

**MOST IMMEDIATE**

**J-16011/1/2010-NRCD-II(Part)**  
**Government of India**  
**Ministry of Environment & Forests**  
**(National River Conservation Directorate)**

**New Delhi, dated the 21<sup>st</sup> March, 2011**

**Sub: Minutes of the fourth meeting of the Empowered Steering Committee (ESC) of the National Ganga River Basin Authority (NGRBA) held on 11<sup>th</sup> March, 2011.**

A copy of the Minutes of the fourth meeting of the Empowered Steering Committee (ESC) of the National Ganga River Basin Authority (NGRBA) held on 11<sup>th</sup> March, 2011 under the chairmanship of Secretary (Environment & Forests) is forwarded herewith for information/ necessary action.

*S.K. Agrawal*  
(S.K. Agrawal)  
Director(A), NRCD 21/3/11  
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**Encl: As above**

*etc.*

To

ESC:

1. Secretary, Ministry of Environment and Forests, Paryavaran Bhawan, New Delhi.
2. Secretary, Dept of Expenditure, Ministry of Finance, North Block, New Delhi.
3. Secretary, Ministry of Urban Development, Nirman Bhawan, New Delhi.
4. Secretary, Ministry of Water Resources, Shram Shakti Bhawan, New Delhi.
5. Secretary, Ministry of Power, Shram Shakti Bhawan, New Delhi.
6. Secretary, Department of Science and Technology, Technology Bhawan, New Delhi.
7. Secretary, Planning Commission, Yojna Bhawan, New Delhi.
8. Chief Secretary, Uttrakhand Secretariat Dehradun, Uttarakhand.
9. Chief Secretary, Shastri Bhawan, Lucknow, Uttar Pradesh.
10. Chief Secretary, Main Secretariat, Patna, Bihar.
11. Chief Secretary, Project Bhawan, Ranchi, Jharkhand.
12. Chief Secretary, Writers Building, Kolkata, West Bengal.
13. AS&PD, MoEF, Paryavaran Bhawan, New Delhi.
14. AS&FA, MoEF, Paryavaran Bhawan, New Delhi. 21/3
15. Chairman, Central Pollution Control Board, Arjun Nagar, New Delhi.
16. Chairman, Central Water Commission, Sewa Bhawan, New Delhi.

4. In response to the observations/questions raised by the Chairman of the Empowered Steering Committee and Chairman-CPCB, Prof. Bailey Green provided the following clarifications:

- (i) The treated effluent from the STP will achieve BoD < 5 mg/l in addition to 6 log reduction in fecal coliform.
- (ii) The life cycle cost of the STP would be much lower than conventional mechanized STPs, due to much lower O&M costs.
- (iii) Adequate training of local people would be done to ensure that after the STP is handed over by Sankat Mochan Foundation (SMF)-GO<sub>2</sub> Water Consortium to Varanasi Nagar Nigam, they can operate and maintain the plant properly.
- (iv) The hydraulic design of the STP and the paddle mixers installed in the ponds will ensure that the preferred indigenous bacteria species will dominate in the pond system.
- (v) The bio-gas generated by the AIWPS STP will have 90% CH<sub>4</sub> and can generate Rs. 2-3 crore per annum of revenue. Similarly, the algae harvested in the Algal Settling Ponds can be used as animal feed and also generate revenue.

5. The Additional Secretary & Financial Advisor, MoEF observed that the issues relating to patent/license fees, replicability of the AIWPS technology in view of the high per mld cost and the comments raised by the peer reviewing agencies (IIT, Kanpur and IIT, Delhi) need to be addressed. The Deputy Advisor, CPHEEO felt that the issue relating to large size of the pilot plant also needs to be kept in mind while considering the proposal.

In response, Prof. V.B. Mishra of SMF and Dr. Bailey Green informed that the life cycle cost of the AIWPS technology would be much lower than conventional mechanized STPs for achieving the same level of treated effluent quality. Also, the cost of the technology at Ramana was coming higher due to the fact that the STP site was located on flat land resulting in higher excavation costs, as compared to places like Sota (a spill channel) in the downstream of Varanasi, where the cost of the STP would be much lower. On the issue of payment of 3 % license fee, it was clarified that since the patent for AIWPS technology will expire in India only in 2020, the same will have to be paid to M/s GO<sub>2</sub> Water Inc. With regards the size of the pilot plant, Prof. V.B. Mishra informed that the capacity of the pilot plant has been kept in consonance with the I&D works of the Assi-BHU area under implementation by UP Jal Nigam and the land already acquired by UP Govt. for the STP. The Research Advisory Committee of NGRBA had also examined the various aspects of the project while recommending it.

