 is done successfully during Nov.-2019 from SLDC, BBMB Chandigarh duly witnessed by Chairman, BBMB and now these units are being operated regularly from remote.
- c) The modification of the runner profile of the unit no. 4 was completed during April/May-2019.
- d) Excitation Transformer of Unit no – 2 has gone faulty during December 2019 due to flash in the thimbles of the excitation cable connection on Transformer and damaged parts of Excitation Transformer were repaired locally in the Power house and Excitation Transformer commissioned successfully.
- e) Under the RM&U of Unit No – 3, the existing old Unit transformer of rating 10.5/220 KV 120 MVA of CGL make have been retained for, to be uprated capacity of the machine based on report of CPRI, Bengaluru.

6.1.2 Ganguwal and Kotla Power Houses

A. Maintenance of Units

Unit No.	Period of Maintenance		Remarks
	From	To	
Ganguwal			
1	15.04.2019	24.04.2019	Annual Maintenance
	17.10.2019	22.10.2019	Half Yearly Maintenance
2	09.04.2019	15.04.2019	Quarterly Maintenance
	07.01.2020	14.01.2020	Half Yearly Maintenance
3	18.11.2019	23.11.2019	Half Yearly Maintenance
Kotla			
1	21.01.2020	25.01.2020	Half Yearly Maintenance
2	13.04.2019	26.04.2019	Annual Maintenance
	06.01.2020	11.01.2020	Half Yearly Maintenance
3.	09.04.2019	13.04.2019	Quarterly Maintenance
	05.12.2019	11.12.2019	Half Yearly Maintenance

B. Major Works

Ganguwal & Kotla Power Houses

1. Annual maintenance of 132 KV /33KV T/F T-2 of Ganguwal Power House was carried out on dated 01/05/2019.
2. Annual maintenance of Ganguwal-Kotla Tie Ckt no. 1 was carried out on dated 02/05/2019.
3. Annual maintenance of 132 KV /33KV 12.5/16 MVA T/F T-1 & T-3 of Ganguwal Power House was carried out on dated 16/05/2019.
4. Outlet Valve of Unit no.1 was replaced.
5. Measurement and marking of all EL level of floor/installation at Ganguwal & Kotla Power Houses.
6. 2 set of 110cell 220 Volt 300AH batteries Bank, one each at Ganguwal & Kotla Power House installed & commissioned on dated 27/08/2019.
7. One no. 100PSI, EIGI make compressor overhauling & repair at Ganguwal Power House on dated 03/09/2019.
8. Half yearly maintenance of 132/220KV 90 MVA I/L T/F T-2 of Ganguwal Power House was carried out on dated 21/10/2019.
9. Half yearly maintenance of 132 KV /33KV 12.5/16 MVA T/F T-1 & T-3 of Ganguwal Power House was carried out on dated 31/10/2019.
10. Half yearly maintenance of 132 KV /33KV 16 MVA T/F T-2 of Ganguwal Power House was carried out on dated 14/11/2019.

11. Annual maintenance of 132KV Bus-Coupler at Ganguwal Power House was carried out on dated 26/11/2019.
12. Annual maintenance of Ganguwal-Kotla Tie Ckt no. 2 was carried out on dated 06/12/2019.
13. Half yearly maintenance of 132/220KV 90 MVA I/L T/F T-1 of Ganguwal Power House was carried out on dated 18/12/2019.
14. Annual maintenance of breaker of 132 KV Kotla-Ropar Ckt. No. 2 at Kotla Power House was carried out on dated 26/11/2019.
15. Annual maintenance of breaker of 132 KV Kotla-Ropar Ckt. No. 3 at Kotla Power House was carried out on dated 19/12/2019.
16. Annual maintenance of breaker of 132 KV Kotla-Ropar Ckt. No. 1 at Kotla Power House was carried out on dated 01/01/2020.

6.1.3 Pong Power House

A. Maintenance of Units

Unit No.	Period of Maintenance		Remarks CP.138
	From	To	
1	27.10.2019	04.11.2019	Half Yearly Maintenance
3	09.04.2019	13.05.2019	Annual maintenance of machine along with replacement of existing governor of machine with new digital governor.
	11.10.2019	18.10.2019	Half Yearly Maintenance
4.	03.10.2019	10.10.2019	Half Yearly Maintenance
5.	13.05.2019	17.06.2019	Annual maintenance of machine along with replacement of existing governor of machine with new digital governor.
	19.10.2019	26.10.2019	Half Yearly Maintenance
6.	26.03.2019	11.04.2019	Annual maintenance
	05.11.2019	13.11.2019	Half Yearly Maintenance
	01.02.2020	06.04.2020	Annual maintenance of machine along with replacement of generator and transformer protection panel.

B. Major Works

1. Replacement of existing main stator, core, winding and frame of Unit No .2 at Pong Power House Talwara.
2. Capital Maintenance of Unit No 2 at Pong Power House Talwara
3. Providing H.S. Lubrication system along with new modified thrust pads for Pong

Unit No. 2 at Pong Power House Talwara.

Replacement work of old 60MW stator of Unit No2 with new complete wound stator assembly of 66 MW along with new stator air coolers & generator cooling water pipings (with thermal insulation) complete with valves & fittings for stator air coolers and oil coolers inside and outside pit, New top & bottom air guides and air baffle plates , flow meters , temperature scanner etc., carrying out capital mtc. of machine and providing H.S. Lubrication system along with new modified thrust pads for Pong Unit No. 2 at Pong Power House Talwara was taken in hand by BHEL on 21.02.2019.

The dismantling of Unit No 2 was completed on dated 08.04.2019. The stator core builds up work completed on 13.06.2019. Core consolidation and core flux test carried out on 22.06.2019 by BHEL. The HV testing of bottom and top bar carried out on 04.09.2019 after placement of bars in respective stator slots. The HV testing of bottom and top bar together carried out on 21.09.2019 by BHEL. The dressing and brazing of top end bar to bar joints completed on 09.10.2019. Tan Delta Test, Capacitance test, Partial discharge test and DC winding resistance Test of stator winding was completed on 07.12.2019. The lifting and lowering of new stator in the generator pit was completed on dated 09.12.2019. The rotor of Unit No. 2 was lowered on dated 19.12.2019.

The erection activities of Unit No 2 was completed on 18.03.2020. During Unit preparation for mechanical spinning, the PRV of Unit No 2 stucked up on 19.03.2020. To attend the fault, M/S BHEL showed their inability to deploy experienced person at site as Punjab State was under lockdown for taking preventive measures to avoid spreading of COVID 19 Corona virus for which BBMB deployed its maintenance staff who worked along with 06 Nos. workers of your Sub. Contractor of M/S Go Goal to attend the problem and the fault was successfully rectified on 28.03.2020.

In order to meet peak hour generation demand and to maintain the essential services uninterrupted due to complete lockdown by the Govt. of India against pandemic COVID 19 , it was decided by BBMB higher authority to complete the pending commissioning work of Unit No. 2 by deputing maintenance staff of Pong Power House so that Unit No 2 can be available for generation as early as possible. The commissioning work of unit is under progress.

- The work of replacement of existing governors of Unit No.3, 5 and 2 with new microprocessor based digital electro hydraulic governors was taken in hand by M/S Andritz Hydro Pvt. Ltd one by one w.e.f. 09.04.2019 , 13.05.2019 and 13.05.2019 respectively.
- The erection, testing and commissioning of new governors of Unit No 3, 5 and 2 was successfully completed on dated 13.05.2019 , 17.06.2019 and 23.04.2020 respectively.
- The servicing of 01 No. 20 ton capacity Semi-gantry crane installed at Pong Power House was successfully carried out from 14.11.2019 to 22.11.2019 by M/S Shaktiman Cranes New Delhi.
- Replaced 01 No. old electrically operated rolling shutter installed at main entrance of Pong Power House Talwara with new one. The new rolling shutter was successfully installed and commissioned by M/S Punjab Rolling Shutter Ludhiana on dated 23.05.2019.
- The Overhauling / up gradation of OTIS make elevator #52 NE 02440 capacity 16 persons installed at Pong Power House Talwara was started by M/S OTIS Chandigarh on 15.04.2019 . After erection and testing, the Elevator was

successfully commissioned on 24.04.2019. by M/S OTIS.

- Successfully carried out the rectification work of generator earth fault of Unit No 5 of Pong Power House, Talwara w.e.f. 30.09.2019 to 09.10.2019 and 16.12.2019 to 21.01.2020 departmentally without requisitioning the services of BHEL and ahead of schedule and thus improving the availability of machine to save the generation loss. Total 08 Nos. stator coils replaced with new ones during the above 02 Nos. stator earth fault of Unit No 5.
- Successfully carried out the rectification work of stator earth fault of Unit No 4 of Pong Power House, Talwara w.e.f. 24.04.2019 to 23.05.2019 , 26.08.2019 to 21.09.2019 and 30.12.2019 to 10.01.2020 departmentally without requisitioning the services of BHEL and ahead of schedule and thus improving the availability of machine to save the generation loss. Total 18 Nos. stator coils and 02 Nos. rotor field coils replaced with new ones during the above 03 Nos. stator earth fault of Unit No 4.

