भारत सरकार
Government of India
जल शक्ति मंत्रालय
Ministry of Jal Shakti
(जल संसाधन, नदी विकास और गंगा संरक्षण विभाग)
(Department of WR, RD and GR)
केन–बेतवा लिंक परियोजना प्राधिकरण
Ken Betwa Link Project Authority

सत्यमेव जयते

आज़ादी का अमृत महोत्सव

क्रमांकः-के.बे.लि.परि.प्राधि./खण्ड/झांसी/टी-30(TAG)/
No:-KBLPA/Div./JHANSI/T-30(TAG)/1110-28

दिनांकः
Date: 08.10.2024

Sub:- Minutes of 9th Meeting of Technical Advisory Group of Ken-Betwa Link Project Authority

The 9th meeting of the Technical Advisory Group of Ken-Betwa Link Project Authority (TAG-KBLPA) was held on 27.09.2024 & 28.09.2024 at Jhansi under the chairmanship of Shri D.P. Bhargava, Former Director (Technical), NHPC, Faridabad.

Minutes of the meeting, duly approved by the Chairman (TAG-KBLPA) is enclosed for kind information and further necessary action by all concerned.

08/10/24

(T. M. Tripathi)
ACEO (Canal) &
Member-Secretary

To: All the Members of TAG of KBLPA

1. Shri D.P. Bhargava, Former Director (Technical), NHPC, Faridabad.
2. Shri Y.K. Handa, Former Chief Engineer, CWC.
3. The Chief Engineer, Designs (NW&S), CWC, New Delhi.
4. Sh. V.K. Niranjan, Former HOD & E-in-C, I&WRD, UP.
5. Sh. G.P. Soni, Former Chief Engineer, WRD, MP.
6. The Director(CSMRS), New Delhi.
7. The Director, Hydrology-Central, CWC, New Delhi.
8. The Additional CEO (Head Works), KBLPA, Bhopal.
9. The Chief Engineer, BODHI, WRD, MP.
10. The Superintending Engineer (Design & Planning), KBLP, UP.

Copy of kind information to:-

1. The Member, D&R, CWC, New Delhi.
2. The Additional Chief Secretary, WRD, Govt. of MP, Bhopal
3. The Principal Secretary, I&WRD, Govt. of UP, Lucknow.

ऊपरी तल, बेतवा नदी परिषद कार्यालय, बेतवा नदी परिषद परिसर, नन्दनपुरा, शिवपुरी रोड, झांसी, (उ.प्र.)-284003
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जल बचत · जल संचय

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Special Invitee :-

1. The Chief Executive Officer, KBLPA, Bhopal.
2. The Director General, NWDA, New Delhi
3. The Engineer-in-Chief, WRD, Govt. of MP, Bhopal.
4. The Engineer-in-Chief (Projects), I&WRD, Govt. of UP, Lucknow.
5. The ACEO (HQ/P), KBLPA, Lucknow.
6. The ACEO (Construction), KBLP, I&WRD, Jhansi.

Minutes of 9th Meeting of Technical Advisory Group of Ken-Betwa Link Project Authority held on 27.09.2024 & 28.09.2024 at Jhansi

The 9th meeting of the Technical Advisory Group of Ken-Betwa Link Project Authority (TAG-KBLPA) was held on 27.09.2024 & 28.09.2024 at Jhansi under the Chairmanship of Shri D. P. Bhargava, Former Director (Technical), NHPC, Faridabad for discussion on the various components of the Ken-Betwa Link Project. The list of participants is attached as Annexure-I.

At the outset, Chairman welcomed the participant. After brief introduction of the participants, item wise agenda was taken up for discussion. The details of deliberation on agenda items and compliance on agenda items/ issues and points agreed upon are as under:

9.1 Compliances to the decisions taken in the 8th Meeting held on 11.06.2024.

S.N.	Decision taken in 8th TAG meeting	Follow-up action
1.	**(A) Repair / Strengthening / Remodeling of Bariyarpur PUW, Parichha Weir, BaruaSagar Dam along with appurtenant structures:** Consequent upon receipt of the replies of queries from M/s Universal Hydro Structures Private Limited, pioneer agency in Top Hinged Float Gates mechanism, it was decided to invite an Expression of Interest (EOI) from experienced firms in the field of HM Gates to meet the functional, structural and hydraulic requirements of the projects as well as to demonstrate its suitability and reliability at Bariyarpur PUW and Parichha Weir. **(B) <u>Repair / Strengthening / Remodeling of Barua Sagar Dam:</u>** TAG suggested that a sustainable desilting arrangement for the Barua Sagar Dam shall be established. I&WRD shall propose suitable sites from Barua Sagar, preferably at locations near downstream drains, for constructing adequately sized sluice gates with provisions for regular operation. The size of the existing outlets shall be increased at the downstream side to facilitate effective silt removal suitably. The possibility of using the removed silt/soil for local agricultural purposes shall be explored, and provisions may be made for its use in Ken-Betwa Canal works up to a certain lead distance. Additionally, mechanisms to make the silt available for government, public, or KBLPA projects, in accordance with state policies, shall be developed to minimize the cost of silt removal.	**(A)** EOI was invited by GoUP for the Techno-Commercial Offer of Self-Operating Automatic Hydro Mechanical Gates for Remodeling, Renovation and Modernization of Bariyarpur Pick up Weir, District Panna (M.P.) and Parichha Weir ,District Jhansi (U.P.). **(B)** For sustainable desilting arrangement for the Barua Sagar Dam feasible suitable sites near the downstream drains for constructing the sluice gates of adequate size with provisions of operating them regularly have been explored by GoUP.
2.	**EPC contract of Ken-Betwa <u>Link</u> Canal**	The draft tender for EPC execution of Ken-Betwa Link Canal has been prepared in two packages and circulated to State Governments of M.P. and U.P. for their comments/suggestions vide letter dated 12.07.2024.

9.2 Repair / Strengthening / Remodeling of Bariyarpur PUW, Parichha Weir, Barua Sagar Dam along with appurtenant structures: -

A. PARICHHA WEIR

Background:

After observing the dilapidated state of the gates during its site visit, the TAG in its 6th meeting, had suggested for renovation / modification / replacement for Bariyarpur PUW and Parichha Weir. In this regard, various alternatives have been explored. The Irrigation Department, Govt. of UP has indicated that it has found the Top Hinged Float Gates to be a cost-effective solution for increasing live storage capacities of existing reservoirs and adopted the mechanism in pilot irrigation projects. Thus, the option of "Top Hinged Float Gates" has been considered.

M/s Universal Hydro Structures Private Limited, a pioneer agency in Top Hinged Float Gates mechanism, made a presentation at HQs, NWDA, New Delhi on 30.11.2023 and submitted a proposal to replace the existing outdated falling shutter gates with the latest, state-of-the-art, unique, innovative and highly specialized Top Hinged Float Gates at Bariyarpur PUW and Parichha Weir.

On February 10, 2024, Members of the TAG-KBLPA visited the Top Hinged Float Gate installed over Ramial River, Dhenkanal District, Odisha and discussed the feasibility of installation for Bariyarpur and Parichha.

In the **Seventh meeting** of the TAG held on 17.02.2024, it was decided that final decision on the proposal for installation of Self-Operating Top Hinged Float Gates shall be taken after the reply of the queries is received from the firm.

The reply of the queries, received from the firm was discussed in detail. It was held that although construction of Top Hinged Float Gates in big projects is a relatively new, such gates of smaller sizes have been used elsewhere in India and abroad. Members considered it appropriate to visit the installed gates, during the passage of flood.

In the **Eighth meeting** of the TAG held on 11.06.2024 and it was decided it was considered prudent to invite an Expression of Interest (EOI) from the experienced firms in this field to meet the functional, structural and hydraulic requirements of the projects as well as to demonstrate its suitability and reliability at Bariyarpur PUW and Parichha Weir. This exercise would help in making assessment of the availability of the vendors in India to fulfill the structural and functional requirements of the projects.