Minutes of the 4<sup>th</sup> meeting of the Empowered Steering Committee (ESC) of NGRBA held on 11<sup>th</sup> March, 2011 in Paryavaran Bhawan, New Delhi

The 4<sup>th</sup> meeting of the Empowered Steering Committee (ESC) of NGRBA was held on 11<sup>th</sup> March, 2011 at 9.30 am in Paryavaran Bhawan, New Delhi under the chairmanship of Secretary, Ministry of Environment & Forests (MoEF). The following project proposals of U.P. were taken up for consideration:

- (i) 40 mld STP at Ramana, Varanasi using AIWPS (Advanced Integrated Wastewater Pond System) technology on pilot project basis - Rs. 52.21 crore
- (ii) Development of area around Assi Ghat, Varanasi - Rs. 27.28 crore

List of participants is annexed.

2. The Chairman welcomed the participants and requested the Secretary (Urban Development), Govt. of UP to present the project proposals.

Secretary (Urban Development), UP gave a brief introduction of the two project proposals and observed that these projects would go a long way in improving the environmental conditions in the Assi Ghat area and reduction in pollution load into the river Ganga. The first proposal relates to trying out an innovative technology, namely AIWPS (Advanced Integrated Wastewater Pond System) at Ramana on pilot basis to demonstrate its efficacy in Indian conditions. The second proposal relates to development of Assi Ghat and its surrounding areas in an integrated manner by providing improved river front, public amenities at the ghat along with efficient solid waste management, thereby resulting in a cleaner river. Thereafter, detailed presentations on the two proposals were made.

**40 mld STP at Ramana, Varanasi using AIWPS technology on pilot project basis**

3. Dr. Bailey Green of M/s GO<sub>2</sub> Water Inc., USA, who are the patent holders for the AIWPS technology, presented the proposal of the 40mld STP at Ramana. He informed that the technology is a result of 60 years of applied research and STPs based on the technology are successfully operating in California, USA for the last 40 years. The technology gives treated effluent of very high quality without use of chemical disinfectants, which would be suitable for unrestricted irrigation or any other beneficial reuse. The AIWPS provides for nutrient removal in addition to 6 log reduction of fecal coliforms/4 log reduction in viruses and very low BOD in treated effluent, which may not be possible to achieve in conventional waste stabilization ponds. He also informed that due to lower O&M costs, the life cycle cost of the technology over its life period would be lower than mechanized STPs.

Varanasi that IL&FS has been appointed as a consultant by UP Jal Nigam for conceiving and preparing the DPR for the project, and the PPP component envisaged under the project is limited to generating revenues after project completion for ensuring sustainability of O&M. They further informed that the project will improve the environmental conditions at Assi Ghat & surrounding areas, and also substantially reduce locally generated pollution load, especially the disposal of solid waste into Ganga, thereby resulting in a cleaner river.

10. The Committee was of the view that while the project may be implemented, options for greater element of public private partnership (PPP) should be explored in the subsequent river front development schemes in U.P. Further, all the observations made by AMU (the appraisal agency) while recommending the project should be complied with during tendering/implementation. As per the policy decision taken earlier, AMU may be given the first option for appointment as the TPI for the project. The TPI should monitor the action taken with regards to the observations made by the appraisal agency while recommending the project.

11. On the basis of the discussions elaborated above, the ESC recommended the project proposal for approval for Rs. 27.28 crore and approved the release of 1<sup>st</sup> installment of Rs. 4.60 crore (25% of GoI share of the capital cost), subject to the following conditions:

- (i) The State Government will submit
  - confirmation that there is no overlap between the between the provisions made for solid waste management in the present proposal and those sanctioned earlier under JNNURM.
  - Note detailing the PPP initiatives proposed under the project.
  - MoA for the project duly signed by the State Government and the local body.
- (ii) The observations mentioned in para (10) above will be complied with by the State Government/implementing agency.

The meeting ended with thanks to the Chair.

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6. On the basis of the discussions elaborated above, the Chairman summed up the following conclusions:

- (i) It is recognized that innovative technology is required to be taken up on a pilot basis for high treated effluent quality which would be suitable for unrestricted irrigation or any other beneficial reuse.
- (ii) A meeting may be held between SMF/GO<sub>2</sub> Water, IIT-Kanpur, IIT-Delhi, CPCB & CPHEEO to address the various technical & financial issues relating to the project proposal, including the issue relating to costs & technology, and the proposal re-submitted based on the reviewed appraisal report.