6.1.4 Dehar Power House

A. Maintenance of Units

Unit No.	Period of Maintenance	Remarks
I	28.01.2019 to 27.05.2019 07.01.2020 to 27.01.2020	Capital Maintenance Annual Maintenance
Rotary Valves M/C 1&2	28.01.2019 to 10.05.2019	Capital Maintenance Rotary Valves
III	23.03.2020 to 11.04.2020	Annual Maintenance
IV	17.02.2020 to 09.03.2020	Annual Maintenance
V	05.11.2019 to 31.01.2020	Annual Maintenance
VI	23.09.2019 to 16.02.2020	Capital Maintenance

6.1.5 Renovation, Modernization & Uprating (R, M&U) of Bhakra Left Bank Power House

R, M&U of old power houses not only gives new lease of life to the machines but is also a significant step towards meeting the aspirations of the nation by adding low cost green peaking power to the system.

BBMB has undertaken an ambitious R,M&U of its existing hydro generating unit. Through RM&U, BBMB has already added 365 MW of incremental capacity. Presently, R,M&U of 5 No. machines of Bhakra Left Bank Power House is under progress. All the five machines will be uprated from 108 MW to 126 MW each. Three Units have already been uprated from 108 to 126 MW and other two units are yet to be uprated during the year, thus providing additional capacity of 36 MW (Total 401 MW). The contract stands awarded to the consortium led by M/s Sumitomo Corporation, Japan. Total cost of R,M&U works is 489.77 crore approx. (Inclusive of cost of equipment to be procured by BBMB i.e. Generator Transformers, Numerical protection schemes and exclusive of IDC, Bank/Finance/ Legal charges etc.).

The first unit (Unit-2) of left Bank Power House was commissioned on 18th July, 2013 after successful R,M&U. Similarly the second Unit (Unit No.5) which was under R,M&U works w.e.f. 11th April, 2011, has also been commissioned on 2nd October, 2013. The third Unit (Power House Unit No.4) was taken over for operational run after R,M&U on 05.08.2015.

Regarding localized cavitation observed on the runner blades of Power House Unit No.2 the modification of runner blade profile through solid piece welding was carried out at the site on 10th June 2016 as per meeting held by the Management with the Consortium on 13th January, 2016 and 02nd March, 2016. The modification carried out on the runner of Unit No.2 remained successful and also approved by Board of BBMB on dated 19.11.2018.

Based on the report of CPRI, Bangalore, of Generator shaft of Unit 5, spare new Generator Shaft (as earlier ordered on M/s Andritz Hydro) alongwith the new spider rim and other related parts ordered on dated 14.10.2016 on M/s Andritz Hydro GmbH, Austria have been replaced with existing components of Unit No. 5 of Bhakra Left Bank Power House. The work for the replacement of shaft, spider, rim and other related parts alongwith various activities had been started on 21.10.2016 and put on commercial run on dated 15.06.2018. The unit is running with output of 126MW

Power House Unit No.3 has been taken on shutdown for RM&U works on 1st April, 2019 .

The commencement of R, M&U works of the last 5th Unit (Power House Unit No.1) shall be based on commissioning of 4th unit (Power House Unit No.3).

6.1.6 **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

- Old 8/4 MVA 132/11 kV transformer dismantled and 10/12.5 MVA 132/11 kV transformer commissioned after shifting from Kurukshetra at 220 kV, S/Stn., Narela.
- Replaced the old 132/11 kV, 16/20 MVA transformer with new ECE make 132/11 kV, 16/20 MVA transformer at 220 kV, S/Stn., Kurukshetra.
- Damaged BHEL make 220/132 kV, 100 MVA T/F replaced with 220/132 kV, 100 MVA T/F (EMCO make) (Testing & Commissioning) at 220 kV, S/Stn., Hisar.

ii) Circuit Breakers

- 1 no. damaged Blue-phase limb of 220 kV circuit breaker (CGL make) installed on 220/132 kV transformer T-2 has been replaced with new limb at 400 kV S/Stn., Panipat.
- Replacement of existing old 17 No. 220 kV SF-6 circuit breakers of various circuit with new SF-6 circuit breaker (CGL make) at 220 kV S/Stn., Jamalpur.
- Old 245 kV SF-6 circuit breaker (CGL make) of 220/66 kV, 60 MVA T/F -3 has been replaced with new SF-6 breaker (CGL make) at 220 kV S/Stn., Sangrur.
- 1 No. SF-6 Circuit Breaker of 220 kV Bhiwani-Dadri Circuit-1 installed & commissioned at 400 kV S/Stn., Bhiwani.
- 1 No. SF-6 Circuit Breaker of 220 kV Bhiwani-Dadri Circuit-2 installed & commissioned at 400 kV S/Stn., Bhiwani.

- 1 No. SF-6 Circuit Breaker of 220 kV Bhiwani-Hisar Circuit-1 installed & commissioned at 400 kV S/Stn., Bhiwani.
- 1 No. SF-6 Circuit Breaker of 220 kV Bhiwani-Hisar Circuit-2 installed & commissioned at 400 kV S/Stn., Bhiwani.
- 1 No. SF-6 Circuit Breaker of 220 kV Bus Coupler installed & Commissioned at 400 kV S/Stn., Bhiwani.
- 1 No. SF-6 Circuit Breaker of 220 kV ICT (A-6) installed & commissioned at 400 kV S/Stn., Bhiwani.
- 1 No. SF-6 Circuit Breaker of 220 kV Bhiwani-Dadri Circuit-2 installed & commissioned at 220 kV S/Stn., Charkhi Dadri.
- 1 No. SF-6 Circuit Breaker of 220 kV Charkhi Dadri-Ballabgarh Single Circuit installed & commissioned at 220 kV S/Stn., Charkhi Dadri.
- 1 No. 245 kV Circuit Breaker replaced on 220 kV Samaypur-FGPP Circuit-1 at 220 kV S/Stn., Samaypur.
- 1 No. 66 kV Circuit Breaker replaced of 220/66 kV 100 MVA Transformer T-3 at 220 kV S/Stn., Ballabgarh.
- Testing & Commissioning of circuit breaker of 220 kV I/L at 220 kV MISS Ganguwal.
- Testing & Commissioning of X-3 CGL make circuit breaker after overhauling at 400 kV sub-station, S/Stn., Panipat.
- 220 kV Thermal Circuit-3 commissioned after overhauling at 400 kV S/Stn., Panipat.
- Testing & Commissioning of circuit breaker of 220 kV I/L Ckt-II at 220 kV Miss Ganguwal.
- Testing & Commissioning of X-5 CGL make circuit breaker of 400 kV Bhiwani-Rajpura Circuit replaced with new SF-6 circuit breaker at 400 kV S/Stn., Bhiwani.

iii) **Current Transformers (CTs)**

- 2 No. 400 kV CTs (X-3 & X-5) has been replaced with new CTs at 400 kV S/Stn., panipat.
- Damaged 66 kV CT (Kapco make) of 220/66 kV, 100 MVA T/F T-3 has been replaced with new (Mehru make) CT at 220 kV S/Stn., Jamalpur.
- Damaged 66 kV CTs (Elec. Field make) of 66 kV Dhulkote-Ambala city-2 have been replaced with new CTs at 220 kV S/Stn., Dhulkote.
- Defective 245 kV CT (SCT make) of 220/132 kV, 100 MVA T/F No.1 has been replaced with new CT (BHEL make) at 220 kV S/Stn., Jalandhar.
- Damaged 245 kV CT (BHEL make) of 220/132 kV, 100 MVA T/F No.1 has been replaced with new CT (Heptacre make) at 220 kV S/Stn., Jalandhar.
- 220 kV CT (HBB make) of 220 kV Bhakra – Jamalpur Ckt-II has been replaced (due to oil leakage) with new CT (Heptacare power make) at 220 kV S/Stn., Jamalpur.
- 3 No. 245 kV CT replaced on Bus Coupler-II at 220 kV S/Stn., Samaypur.
- 1 No. 245 kV CT replaced on 220 kV Ballabgarh-Samaypur Circuit-II at 220 kV S/Stn., Ballabgarh.
- 3 No. 245 kV CT installed on Bus Sectionalizer at 220 kV S/Stn., Samaypur.
- 1 No. 66 kV CT replaced on Globe Steel at 220 kV S/Stn., Ballabgarh.
- 3 No. 72.5 kV CT replaced on 66 kV Ballabgarh-Faridabad Circuit-I at 220 kV S/Stn., Ballabgarh.
- Testing & Commissioning of 220 kV CT of 220kV Ganguwal-Bhakra-III, at 220 kV S/Stn., Bhakra.
- Testing & Commissioning of 132 kV Mehru make CT of 220/132 kV, 100 MVA T/F

T-1 at 220 kV S/Stn., Hisar.