In pursuance, the EOI was invited for the Techno-Commercial offer of Self-Operating Automatic Hydro Mechanical Gates for Remodeling, Renovation and Modernisation of Bariyarpur Pick up Weir District Panna (M.P.) and Parichha Weir District Jhansi (U.P.). EOI were received as below:

For Bariyarpur PUW

a) M/s Satya Buildcon, Rajnandgaon, Chhattisgarh
b) M/s Universal Hydro Structures Pvt. Ltd., Nagpur, Maharashtra
c) M/s Ralhee Enterprises, Prayagraj, UP.

For Parichha weir

a) M/s Satya Buildcon, Rajnandgaon, Chhattisgarh
b) M/s Universal Hydro Structures Pvt. Ltd., Nagpur, Maharashtra
c) M/s Godbole Gates Pvt. Ltd., Nagpur, Maharashtra.

After detailed deliberation in the Ninth meeting, following decisions were taken

i. The masonry structure may have undergone significant chemical and physical changes over time. Installing gates in an inclined position could induce tensile stress, which should be avoided to prevent jeopardizing existing functionality. New piers for gates should be designed such as not to create any tension in the existing weir and constructed without hampering current functionality to provide water to stakeholders.

ii. Further, the intervention should not be hydrologically and structurally risky. The modernization of the structure should be carried out in a manner considering stability of the structure.

iii. LiDAR survey should be done to assess the local scour in the downstream of Parichha weir.

iv. I&WRD U.P. was suggested to prepare the detailed estimate for the Self-Operating Automatic Hydro Mechanical Gates for making the comparison with respect to the received EOIs.

v. The tendering process should be done in EPC mode considering incorporating works for Gates and Civil works in a single tender.

vi. Provision of Additional under sluice near head of Gursarai canal should be made for efficient operation of the weir.

B. BARUA SAGAR DAM

The UP I&WRD gave presentation on the existing status of the Barua Sagar Dam, desilting proposal and the feasible suitable sites for constructing the sluice gates of adequate size with provisions of operating them regularly. The TAG after discussion recommended that:

i. In view of the findings of the test report informed from I&WRD that the material deposited in the reservoir is clayey silt, the cost of de-silting of Barua Sagar reservoir outweighs the benefits for KBLP and is not economically sustainable and hence was not recommended to be the part of the KBLP.

ii. The Site-2 and Site -3 as presented by I&WRD; UP appeared prima facie suitable for constructing the sluice gates. These may be further examined by I&WRD, UP for their suitability and a detailed proposal be presented in next TAG meeting.

9.3 Detailed Project Report of Restoration of Bariyarpur Left Bank Canal.

A presentation was made by WRD, M.P highlighting that the 48.90 km long main canal originates from the left bank of the Bariyarpur Pickup Weir in Chhatarpur district, Madhya Pradesh, and has a designed irrigation capacity of 43,750 hectares in the Chhatarpur district.

During the discussions following points emerged: -

i. WRD M.P. presented the proposal of development of new command area of about 3200 ha through pressurized pipe irrigation network. However, the TAG recommended that issues other than the repair and renovation of canal structures, should be addressed separately.

ii. Citing the non-availability of head for flow of water into the canal, the WRD M.P. underlined the requirement of new head regulator for the canal. However, on further discussion it emerged that after the renovation of Bariyarpur PUW sufficient head would be available and therefore there is no requirement of new head regulator.

iii. The WRD M.P. submitted that the structures are more than 50 years old and same were not renovated during the recent renovation and modernization and therefore there is need of repairing/renovation of the structures. It was also submitted that canal has been damaged at some locations and the selective stretches also required to be repaired. However, during the further deliberation it emerged that the Bariyarpur left bank canal has been renovated in the recent times and therefore WRD M.P. should reexamine the proposal and put up in next TAG meeting with detailed data and ground conditions.

iv. After the detailed discussion, TAG suggested that for the assessment of the damage, drone-based photography of the Canal should be carried out. The renovation/repairing damaged structures of canal and repairing work of damaged selective stretches may be done after ascertaining the need post assessment using the drone survey.