#### **Development of area around Assi Ghat, Varanasi**

7. The Municipal Commissioner, Varanasi Nagar Nigam initiated the presentation on the river front development proposal of Assi Ghat. He informed that the proposal has been prepared in line with the City Development Plan (CDP) for Varanasi which places the 7 kms. ghat area (from Assi Ghat to Rajghat) in the river front heritage zone. The proposal aims at achieving the overall qualitative improvement of the physical and social infrastructure of the area around Assi Ghat, and mitigating the adverse impact of urban activities along the river front, thus resulting in a cleaner river. Thereafter, Shri Sachdeva, Consultant, IL&FS Environment, who were engaged by the State Govt./UP Jal Nigam presented details of the various activities to be taken up under the project, including development of the ghat, installation of public amenities in the area, improved street design and parking facilities as well as proper solid waste management at the ghat. It was also informed that the project envisages that the O&M activities will be sustained by revenues generated from various components of the project after the initial two years.

8. The Deputy Advisor, CPHEEO wanted to know the need for solid waste management component of the project as under JNNURM, MoUD has already sanctioned a solid waste management scheme for Varanasi. He also desired to know the priority to RFD schemes over sewerage schemes under the NGRBA programme. It was informed by the Municipal Commissioner, Varanasi Nagar Nigam that the ghats of Varanasi are used daily by lakhs of pilgrims/local people and a comprehensive plan, including solid waste management, is necessary for providing public facilities at the ghats. It was further clarified by him that there is no overlap between the provisions made for solid waste management in the present proposal and those sanctioned under JNNURM. The Secretary (Urban Development), UP informed that integrated development of ghats in a place like Varanasi, where a large interface between the public & the river takes place, is very important. Also, sewerage and STP schemes amounting to more than Rs. 1300 crore have already been sanctioned under NGRBA in UP, including Rs. 500 crore in Varanasi, indicating that the priority is being given to the core schemes in UP.

9. The Additional Secretary & Financial Advisor, MoEF desired to know about the PPP initiatives in the project, especially in the capital cost, the impact of the project on river water quality and the role of IL&FS in the project. It was clarified by the Secretary (Urban Development), UP and the General Manager, UP Jal Nigam,

Annexure

List of participants of the 4<sup>th</sup> meeting of the Empowered Steering Committee (ESC) of NGRBA held on 11<sup>th</sup> March, 2011 in Parvati Bhawan, New Delhi

**Ministry of Environment & Forests (MoEF)**

1. Shri T.Chatterjee, Secretary - in chair
2. Ms. Meera Mehrishi, Additional Secretary & Project Director, NRCD
3. Ms. Gauri Kumar, Additional Secretary & Financial Adviser
4. Shri S.P.Gautam, Chairman, CPCB
5. Shri Rajiv Gauba, Joint Secretary
6. Shri Vivek Wadekar, Director (Finance)
7. Shri Brijesh Sikka, Director, NRCD
8. Shri Sanjay Kumar Singh, Deputy Director, NRCD
9. Shri D.C.Sharma, Under Secretary (Finance), NRCD
10. Dr. D.D.Basu, Additional Director, CPCB
11. Shri Sunil Dave, Senior Environmental Engineer, CPCB

**Other Central Ministries/Organisations**

12. Shri C.K.Agrawal, Chief Engineer, Central Water Commission
13. Shri V.K.Talwar, Director, Central Water Commission
14. Shri B.K.Rai, Deputy Commissioner, Ministry of Water Resources
15. Shri Tanmoy Das, Chief Engineer, Central Electricity Authority
16. Shri V.K.Chaurasia, Deputy Advisor, CPHEEO, Ministry of Urban Development
17. Shri Ashok Sharma, Section Officer (PF-II), Department of Expenditure

**Government of Uttar Pradesh**

18. Shri P.V.Jagan Mohan, Secretary, Department of Urban Development
19. Shri V.K.Dubey, Municipal Commissioner, Varanasi Nagar Nigam
20. Shri Ravi Rastogi, Chief Engineer (Ganga), UP Jal Nigam
21. Shri Ramesh Singh, General Manager, UP Jal Nigam, Varanasi
22. Shri A.K.Singh, Project Manager, UP Jal Nigam, Varanasi

**Others**

23. Prof. V.B.Mishra, President, Sankat Mochan Foundation, Varanasi
24. Dr. F. Bailey Green, President, GO<sub>2</sub> Water Inc., USA
25. Ms. Amrita Mukerji, Sankat Mochan Foundation, Varanasi
26. Shri Ashok Pandey, Sankat Mochan Foundation, Varanasi
27. Shri R.K.Gupta, Vice-President, IL&FS Environment
28. Shri Pradeep Sachdeva, Consultant, IL&FS Environment