- Testing & Commissioning of Red Phase CT of 220 kV Samaypur-Palwal-I at 220 kV S/Stn., Samaypur.
- Testing & Commissioning of Red Phase CT of 220 kV Samaypur-Palwal-II at 220 kV S/Stn., Samaypur.

iv) CVT/PTs

- 6 Nos. 400 kV CVTs has been replaced with new CVTs at 400 kV, S/Stn., Panipat.
- 3 Nos. 220 kV PTs has been replaced with new PTs at 400 kV, S/Stn., Panipat.
- 7 Nos. 132 kV CVTs has been replaced with new PTs at 400 kV, S/Stn., Panipat.
- 2 Nos. damaged 132 kV CVTs has been replaced with new PTs at 220 kV S/Stn., Kurukshetra.
- Providing 6 Nos. 220 kV PTs controlling 220 kV Bhakra – Jamalpur Ckt-I & II at 220 kV S/Stn., Jamalpur
- Replacement of 8 Nos. 245 kV CVT (WSI make) with new PTs (CGLmake) & 4 Nos. coupling capacitor installed at various feeder at 220 kV S/Stn., Sangrur.
- Replacement of 9 Nos. 245 kV CVTs with new PTs (CGLmake) & 3 Nos. Coupling capacitors at 220 kV S/Stn., Jalandhar.
- 245 kV CVT Yellow-phase (Rade Koncar make) replaced with 245 kV PT (CGL make) on 220 kV Charkhi Dadri-Panipat Single Circuit at 220 kV S/Stn., Charkhi Dadri.
- 245 kV CVT replaced with 245 kV PT + Coupling capacitor on red phase of 220 kV Ballabgarh-BTPS Circuit-II at 220 kV S/Stn., Ballabgarh.
- 245 kV CVT replaced with 245 kV PT on Blue-phase of Bus-1 at 220 kV S/Stn., Ballabgarh.
- 3 Nos. CVT replaced with New PT's of Red, Blue & Yellow-phase of Bus-I at 220 kV S/Stn., Hisar.
- 1 No. CVT replaced with New PT on Red-phase of Bus-II at 220 kV S/Stn., Hisar.
- 1 No.132 kV CVT replaced with New PT on Red-phase of 132 kV Hisar-Sirsa Circuit at 220 kV S/Stn., Hisar.
- Testing & Commissioning of Blue-phase PT of Ganguwal MGG-Circuit at 220 kV MISS Ganguwal left side.
- Testing & Commissioning of Yellow-phase PT of 220 kV Bus bar left side at 400 kV S/Stn. Panipat.
- Testing & Commissioning of Red-phase & Blue Phase PT of 220 kV at 400 kV S/Stn. Panipat.

v) Lightning Arrestors (LAs)

- 1No. 120 kV LA has been replaced with new LA at 400 kV S/Stn, Panipat
- 2Nos. 198 kV LAs have been replaced with new LAs at 220 kV S/Stn, Delhi.
- Damaged 198 kV LA (CGL make) of 220 kV Sangrur – Barnala S/C has been replaced with new (Lamco make) LA at 220 kV S/Stn, Sangrur.
- Damaged 198 kV LA (Oblum make) of 220 kV Jamalpur–Sangrur Ckt.-I has been replaced with new (Lamco make) LA at 220 kV S/Stn, Jamalpur.
- Damaged 198 kV LA (Oblum make) of 220 kV Jamalpur–Dhandari Ckt.-I has been replaced with new (Lamco make) LA at 220 kV S/Stn, Jamalpur.
- Damaged 120 kV LA (CGL make) of 132 kV Jamalpur – Swadi kalan (Moga-2) has been replaced with Old (CGL make) LA after removal from 132 kV Jamalpur-Goraya feeder at 220 kV S/Stn, Jamalpur.

- Providing new 120 kV LA (CGL make) of 132 kV Jamalpur – Goraya feeder at 220 kV S/Stn, Jamalpur.
- Damaged 198 kV LA (CGL make) of 220 kV Jamalpur –Sangrur Ckt.-II has been replaced with new (Lamco make) LA at 220 kV S/Stn, Jamalpur
- Damaged 120 kV LA (CGL make) of 220/132 kV, 100 MVA T/F T-3 (132 kV Side) has been replaced with new (CGL make) LA at 220 kV S/Stn, Jamalpur.
- Damaged 198 kV LA (CGL make) of 220 kV Bhakra - Jamalpur Ckt.-II has been replaced with new (CGL make) LA at 220 kV S/Stn, Jamalpur.
- Damaged 30 kV LA (Elpro make) of 66/33 kV, 20 MVA T/F T-3 (33kV side) has been replaced with new (Birla make) LA at 66 kV S/Stn, Chandigarh.
- Damaged 120 kV LA (CGL make) of 132 kV Jamalpur – Phillour S/C has been replaced with new LA (Electro lites make) at 220 kV S/Stn, Jamalpur.
- Damaged 198 kV LA (CGL make) of 220 kV Jamalpur –Dhandari Ckt.-II has been replaced with new (Lamco make) LA at 220 kV S/Stn, Jamalpur.
- Damaged 198 kV LA (CGL make) of 220 kV Bhakra - Jamalpur Ckt.-I has been replaced with new (Electro lites make) LA at 220 kV S/Stn, Jamalpur.
- 1 No. 198 kV LA replaced on Samaypur-FGPP Circuit-I at 220 kV S/Stn, Samaypur.
- 1 No. LA replaced on 66 kV Ballabgarh-Hyderabad Circuit at 220 kV S/Stn, Ballabgarh.
- 1 No. LA replaced on Yellow phase of 220/132 kV 100 MVA T/F T-1, of 220 kV side at 220 kV S/Stn, Hisar.
- 1 No. LA replaced on Red phase of 132 kV Hisar-Sirsa Circuit at 220 kV S/Stn, Hisar.
- 1 No. LA replaced on Red phase of 132 kV Hisar-Rajgarh Circuit at 220 kV S/Stn, Hisar.

vi) Isolators

- 4 Nos. 132 kV isolators replaced with new isolators at 400 kV S/Stn Panipat.
- 2 No. 245 kV Isolators replaced (Bus-1 & Bus-2) of 220/66 kV, 100 MVA, Transformer T-2 at 220 kV S/Stn, Ballabgarh.
- 1 No. Isolator replaced on ICT-IV (Bus-II-A) at 220 kV S/Stn, Samaypur.
- 1 No. 72.5 kV line Isolator replaced on Ballabgarh-Palla Circuit-II at 220 kV S/Stn, Ballabgarh.
- 1 No. 72.5 kV Bus Isolator (Bus-II) replaced on 66/33 kV 20 MVA Transformer at 220 kV S/Stn, Ballabgarh.
- 1 No. 72.5 kV Bus Isolator (Bus-II) replaced on 66/33 kV 16 MVA Transformer at 220 kV S/Stn, Ballabgarh.
- 1 No. 72.5 kV Bus Isolator (Bus-II) replaced on 66 kV Ballabgarh-Palla Circuit-II at 220 kV S/Stn, Ballabgarh .
- 1 One No. 72.5 kV Bus Isolator (Bus-I) replaced on 66/33 kV 20 MVA Transformer at 220 kV S/Stn, Ballabgarh .
- 1 No. 72.5 kV Bus Isolator (Bus-I) replaced on 66 kV Ballabgarh-Palla Circuit-II at 220 kV S/Stn, Ballabgarh .
- 1 No. 72.5 kV Bus Isolator (Bus-I) replaced on 66/33 kV 20 MVAR Capacitor Bank-1 at 220 kV S/Stn, Ballabgarh .
- 1 No. 72.5 kV Bus Isolator (Bus-I) replaced on 66/33 kV 16 MVAR Capacitor Bank-1 at 220 kV S/Stn, Ballabgarh .
- 1 No. 72.5 kV Bus isolator (Bus-II) replaced on 66 kV Ballabgarh-Sohna Circuit at 220 kV S/Stn, Ballabgarh .
- 1 No. 72.5 kV line isolator replaced on 66 kV Ballabgarh-Palwal Circuit-I at 220

kV S/Stn, Ballabgarh.

vii) Protection

- Defective Numerical Protection scheme Micom P-742 (Alstom make) controlling Bus-Sectionalizer has been replaced with new Micom P-742 (Alstom make) at 220 kV S/Stn, Jamalpur.
- Defective Numerical Protection scheme Micom P-742 (Alstom make) controlling 220 kV Jamalpur – Sangrur Ckt-I has been replaced with new Micom P-742 (Schneider make) at 220 kV S/Stn, Jamalpur.
- Old Razo distance protection scheme controlling 220 kV Jamalpur – Dhandari Ckt-II has been replaced with new Numerical distance protection scheme Siprotech (7SD5) at 220 kV S/Stn, Jamalpur.
- Existing SHPM-101 (Main-2) Static Protection Scheme replaced with MICOM P 442 DP relay on 220 kV Charkhi Dadri-Mohindergarh Circuit-2 at 220 kV S/Stn, Charkhi Dadri.

viii) Overhauling of Breakers

- Overhauling of 4 No. 66 kV SF-6 Breakers (ABB make) of 220/66 kV, 100 MVA T/F T-1 & T-2, 66 kV Millerganj Ckt-2 & Bus coupler have been carried at 220 kV S/Stn, Jamalpur.

ix) Deposit Works

- Work for erection of new towers nos. 327-A & 328 of 220 kV Panipat-Charkhi dadri line has been completed in connection with electrification and doubling of existing railway line (Deposit work of Railways)
- Work for shifting of tower no. 331, 332 & 333 of 400 kV Dehar-Panchkula line in connection with four lanning of Panchkula-Jagadhari-National-Highway (Deposit work of NHAI).
- Providing anti-collision lights, span marker and painting of 19 no. towers completed as deposit work of Civil Aviation Department, Govt. of Haryana near Pinjore Aerodrome.
- Work for shifting of tower no. 8 & 9 of 400 kV Dehar-Rajpura line (Deposit work of ACC Ltd.). It involves dismantlment of 2 nos. towers & erection of 3 nos. new towers in a trencherous hilly terrain (work under progress).
- Providing adequate clearance from Ropar – Nawanshar- Phagwara Road (NH-344A) with erection of 1 No. New Tower between tower No. 69-70 of 220 kV Jalandhar-Jamalpur D/C under O&M Divn. Jalandhar. (Self execution work of NHAI)
- Modification for Tower No. 541-542 of 220 kV Ballabgarh-Samaypur-Charkhi Dadri on NPR express way Right-of-Way by NHAI (Self Deposit work).
- Modification for clearance between Tower No. 560-561 on 220 kV Ballabgarh-Samaypur-Charkhi Dadri circuit by M/s Sun Infrastate Pvt. Ltd. (Self deposit work).

x) Civil Works

- The civil work for Re-laying of gravel on PCC in 132 kV yard at 400 kV S/Stn, Panipat has been completed.
- The work for major repair of residential buildings at 400 kV S/Stn, Panipat has been completed.