9.4 EPC contract of Ken-Betwa Link Canal:

The TAG was apprised that a stakeholder meeting was held in the 27.09.2024 (FN) and was attended by several prospective bidders. The outline of the draft tender for EPC construction of 218 km long Ken Betwa Link Canal was presented to them. The bidders were requested to convey their queries or suggestions, if any, through email before 3rd October 2024. KBLPA will consider the suggestions as possible in the forthcoming tender. Outline of the draft tender was also presented to the TAG. After detailed deliberations, the TAG made the following recommendations:

a) Considering the practical experience of both the states and recent demands of stakeholders, the number of bridges as envisaged in the draft Tender are far too less which were based on DPR of 2010. The same needs to be 01 bridge per 1.5 Km on average basis for entire canal length.

b) The escapes as envisaged in the draft tender are quite less and there should be at least one escape between every cross regulator.

c) The Siphons are presently not in practice because of the operational difficulties. Unless the pressing circumstance warrants so, the Aqueduct needs to be preferred over the Siphons.

d) A cross regulator needs to be provided downstream of every pumping station and where ever required for filling the enroute Tanks/ Reservoirs which may be incorporated in the draft tender.

e) The State Governments of UP and MP need to firm up their size, design and locations of the outlets at the earliest. Further need to inform the number and design of their proposed outlets and the stilling well to ensure the connectivity with Main Canal. The draft tender needs to put an obligation on the contractor within his scope so that the outlets envisaged by the states seamlessly integrate into the canal structurally and hydraulically.

f) The draft tender should incorporate obligation on the contractor to provide the disposal plan for approval of the KBLPA. A clause for the monitoring of adherence by the contractor to the disposal plan may be suitably inserted.

g) For calculating discharge for design of cross-drainage works using Dickens Formula, the value of Dicken's Constant "C" in the formula should be specified as 26.

h) The draft tender need to specify the batteries proposed i.e. Lead acid or VRLA batteries. Chairman, TAG suggested use of Lead acid batteries

i) The draft tender must clearly provide the scope of Real Time Data Acquisition System (RTDAS). The standard specifications are already in place by the BIS. However, the provision may be inserted to provide an option the contractor to recommend any improvement which will be subjected to the acceptance of KBLPA.

j) The design of the embankments may be optimized to keep first 2 m from the surface as earth fill and the core filled with the compacted material in the same way as the CFRD. Now the BIS code for the CFRD is also available and the work may comply to the same standard. The conditions of the tender should make vibratory compaction in the embankment non-cohesive fillings as mandatory.

k) The tender needs to elaborate on the detailed scope of Testing and Commissioning

l) The Specific Experience requirements for the Gross combined excavation, Gross combined earth filling and the canal lining should be reduced from 85,00,000 Cum, 22,05,740 Cum and 1,40,000 Cum respectively to 25% of the estimated quantum of the same in the present works.

m) In the specific experience requirement for the bridges, the requirement of "Minimum collective length of 5 km in a single Irrigation Project" may be changed to "Minimum collective length of 5 km"

n) The TAG agreed in principle on the suggestions of few prospective bidders regarding provision of pipe network wherever technically feasible considering the functional requirements for speedy execution and reduced land acquisition. However, decision and approval of KBLPA on such proposals by the contractor shall be binding on the contractor.

The TAG recommended modifying the draft tender as per suggestions in the meeting and the relevant appropriate and implementable suggestions of the prospective bidders to be received. The modified draft tender and the compiled suggestions of the prospective bidders may be placed before the TAG in its next meeting for its consideration. The next meeting of the TAG may be held exclusively on the tender document.

The meeting ended with vote of thanks to Chair.

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Annexure-I

List of participants in 9th meeting of Technical Advisory Group for Ken-Betwa Link Project Authority (TAG-KBLPA) held at Jhansi on 27.09.2024

Technical Advisory Group

1.	Shri D. P. Bhargava, Former Director (Tech.), NHPC, Faridabad	Chairman
2.	Shri Raj Kumar Mishra, ACEO (Head works), KBLPA, Bhopal	Member
3.	Shri Gyan Prakash Soni, Retd Chief Engineer, WRD, MP	Member
4.	Shri T.M. Tripathi, ACEO(Canal), KBLPA	Member Secretary

Special Invite

1. Shri Prashast Kumar Dixit, CEO, KBLPA.
2. Shri Shiva Prakash, ACEO(HQ/P), KBLPA, Lucknow.
3. Shri Devesh Shukla, ACEO (Construction), KBLCC, Jhansi.