- Replacement of old and damaged children playing jhullas at 220 kV S/Stn, Kurukshetra.
- Replacement of Barbed wire of boundary wall at Jagadhari.
- Replacement of existing doors and windows with aluminum doors and windows of Subordinate rest house at 220 kV S/Stn, Barnala.

xi) Miscellaneous Works

- 19 Nos. strings of conventional/ anti fog disc insulators of 220 kV yard at 400 kV S/Stn, panipat has been replaced with polymer insulators.
- Old 69 Nos. conventional disc insulators in 220 kV yard at 220 kV S/Stn, Delhi has been replaced with polymer insulators.
- Old DCDB has been replaced with new DCDB at 220 kV S/Stn, Delhi.
- Installation testing and commissioning of new Panacea Alloy Pvt. Ltd. make 220 V, DC 300 AH battery bank-2 at 220 kV S/Stn, Delhi.
- Installation testing and commissioning of new Panacea Alloy Pvt. Ltd. make 220 V, DC 300 AH battery bank-2 at 220 kV S/Stn, Narela.
- Installation testing and commissioning of new Chabbi Electrical Pvt. Ltd. make Float and Float-cum-Boost battery charger at 220 kV S/Stn, Kurukshetra.
- Installation testing and commissioning of new Panacea Alloy Pvt. Ltd. make 220 V, DC 300 AH battery bank-2 at 220 kV S/Stn, Kurukshetra.
- Replacement of existing firefighting equipment with new firefighting equipment's at 220 kV S/Stn, Kurukshetra.
- Replacement of old danger plates, phase plates and circuit plates of 220 kV DKT-PNP Double Circuit line carried out.
- Installation of Air conditioning system in SLDC complex at 66 kV S/Stn, Chandigarh.
- Providing standby 220V, 300 AH, DC Battery & 220V, 30-45A Battery charger at 220 kV S/Stn, Sangrur.
- Providing standby 220V, 450 AH, DC Battery bank & 220V, 30-60A Battery charger at 220V S/Stn, Jamalpur.
- Providing standby 220 V, 300AH DC Battery & 220V, 30-45A Battery charger at 220V S/Stn, Dhulkote.
- Providing standby 220 V, 450 AH, DC Battery Bank at 220V S/Stn, Jalandhar.
- Replacement of existing 220V, 300 AH DC Battery set with a new (Pannacca alloys Pvt. Ltd. Make) battery at 220V S/Stn, Barnala.
- Providing standby 220V, 300 AH, DC Battery bank & 220V, 30-45 A Battery charger at 220V S/Stn, Jagadhari.
- Old DCDB panel (Hanson make) has been replaced with new DCDB panel (Telmos make) at 220V S/Stn, Jamalpur.
- Providing standby 220V, 300 AH, DC Battery bank & 220V, 30-45 A Battery charger at 220V at 220V S/Stn, Barnala.
- Old DC Distribution Board (Hind Rectifiers Ltd. make) has been replaced with new DC Distribution Board (Hind Rectifier's Ltd. make) at 220V S/Stn, Jagadhari.
- 1 No. Panasonic make 220 V DC-II Second Battery Set commissioned at 220 kV S/Stn, Charkhi Dadri.
- 1 No. Chhabi make Float-cum-Boost Battery Charger commissioned at 220 kV S/Stn, Charkhi Dadri.
- Existing EXPCFYM make old & used Float and Float cum Boost Battery charger replaced with Chhabi make Float cum Boost Battery Charger at 220 kV S/Stn, Charkhi Dadri.

- 1 No. Battery Charger replaced at 220kV S/Stn, Ballabgarh.
- 1 No. Battery Bank replaced with 300 AH at 220kV S/Stn, Ballabgarh.
- 1 No. Battery Bank replaced with 350 AH at 220kV S/Stn, Samaypur.

xiii) Protection and Testing

- Testing of Inter Trip of 220 kV Hisar-IA Ckt-I & II at 220 kV S/Stn, Hisar.
- Testing of 220 kV Dadri-Khetri Circuit-II of MICOM-442 distance protection relay at 220 kV S/Stn, Charkhi Dadri.
- Testing & Commissioning of damaged SIEMENS make relay of 220/66 kV, 100 MVA T/F T-1 at 220 kV S/Stn, Ballabgarh.

6.2 Irrigation Wing

6.2.1 Bhakra Nangal Project

A Bhakra Dam

- Observation of data from various instruments / devices, installed inside & outside of the body of Bhakra Dam and sent the same to o/o Design Directorate, BBMB, Nangal Township for processing and analyzing the same.
- The geodetic survey work of Bhakra Dam was carried out during the year by taking précising to work observation, traverse observation and allied precise double leveling with on the points fixed on both upstream and downstream side of the dam
- The lawn spreading, maintenance of plantation remained in progress both on left sides and right sides abutment Bhakra Dam during the year under horticulture sub division.
- Construction of Lavatory block for workers at carpentry shop, Timber Ropeway, Euclid shop and Gwalthai Barrier at Bhakra has been completed.
- Construction of staff room in Fire Stations at Olinda has been completed.
- Construction of Boundary wall around Police Barracks and residence Accommodation of CID Inspector at Colony Bhakra Dam has been completed.
- Construction of Pucca Morcha adjacent to check post for security Personnel's at various Locations in Bhakra Dam Area has been completed.
- 02 nos. Fire stations remained functional during the year, one at Olinda (Bhakra) & second one at Nangal for the fire safety of the projects and allied works.

B Nangal Dam Division

Inspection of Nangal Dam, NHC and its allied works were carried out from time to time and following repair and maintenance works are carried out during the period from April 2019 to March 2020 is as under:-

- To assess the condition of U/S and D/S pucca floor of Nangal Dam, sounding in the area has been submitted to Director Design, BBMB Nangal for observation. However the result of the previous year shows that the condition of the bed is satisfactory.
- Patch work bituminous macadam 50 to 75mm thickness on Nangal Dam Bridge has been completed.
- Replacing of 2 Nos. old sign Boards sheet with reflected sheet of high intensity micro prismatic grade at different locations at Nangal has been completed.
- Providing and fixing sign board with retro reflective high intensity micro prismatic

sheeting at various location of NHC and downstream Nangal Dam has been completed.

- RCC slab laid on super passage at RD-53920 near village Bilapur in replacement of damaged slab has been completed.
- Finishing wall with acrylic smooth exterior paint of Ganguwal rest house has been completed.
- Providing snowcem in inspection gallery and other miscellaneous structure at Nangal Dam has been completed.
- Cleaning/clearing polythene bags/wastage of material from RD-1550 to RD-10000 both sides of NHC has been completed.
- Construction of retaining wall to check sloughing & hill slope left side of Ganguwal has been completed.
- Providing cement concrete pavement on the damaged path toward Kotla Sub Division, Kotla office and M&M type quarter has been completed.
- Filling cement bags with sand, sewing and stacking along NHC in Kotla Sub Division, Nangal Dam Sub Division and repair & aluminum painting on barbed wire, angle-iron, concrete post of railing around Power House spillway at Kotla has been completed.
- Arresting leakage of 14 No. joints of Sirsa aqueduct expansion joints over piers using polythane foam and hydro structure resin injection techniques has been completed.
- Restoration of drainage system of left side bank of NHC from RD-194200 to RD-200337 of HNC in Roper Section has been completed.
- Providing safety wall/ barrier at different locations of NHC banks, bridge, cross drainage works on Nangal Hydel Channel is has been completed.
- The Construction of retaining wall to check sloughing of hill slope outside drainage system in between RD-147000 to RD-149500 right side of Nangal Hydel Channel is has been completed.
- Repair to lining panels of cross drainage structures and bridges has been made during partial closure has been completed.
- The work of restoration of drainage system of right side bank of NHC from RD-150250 to RD-158200 of NHC in Ghanauli Section was started during the month of 2020 but have to be suspended due to outbreak of COVID-19.
- The work of repainting of letters and figures on sign boards right side of NHC and painting of sign boards got completed.

C. Bhakra Spillway (Inspection/Repair by Pneumatic Caisson method)

The work of Bhakra Spillway repair has been in progress since 1983 with the help of pneumatic caisson method. After monsoon, the assembling of sinking set and caisson units and other floating equipment's in use for Bhakra Spillway repair by Pneumatic was started in Mid oct-2019. The assembling of sinking set and floating equipment was started on 16-11-2019 .The work of assembling could not be started as per schedule due to shortage due to shortage of manpower. Only Pontoons were lowered in spillway. Further assembly work remained suspended due to shortage of manpower, The assembly work was re-started on 09.03.2020 by making arrangement of manpower from other divisions on job order basis. Further work suffered due to lockdown in India on 24.03.2020.

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.

D. Nangal Workshop

Nangal Workshop is one unit of many small shop and was primarily set up for structure for the construction of mighty Bhakra Dam is 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 projects of BBMB. However its little capacity is being utilized for under taking the various Structure jobs of different electricity board and Govt. organizations.

Some of the Miscellaneous works executed at Nangal Workshop are as under:-

- Fabrication of M.S. Chowkhats, M.S Gates Tree Guards, M.S Railing, Brackets of wash Basin, wooden Chairs, M.S. Angles Brass Spindles & Dust Bins etc. etc. for Addl. S.E. B.C. & Township Division Nangal.
- Fabrication of M.S. angle, Roller pin locking plates Bolt Tree Guard Wooden Chair Steel Almirah rubber seal bush nut plumber block table brackets etc. for Addl. S.E. Nangal Dam Division, Nangal Township.
- Fabrication of M.S Flange shedders nut and bolts M.S Pipes riling brake block rubber seals treasured anchoring anchor plates fish plats pipe railing shaft sleeves studs' brackets M.s frames wooden chairs etc. Addl. S.E. Bhakra Mech. Division, Nangal Township.
- Fabrication of Tree Guard, Wooden Chair, Barricades Steel Almirah, M .S. Frame etc. for Addl. Superintending Engineer, Bhakra Dam Division Nangal.
- Mfg. of Wooden Chair, M.S Clamps. Brass Nuts, M.S Nuts. PIN, M.S Rod etc. Addl. S.E. Bhakra Electrical Division, Nangal Township.
- Mfg. M.S Clamps, Washer Frame, Hooks, Brass Nut, Wooden chair, Steel Almirah, etc. for Addl. Superintending Engineer, Electrical Division, Nangal Township.
- Mfg. Wooden Chair, Steel Almirah Tilting Dustbin etc. for Addl. S.E. Hydrology Division, Nangal.
- Mfg. of Wooden Chair, Steel Almirah etc. for P.M.O. BBMB Hospital, Nangal Township.
- Mfg. of Steel Almirah Bush, Rubber Seal etc. for Addl. S.E. R.M. & S.R. Division Nangal Township.
- Mfg. of Wooden Chair, Steel Almirah, Weight Bridge etc. for Addl. S.E. Proc: C/Stores & Disposal Division, Nangal.
- Mfg. of Wooden Chair, Incumbency Board etc. for Sr. Personal Officer, Nangal Township.
- Mfg. of Wooden Chairs, Steel Almirah Etc. for Dy. C.E. Bhakra Dam Superintending Engineer/head Quarter Nangal Township.
- Mfg. of Wooden Chair, Table Steel Almirah etc. for Dy. C.E. Nangal Mechanical Circle, Nangal.
- Mfg. of Wooden Chair, Steel Almirah etc. for Addl. S.E. Civil Mtc. Division, BBMB, Chandigarh.
- Mfg. of Dustbin Steel Almirah M.S. Gate, Titling Dust Din etc. for Resident Engineer, Bhakra Power House.

- Mfg. of Nuts & Bolt, Steel Plates, Shaft, Shear Pin, M.S Plates, Gun Metal Seat, M.S Angle, Gland Plates, Tower Wit Channel etc for Addl. SE STP & D Division, BBMB, Power Wing Nangal.
- Mfg. of Wheel, Shaft, Brass, Nut, Bolt, Rubber Seat, Bush, Shaft Assembly, Wooden Chair etc. for Addl. S.E. O&M Division, Power Wing, Ganguwal.
- Mfg. of M.S Garbage Container etc. for Addl. Superintending Engineer, Civil Mtc. Division, BBMB Power Wing.
- Mfg. of Wooden Chair etc. for Resident Engineer, Ganguwal Kotla, Power House.
- Mfg. of M.S Ladder etc. for Addl. S.E. O&M Division, BBMB, Power Wing, Panipat.
- Mfg. of M.S. Ladder etc. for Addl. S.E. O & M Division BBMB Power Wing Kurukshetra.
- Mfg. of Guide Vanes, Grease Adopter, Drilling Plate, Brass Seal, Repair Guide vanes, Bush Housing of Guide vanes etc. for Resident Engineer, Dehar Power House, Slappar.
- Mfg. of Garbage Container, Impellor, Shaft Steel Chowkhats, M.S Grill Coupling etc. Addl. S.E. Township Division, Talwara.
- Mfg. of Mobile Barricades Sign Boards for Addl. S.E. RM& SR Division BBMB Talwara.
- Mfg. of Rubber Seal G.M. Rod etc. Addl. Mechanical Division, BBMB Talwara.
- Mfg. of Meter Box Addl. S.E. Electrical Division, BBMB, Talwara.
- Mfg. Pantoon, Garbage Container, Pulley, Rubber Seal, Pipe Rubber impellor etc. Addl. S.E. Electrical and Work Shop Division, BBMB Sundernagar.
- Mfg. of M.S. Clamps Rubber seals. Etc. Addl. S.E. B.R.S.C. and P.O. Division, BBMB Sunder Nagar.
- Mfg. of MS Clamps, Bolt, Nut, Coupling, Shaft, Bush Rod etc. Addl. S.E. Electrical and Work Shop Division, BBMB Pandoh.
- Mfg. of M.S. Clamps, Nut and Bolt etc. Addl. S.E. Electrical and Mechanical Division, BBMB Pandoh.

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.

6.2.2 Beas Project

6.2.2.1 Beas Project Unit-I (BSL)

- A. Monitoring of the behavior of Pandoh Dam, various components of BSL Project and Dehar Power Plant, with the help of data observed on various instruments /devices was done and it was found that structure behavior of these works has functioned quite satisfactory during the period under report.

B. 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 August, 2016 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.

C. Repair of Pandoh Spillway

After the flood season of 2018 the repairs of Pandoh Spillway were carried out and an area of 1480.37 sqm. was repaired as per practice in vogue.

D. Flushing of PBT Intake Pocket and Reservoir

In order to prevent the entry of bed material and to minimize the ingress of silt into PBT, one number flushing operation of PBT intake pocket was carried out from 18.08.2019 to 19.08.2019 in which 702.18 Hect.m of silt removed from Pandoh Reservoir.

E. Silt observation in the Balancing Reservoir

During the period July, 2019 to September, 2019, the three dredgers have removed 93.87 Hect.m of silt from balancing reservoir. As per latest silt survey carried out, the balance silt deposit at the end of period was of the order of 96.64 Hect.m.

F. 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.

G. Penstock Headers & Branches

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

6.2.2.2 Beas Project Unit-II (Pong Dam)

A Monitoring of the behaviour 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.

B Crustal Deformation along the periphery of Pong Reservoir.

Observations of bench mark elevation fixed along the periphery on left and right sides of reservoir upto 15 kms, were taken by field staff during October/November, 2018 at maximum RWL and at minimum RWL during May / June, 2019. The maximum vertical deformation observed is 8.0 mm on left side of reservoir at bench mark no.60 for average. Max. R.W.L 524.937 m (1722.21 ft.) and average Min. R.W.L. 524.929 m (1722.19 ft.).

C Sedimentation of Pong Reservoir.

Sediment survey of Pong reservoir carried out during 2017-2018 has revealed that average annual rate of siltation from year 1974 to 2018 (44 years) works out to 24.29Mm³ (19695Ac.ft) against the design figure of 25.29 Mm³ (20500 Ac.ft.). The average silt yield/annum/ sq.mile of catchment area (1974 to 2018) works out to 5007.93 m³ (4.06 Ac.ft). The average trap efficiency during 1975-76 to 2017-18 is about 97.41%. The percentage of total sediment deposited is 26.42 in dead and 73.58 in live storage of the reservoir.

6.2.3 Achievements of Dam Safety Directorate in Last Three Years

Safety of the dams is a very important aspect which has to be given priority on a continuous basis for safeguarding the national investment and the benefits derived by the nation from these projects. Keeping in view the importance of safety aspect of three major hydro-electric projects namely Bhakra Nangal Project, Beas Dam and Beas Satluj Link Project, BBMB established Dam Safety Directorate for periodic safety evaluation of above projects through comprehensive dam safety inspection program and application of best management practices to ensure the use of the best current technology in order to safely maintain existing dams.

The achievements of Dam Safety Directorate in last three years are briefed as follows:

1. Dam Safety Committee Inspections: For exercising an independent check on the operation and maintenance of various installations and safety of all dams, power houses, canals and other appurtenant structures under the BBMB complex, the 5th Dam Safety Committee (DSC) was constituted by the Chairman, BBMB vide office order dated 27.10.2017. The DSC inspected all the projects under BBMB and Dam Safety inspections Reports are published after approval of the Board as scheduled below:

S. No	DSC Inspection of Dams	Inspection Dates	Inspection Reports published
1	Bhakra Dam, Bhakra Power Houses and related works	01.11.2017 to 04.11.2017	DSO 18 in July 2018
2	Nangal dam, Nangal Hydrel Channel, Canal Power Houses and related works	19.12.2017 to 22.12.2017	DSO 19 in September 2018
3	Beas Dam, Pong Power Plant and related	21.02.2018 to 24.02.2018	DSO 20 in September 2018
4	BSL Project and related works Phase I Phase II	28.05.2018 to 01.06.2018 14.11.2018 to 17.11.2018	DSO 21 in June 2019

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, ECG, physiotherapy, ultrasound and other facilities like blood transfusion are being provided. Revised National T.B. Control Programme (RNTCP), Immunization Programme, etc. are also being run. In 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 2019-20, 6073 persons visited Pong Dam and 4,90,582 Lac at Bhakra Dam.