Other Participants

1. Shri Pradeep Kumar Saxena, Consultant, KBLPA, Bhopal.
2. Shri Naveen Gaur Superintending Engineer, KBLP, Chhatarpur.
3. Shri Ashish Singh Kushwah Executive Engineer, KBLPA, Jhansi
4. Shri N.C. Jain Executive Engineer, KBLP, Chhatarpur.
5. Shri Suneel Kumar Ahirwar SDO, KBLP, Chhatarpur.
6. Shri Sayam Assistant Director, WRD, MP
7. Shri Ashish Swami, Assistant Engineer, KBLPA, Jhansi
8. Shri Amit Tiwari, Junior Engineer, KBLPA, Jhansi

List of participants in 9th meeting of Technical Advisory Group for Ken-Betwa Link Project Authority (TAG-KBLPA) held at Jhansi on 28.09.2024

Technical Advisory Group

1.	Shri D. P. Bhargava, Former Director (Tech.), NHPC, Faridabad	Chairman
2.	Shri Raj Kumar Mishra, ACEO (Head works), KBLPA, Bhopal	Member
3.	Shri Gyan Prakash Soni, Retd Chief Engineer, WRD, MP	Member
4.	Shri V.K. Niranjan Former HOD & E-in-C , I&WRD, UP	Member
5.	Shri Vijai Saran, Chief Engineer (NW&S), CWC	Member
6.	Shri T.M. Tripathi, ACEO(Canal), KBLPA	MemberSecretary

Special Invite

1. Shri Prashast Kumar Dixit, CEO, KBLPA.
2. Shri Shiva Prakash, ACEO(HQ/P), KBLPA, Lucknow.
3. Shri Devesh Shukla, ACEO (Construction), KBLCC, Jhansi.

Other Participants

1. Shri Pradeep Kumar Saxena, Consultant, KBLPA, Bhopal.
2. Shri Naveen Gaur,SE, WRD, MP, Chhatarpur.
3. Shri Dinesh Kumar Mishra, SE, KBLCCC, Mahoba, I&WRD, UP.
4. Shri Sandeep Kumar Khare, SE, I&WRD, UP.
5. Shri Ashish Singh Kushwah, EE, KBLPA, Jhansi.
6. Shri Santosh Kumar, EE, KBLCCD-1, Jhansi.
7. Shri Jitendra Kumar, EE, KBLCCD-2, Banda, I&WRD, UP.
8. Shri Atulya Jyoti, Deputy Director, CWC, New Delhi.
9. Shri N.C. Jain,EE, WRD, MP, Chhatarpur.
10. Shri Akhilesh Kumar, EE, KBLCCD-1, Mahoba, I&WRD, UP.
11. Shri Ramesh Chandra, AE, KBLCCD-2, Jhansi (UP).
12. Shri Shivam Agrawal, AE, KBLCCD-2 Jhansi, I&WRD, UP.
13. Shri Satish Kumar Bundelkar, AE, KBLCCD-1, Mahoba, I&WRD, UP.
14. Shri Sourabh Singh, AE, KBLCCC, Mahoba, I&WRD, UP.
15. Shri Vaibhav Mohan Das, AE, KBLCCC, Mahoba, I&WRD, UP.
16. Shri Manoj Kumar, AE, KBLCCD-1, Jhansi.
17. Shri Ashish Swami, AE, KBLPA, Jhansi.
18. Shri Suneel Kumar Ahirwar, SDO, KBLP, Chhatarpur.
19. Shri Anshul Jain, AE, KBLPA, Jhansi.
20. Shri Ravi Shankar, AE, KBLCCD-1, Jhansi, I&WRD, UP.
21. Shri Vinay Kumar Mishra, AE, KBLCCD-1, Jhansi, I&WRD, UP.
22. Shri Deepak Awasthi, AE, KBLCCD-1 Jhansi, I&WRD, UP.
23. Shri Sanyam, Assistant Director, WRD, MP.
24. Shri Nihit Kumar Singh, AE, KBLCCD-2, Banda.
25. Shri Than Singh, JE, KBLCCD-I, Jhansi.
26. Shri Amit Tiwari, JE, KBLPA, Jhansi.