6.3 National Hydrology Project

Bhakra Beas Management Board (BBMB) has 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. BBMB has the 'first mover' in the country under the World Bank funded Hydrology Phase-II project.

Under this project, 93 no. Real Time Data Acquisition stations comprising Automatic Rain Gauge Stations, Automatic Full Climate Stations, Snow Water Equivalent, Water Level Recorders etc. including 6 nos. co-operator stations of IMD 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. The schematic arrangement of Real Time Decision Support System involves real time transmission of Hydro meteorological data through INSAT-3D at 1 hour interval to Earth Receiving Station at Chandigarh.

Real Time Data is processed using Rainfall Runoff Model, Hydro Dynamic Model, Flood Model and Water Allocation of MIKE software. The outcome/ scenario generation is further shared on NHP Dashboard accessible to all.

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

The Annual Work Plan 2020-21 under NHP have already been approved

by MoWR, Govt. of India.

6.4 Information Technology:

Issues handled are as under:-

1. **Implementation of e-Office in BBMB.**

e-Office, a Mission Mode Project under the National e-Governance Programme (NeGP) of GoI has been implemented at Boards Office & Chief Engineers Offices. Training to all the users was provided along with hands on training on the use of the system. It is now proposed to extend the same to all divisions/Offices of BBMB.

2. **MIS for Legal cases**

Web based **Software** for managing all the legal cases for Legal cases for all divisions of BBMB (instituted in any court of India) has been developed and implemented. The data updation is done by various divisional users in the system and reports generated.

3. **BBMB's Website has been awarded STQC Certificate by STQC Directorate, Ministry of Electronics and Information Technology, GoI.**

The BBMB website was developed complying to Guidelines for Indian Government Websites (GIGW). These guidelines inter-alia, ensures that, the websites are accessible to citizens/persons with disability. The website of BBMB available at URL <https://bbmb.gov.in> has been awarded Standard Testing and Quality Certificate by STQC Directorate, Ministry of Electronics and Information Technology, GoI during Nov/Dec 2019.

4. **Visitor Pass Management System**

A web based module has been developed to generate the visitor pass and keep the record of the BBMB DAM visitors. The software has been successfully implemented at Bhakra Dam, Nangal, Beas Dam, Talwara and at BSL, Sundernagar.

5. **Implemented procurement from GeM**

The procurement activities of all divisions has been implemented from GeM. The training sessions for the same were got conducted at four locations in BBMB.

6. **Cyber Security Audit (VAPT-Vulnerability Assessment & Penetration Testing)**

Cyber Security Audit (VAPT-Vulnerability Assessment & Penetration Testing) of BBMB Datacenter & LAN/WAN System and revisions/enhancements in BBMB's existing ISMS Policies & Procedures, Manuals, Documents etc has been got completed from CERT-In empaneled auditor.

7. **Cyber Security Awareness/Training Programs**

The Cyber Security training on 'General Awareness on IT Security' & 'IT Security Policy & Procedures' for BBMB users in various offices at Chandigarh, Nangal, Sundernagar, Talwara, Panipat & Jamalpur has been conducted.

8. **e-Reverse Auction Implemented**

e-reverse auction (e-RA) has been implemented for all tenders with threshold value of one crore which has been subsequently reduced to threshold value

of Rs. 30 lakhs.

9. **e-Tendering / e-procurement extended to all cases above Rs 2 Lakhs**
All the tenders by various offices of BBMB above a threshold value of Rs.2.00 Lacs are invited through e-procurement/e-tendering system as compared to previous value of Rs. 10.00 lakhs.



अध्याय-7 Chapter-7

जल-शक्ति अध्ययन Water Power Study

Actual Water Power Data for the operation of Bhakra Reservoir for the period 1.4.2019 to 31.3.2020

Month	Period	Inflows (Cs days)					Gains or Losses between Nangal & Ropar (Cs days)	Delhi Jal Board (Cs days)	W.J.C Contribution (Cs days)	Releases from Bhakra Reservoir (Cs days)	Closing reservoir level (ft)	Av.power from Bhakra Power Houses		Av.power from Gwl. & Kotla Power Houses		Total Power available from Bhakra Complex		Gen. from Dehar Power Plant in LU
		Satluj	Dehar Power Plant	Bye Pass Chute	Total Col. (4+5)	Total Col. (3+6)						MW	LU	MW	LU	MW	LU	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Starting reservoir level on 31.03.2019 = 1550.10 ft																		
April 2019	01-10	7986	7072	-	7072	15058	-300	496	0	13406	1617	103	25	34	8	138	33	133
	11-20	9196	7059	-	7059	16255	-300	496	0	8115	1623	61	15	23	5	84	20	133
	21-30	11806	7689	-	7689	19495	-300	248	0	17368	1624	130	31	28	7	158	38	142
May	01-10	10987	7133	-	7133	18120	-600	496	0	22068	1621	168	40	34	8	203	49	130
	11-20	12460	7055	-	7055	19515	-600	496	0	26830	1616	204	49	35	8	239	57	125
	21-31	14129	7018	-	7018	21147	-600	496	0	25325	1613	192	46	35	8	227	55	127
June	01-10	21236	8481	-	8481	29717	-600	496	0	33518	1610	251	60	35	9	287	69	150
	11-20	20842	8510	-	8510	29352	-600	496	0	34992	1606	261	63	35	8	296	71	149
	21-30	22036	8115	-	8115	30151	-600	496	0	32462	1605	242	58	35	8	277	67	143
July	01-10	38415	8460	-	8460	46875	1000	125	103	34216	1614	256	61	35	8	291	70	147
	11-20	40946	8451	-	8451	49397	1000	125	0	26338	1629	204	49	35	8	239	57	144
	21-31	39405	8429	-	8429	47834	1000	125	1373	19683	1648	161	39	35	9	196	47	143
Aug.	01-10	53621	8466	-	8466	62087	1000	125	0	28448	1666	233	56	35	8	268	64	142
	11-20	64151	6863	-	6863	71014	1000	125	0	42104	1681	283	68	35	8	319	76	115
	21-31	35700	8359	-	8359	44060	1000	125	0	52913	1676	302	72	35	9	337	81	141
Sept.	01-10	31850	8473	-	8473	40323	0	125	0	41684	1675	300	72	36	9	335	80	143
	11-20	21721	8402	-	8402	30123	0	125	0	29423	1676	251	60	35	9	286	69	140
	21-30	14881	7740	-	7740	22621	0	125	58	25946	1674	225	54	35	9	260	63	132
Oct.	01-10	10881	5115	-	5115	15996	0	496	0	19885	1672	177	42	35	9	212	51	95
	11-20	7980	3478	-	3478	11458	0	496	0	16670	1669	145	35	32	8	177	43	67
	21-31	6850	2924	-	2924	9774	0	496	0	16987	1665	146	35	32	8	178	43	56
Nov.	01-10	6118	2678	-	2678	8796	0	496	0	18052	1660	154	37	35	9	189	45	50
	11-20	6095	2477	-	2477	8572	0	496	0	12633	1658	103	25	35	8	138	33	46
	21-30	5767	2294	6	2294	8061	0	496	0	11608	1656	93	22	31	7	124	30	43
Dec.	01-10	5246	2056	-	2056	7302	100	496	0	12918	1653	105	25	31	7	136	33	39
	11-20	5645	2146	-	2146	7791	100	496	0	13977	1649	111	27	35	8	146	35	41
	21-31	4849	1810	-	1810	6659	100	496	0	14682	1644	116	28	36	9	151	36	34
Jan. 2020	01-10	4838	1864	-	1864	6702	200	496	0	13208	1641	102	25	32	8	134	32	36
	11-20	5265	2235	-	2235	7500	200	496	0	11961	1638	94	23	30	7	124	30	43
	21-31	5185	1913	-	1913	7098	200	496	0	15665	1632	125	30	32	8	157	38	37
Feb.	01-10	4664	1774	-	1774	6438	400	496	0	18234	1625	143	34	36	9	180	43	33
	11-20	5093	2076	-	2076	7169	400	496	0	19911	1616	154	37	35	8	189	45	38
	21-28	5022	1980	-	1980	7002	400	496	0	18298	1609	140	34	36	9	176	42	43
Mar.	01-10	4699	2152	-	2152	6851	200	496	0	13591	1604	102	24	34	8	136	33	41
	11-20	7687	2815	-	2815	10502	200	496	0	11143	1604	81	20	28	7	110	26	55
	21-31	6529	3523	-	3523	10052	200	496	0	15080	1600	112	27	35	9	147	35	69

Actual the Operation of Pong Reservoir for the period 01.04.2019 to 31.03.2020

Months	Period	Inflows at Pong (cs)	Gains or Losses between Pong & Mandi Plain(cs)	Net diversion Ravi to Beas (cs)	Releases from Pong Reservoir (cs)	Closing Reservoir level (ft)	Generation from Pong	
							MW	LU
1.	2.	3.	4.	5.	6.	7.	8.	9
Starting Reservoir level on 31.03.2019 = 1339.70 ft.								
April 2019	01-10	4551	-	4369	1101	1341	21	5
	11-20	4376	-	2847	918	1343	17	4
	21-30	3926	-	4877	5867	1342	108	26
May	01-10	3900	-500	10045	7915	1340	144	35
	11-20	3067	-500	9456	6128	1339	112	27
	21-31	4269	-500	10256	10023	1336	179	43
June	01-10	3563	-500	10158	8216	1333	146	35
	11-20	3941	-500	7936	8007	1332	142	34
	21-30	5184	-500	5145	12110	1328	210	50
July	01-10	11324	1125	4029	11816	1328	203	49
	11-20	15570	1125	3815	7481	1332	130	31
	21-31	27104	1125	4858	9780	1341	173	42
Aug.	01-10	36595	1125	4829	7864	1354	147	35
	11-20	67904	1125	4056	8080	1377	157	38
	21-31	30095	1125	296	10006	1385	211	51
Sept.	01-10	22638	1125	2340	11650	1388	249	60
	11-20	10522	1125	3173	16164	1387	259	62
	21-30	8667	1125	3283	11089	1386	234	56
Oct.	01-10	8156	750	2237	10489	1385	222	53
	11-20	4595	750	2057	9025	1383	191	46
	21-31	2893	750	2714	7297	1382	154	37
Nov.	01-10	2473	375	3368	6992	1380	147	35
	11-20	2661	375	3570	9995	1378	208	50
	21-30	2720	375	3226	9565	1375	198	47
Dec.	01-10	2536	375	3340	10065	1372	206	49
	11-20	4596	375	4516	6375	1372	130	31
	21-31	2431	375	4130	8074	1369	163	39
Jan. 2020	01-10	3114	375	6723	7287	1368	146	35
	11-20	4385	375	5633	6614	1367	133	32
	21-31	3110	375	6403	5324	1366	107	26
Feb.	01-10	2894	375	6868	4553	1365	91	22
	11-20	2760	375	6550	7996	1363	158	38
	21-28	3147	375	7890	9482	1361	186	45
March	01-10	3599	375	0	9564	1359	186	45
	11-20	10125	375	0	8866	1359	172	41
	21-31	7178	375	0	7416	1359	144	34



अध्याय-8 Chapter-8

पुरस्कार एवं सम्मान Honours and Awards

8. The Awards won by BBMB during the year 2019-20 upto 31.03.2020:

1. Hindi Awards:

- BBMB has been conferred with the highest honor of Official Language “Kirti Award” for best implementation of the Official Language Policy. The award was conferred by Shri Amit Shah, Hon'ble Home Minister, Government of India at the award distribution ceremony held on 14th September, 2019 at Vigyan Bhawan, New Delhi on the occasion of Hindi Divas.

2. Professional Awards:

- Independent Power Producers Association of India, New Delhi has given BBMB Best Hydro Power Plant award for category of Plants having capacity more than 25 MW during 8th Power Awards Ceremony held on 7th December, 2019 at Goa.
- Keeping in view outstanding maintenance and operation of the Bhakra Power Houses and their service to the nation, Central Board of Irrigation and Power, based on recommendations of the high level jury, have awarded the most prestigious National Level Award of “Best Maintained Hydroelectric Power Houses (Functional Project-age more than 50 years)’ to Bhakra Power Houses.

3. Energy Conservation Award:

- BBMB has been awarded as best State Nodal Organisation attracting maximum participation at School Level Painting Competition on Energy Conservation-2019 for the State of Punjab by Shri.R.K.Singh, Hon'ble Minister of State (IC) (Power, New & Renewable Energy) & Minister of State (Skill Development and Entrepreneurship) at Vigyan Bhavan, New Delhi on 14th December, 2019.

4. Sports Awards:

- BBMB Chess Team (Men) won 1st position and Chess Team (Women) won 2nd position at Inter CPSU Chess tournament held at Bangalore from 25th to 27th September, 2019. BBMB player Ms. Swati Agnihotri also bagged 2nd position in the individual event.
- BBMB has maintained its winning streak in Inter CPSU Volleyball Tournament by lifting the trophy 23rd time consecutively in the 24th Inter CPSU Volleyball Tournament held at Nangal from 4th December to 6th December, 2019.
- BBMB team won Silver Medal in Inter CPSU Badminton Tournament held at Delhi from 14th December to 18th December, 2019.
- BBMB was runner up in Inter CPSU Cricket Tournament organized by Power Finance Corporation held at Jaipur from 18th to 23rd January, 2020.
- BBMB team won Silver Medal in Inter CPSU Table Tennis Tournament held at Rishikesh from 25th to 28th February, 2020.

5. School Awards:

- BBMB Govt. BSL Senior Secondary School, Slapper has won 7 Gold, 6 Silver and 1 Bronze Medal in Hubs of Learning competition of CBSE held on 07.12.2019 at Chail Public School, District Mandi, BBMB School was also declared overall champion for this competition. Further, this school of BBMB was also assigned role of “lead collaborator school”, which itself is very prestigious assignment.



अध्याय-9 Chapter-9

पर्यावरण प्रबन्धन 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 (CAD) Plan.

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 mitigative measures at all project stations.

9.2 Socio-Economic 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 Wetlands 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 “**Impact of Bhakra-Nangal Project**”. 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

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

- A study of EIA for Beas Satluj Link Project of BBMB was got conducted in 1999 from NEERI, Nagpur for proper silt management from Sundernagar balancing reservoir & as per their recommendations, the silt is being removed during Monsoon only to avoid environmental degradation.
- Final report of the Expert Committee has been submitted to Hon'ble Himachal Pradesh High Court, Shimla with the conclusion that dredging will be carried out only during monsoon for management of silt at BSL Project. After the decision of Hon'ble H.P. High Court Shimla, matter was placed before the Board in its 211th meeting and as per approval of the Board, SLP has been filed in the Hon'ble Supreme Court of India. Hon'ble Supreme Court of India vide order dated 14.12.2012 has directed the H.P. Pollution Control Board not to take any coercive steps in terms of judgment of Hon'ble High Court. Thereafter the matter was listed for 21.1.2013. Hon'ble Supreme Court has granted leave in the matter and has also directed interim protection granted vide order dated 14.12.2012 to continue.
- 3 no. dredgers deployed to ensure flexible and reliable dredging capability during the monsoon season for dredging out maximum silt from the Balancing Reservoir.
- Measurement of flow discharge and total suspended solids at various sites in Kansa Khud and river Beas are being observed during monsoon. L-section and Cross-section along Suketi Khud are also being observed for pre-monsoon period and for post monsoon period every year to study the deposit of the silt, if any.
- Catchment Area Treatment (CAT) Plan for BSL project up-stream of Pandoh Dam to Larji Dam for river Beas and its tributaries was got prepared from Himalayan Forest Research Institute, Shimla.
- In Bhakra and Beas catchments a no. of new hydroelectric projects are coming up and CAT plans are to be framed by respective project proponents.

- Other mitigation measures like organized promotion of fish production, one time farm management of silt effected agriculture land, tarring of village roads etc.
- To prepare solid waste management plans for its safe & and scientific disposal around the project areas.
- BBMB is an ISO 14001:2015 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.

9.4 Release Of 15% Minimum Flow From Pandoh Dam

HP Govt., vide notifications dated 16.7.2005 and 9.9.2005, had issued the directions regarding release of minimum flow to the extent of 15% immediately downstream of diversion structures of the existing and upcoming hydel projects in Himachal Pradesh. Pandoh Dam of BBMB being a diversion dam comes under the ambit of this notification. BBMB has been releasing 15% of minimum flow at Pandoh Dam since September, 2005. However, BBMB has also taken up the issue of exemption regarding its applicability to BBMB projects being old projects with HP Govt. and the Ministry of Environment and Forests (MoEF) through Ministry of Power.

9.5 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.. BBMB has fixed the target of planting 6 lakh trees in periphery of reservoirs and adjoining catchment area during the year 2019-20

9.6 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 Children Park. This modern Rock Garden was inaugurated by Chairman, BBMB on 16th August, 2005 in the presence of Padam Shri 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. During the year, BBMB hospitals provided specialized outdoor as well as indoor medical facilities, alongwith ambulance, to the people residing in villages in the vicinity of the projects. Public Health Care and Family Welfare Facilities were also provided. Blood donation camps were organized. Moreover, free medical camps were held to provide ready medical help alongwith medicines, at the doorstep of the villagers. Moreover it is has been decided to make provision @ 2% of the annual Irrigation works budget for carrying out various social welfare activities by BBMB in consultation with respective local authorities/ Deputy Commissioners of the areas for people living in the vicinity of BBMB projects especially in rural areas.



अध्याय-10 Chapter-10

मानव संसाधन विकास Human Resource 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 7 Mandays of training for Executives & 3 Mandays of training for Class- III & IV level was proposed to be accomplished. 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 alongwith 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 2019-20 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 programme. In addition, due to frequent transfers/repatriation of staff from and to their parent departments, it is essential to conduct training programmes on regular basis so as to keep all the newcomers abreast with BBMB work requirements and culture. Moreover, it is endeavoured to include all categories of in-position employees in the training programmes to improve their Technical/ Managerial skills and to equip them with the latest know-how & innovative technologies. Orientation Programmes 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 Programmes/ Seminars/ Conferences/ Workshops

at various Institutes situated at different stations or by organizing Training Programmes for BBMB personnels 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 centre since 2005-06 and every month a training on "DRUM" is being imparted in which Engineers from the Partner States/Utilities also participate. The DRUM training programme has been conducted in BBMB as a self-sustaining "No-Profit No-Loss" basis

10.1.2 Achievements in respect of training during 2018-19 & 2019-20

The achievement in respect of 'Training Mandays covered' in BBMB for training BBMB personnel during 2018-19 & 2019-2020 is as under :-

Training Mandays

		Training Mandays				TOTAL Achievement
		Executives		Non-Executives		
Year	Target of Mandays Fixed	Institutional training	In-house training	Institutional training	In-house training	
2018-2019	16000	2299	2136	811	13113	18359
2019-2020	16000	1536	2095	676	11809	16116

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 01.01.2020 is as under:-

Group	Total existing BBMB own recruited employees	Scheduled caste	Percentage
A	65	17	26.15%
B	444	92	20.72%
C	2181	658	30.16%
D	2333	676	28.97%
Total	5023	1443	28.72%

For providing general welfare measures for SC employees, instructions have been issued to all field offices requesting them to provide the following facilities, if so demanded by the members of SC, on the occasion of birthday of Dr.B.R.Ambedkar, Maharishi Balmiki Ji and Sri Guru Ravi Dass Ji:-

- i) Bus facilities for Shobha Yatra at token charges of Re.1/- per km.
- ii) Auditorium for function on above occasions, free of charge.

Instructions have also been issued to all Head of Departments in BBMB that the heads of organization and senior officers should frequently meet their SC/ST officers/staff, particularly on occasions like Dr.B.R.Ambedkar Jayanti, Maharishi Balmiki Ji Jayanti, etc.

In addition to above, BBMB has given representations to the members of the Scheduled Castes by nominating one SC member of the rank of Addl.SE/Senior Executive Engineer in all Selection Committees.

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 Organisation

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

The Vigilance Organisation in BBMB is making earnest efforts to inculcate 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, 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 2019-20 (01/04/2019 to 31/03/2020), 22 complaints were received. 22 Nos. complaints have been disposed off.

Besides above, ***Vigilance Awareness Week – 2019*** was observed w.e.f. 28.10.2019 to 02.11.2019 in BBMB offices at Chandigarh as well as at Project Stations. An interactive session on “***Integrity A way of life –***” was also conducted at Chandigarh, Nangal, Talwara, Sundernagar, Panipat and Bhiwani during the ***Vigilance Awareness Week***.

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. Panjab, Haryana, Rajasthan and Himachal Pradesh. Out of this, 60% staff is from the Panjab state/PSEB, whose mother tongue is Panjabi and they perform all the official work either in Panjabi or in English only. Under

these circumstances, it had been very 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 the Board, however, Due to commitment of higher officers and under there expert guidance, use of Hindi in the official work of the Board started gradually.

The Department of Official Language issues an Annual Programme every year in order to promote the progressive use of the official language Hindi. All out efforts are made by the Board to achieve the targets fixed in the Annual Programme and the details of the progress achieved by the Board as compared to the targets are given hereunder:

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 2019-20 are given below:

	Documents issued under Section 3(3)	Documents issued in English only
Board Secretariat	158	Nil
Board as a whole	3184	Nil

Reply of the letters received in Hindi:

All the letters received in Hindi are invariably replied in Hindi by the Borad secretariate and its sub-ordinate offices. Status of the reply in respect of the letters received in Hindi during the year 2019-20 is given below:

	Total Letters Received in Hindi	Reply in Hindi	Reply in English
Board Secretariat	14313	10375	Nil
Board as a whole	485977	395433	Nil

Note : Remaining letters filed.

Correspondence in Hindi:

Number of letters sent in Hindi by the Board Secretariate and it's 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. 99.7% letter in the Board Secretariate and 96.5% in the Board as a whole had been sent in Hindi during the year 2019-20. The details are given below:

	Total letters	Sent In Hindi	Sent in English
Board Secretariate	37368	37258	110
Board as a whole	730419	705209	25210

Noting in Hindi:

Almost 92.5% notings are written in Hindi.

Dictation in Hindi:

75% dictation by the officers are 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 Secretariate & subordinate offices during the year 2019-20 is given below:

Total Expenditure on Purchase of Books	Expenditure on Purchase of Hindi Books
Rs. 105450/-	Rs. 87605/- (83%)

Computers:

A total of 540 computers and 16 laptops are available in the Board till date, bilingual (Hindi/English) facility is available on all the computers and laptops.

Website:

Board's website is fully bilingual, 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 Secretariate during the year 2019-20 are as under:

Quarter	Date of the Meeting
April-June	25 June, 2019
July-September	03 October, 2019
October-December	31 December, 2019
January-March	29 May, 2020 (due to lockdown)

Hindi Workshop:

Following Hindi Workshops have been organized in Board Secretariate during the year 2019-20:

Quarter	Date of the Workshop
April-June	29 May, 2019
July-September	30 September, 2019
October-December	31 December, 2019
January-March	20 February, 2020

Hindi Fortnight:

Hindi Fortnight is organized in the Board Secretariate and all the subordinate offices during the month of September every year. During the year 2019-20 Hindi Month was celebrated in the Board Secretariate from 01

September, 2019 to 29 September, 2019. Several programmes were organized during the occasion.

Following Hindi Competitions were organized during the Hindi Fortnight:

1. Hindi Shabd-gyan Pratiyogita,
2. Hindi Tanka Pratiyogita on computer,
3. Hindi Nibandh avam Anuvad Pratiyogita,
4. Hindi Noting and Drafting Pratiyogita, and

Officers and staff have participated in these competitions with great enthusiasm. Officers and staff 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, 27 employees were also honored with cash award for doing maximum work in Hindi.

At the end of Hindi Month a prize distribution ceremony was held on 22nd November, 2019 during which a "Hasya Kavi Sammelan" was organized. Officers and Staff of BBMB offices located in Chandigarh attended the ceremony with great enthusiasm.

Besides, a "Desh Bhakti Geet Gayan Pratiyogita" was also organized by BBMB on 01 August, 2019 under the aegis of Town Official Language Implementation committee, Chandigarh and a large number of personnel from all the Central Government Offices participated in this event.

Bilingual/Hindi Publications:

Following materials/books are published by the Board bilingually/in 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

(i) Implementation of Integrated Management System

For effective implementation of Management System Certifications, BBMB has been divided into 7 centers viz. 6 CE(s) and Board Secretariat. In addition to the earlier acquired QMS:9001 & EMS:14001 with total of 14 Management System Certifications, BBMB in a commitment towards the Safety of its stake holder including its employees, has endeavored to acquire Occupational Health & Safety Management System (OHSMS:18001) for all its 7 Centers & simultaneously implementing Integral Management System (IMS) comprising of EMS, QMS & OHSMS.

BBMB has endeavored to acquire ISO certifications as per standard 2015 for QMS (9001:2015), EMS (18001:2007) under Integrated Management System program. BBMB has already obtained these certifications for Board Secretariat & Chief Engineer / System Operation till date. For other MR's/CE's are actively working on certification Stage-II audits and shall be acquiring the same shortly. Integrated Management policy has got approved from competent authority and is being issued hereof.

(ii) Painting Competition on Energy Conservation

BBMB was nominated as Nodal Agency to implement the Painting Competition on Energy Conservation Scheme 2019 launched by BEE, Ministry of Power, Govt. of India. Painting Competition includes school level, State level and National Level competition. BBMB team organized on the Spot State Level Painting Competition on Energy Conservation 2019 for the Student of Class 4th,5th & 6th of Group-A & Class 7th,8th & 9th of Group-B for the State of Punjab, Haryana & UT Chandigarh followed by Prize Distribution Function in the Tagore Theater, Sector-18, Chandigarh on 14.11.2019.

In the history of organizing Painting competition on Energy Conservation since 2005, BBMB in collaboration with participations of Education Department of State of Haryana, Punjab & UT Chandigarh achieved more than 30.92 lakhs students, which is more than 1/3 of the total participations of around 84.27 lakhs for the year 2019 at School level Painting Competition from all over India. The Haryana Education Department was adjudged as Best Education Department for the year 2019 by MOP. This achievement was unparalleled in the history of BBMB so far.

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. BEE, Ministry of Power has awarded BBMB Nodal officer Er. Balvir Singh Sinhmar, Director HRD with both the National Performance Award in the Category of Best Nodal Officer for achieving highest percentage increase in School and Students participation in Paining Competition on Energy Conversation 2019 for the State of Punjab.



अध्याय-12
Chapter-12

सूचना का अधिकार
Right to Information

Public Grievances /RTI (Chapter 31 And 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 spirit. 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.gov.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-1.

Annexure-1

Details relevant to RTI Act for the years 2019-2020 (As on 31.03.2020)

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.	82	82	NIL										NIL				NIL	1770/-

TRANSMISSION NETWORK

