

F. No. 15/47/2016-SBM-I
Government of India
Ministry of Urban Development

Nirman Bhawan, New Delhi
Dated: 14th December, 2016

OFFICE MEMORANDUM

Sub.: Formation of “Technology Evaluation Committee for Solid & Liquid Waste and Water Supply”- reg.

It has been decided by Competent Authority to constitute an Expert Committee on “Technology Evaluation Committee for Solid & Liquid Waste and Water Supply” to identify/recommend appropriate and sustainable technologies in the field of solid waste, sanitation, sewerage and water supply with a proven track record. The composition of Expert Committee and Terms of references (TORs) are as under:-

A. Composition of the Expert Committee

1. Dr. R.A. Mashelkar,
National Research Professor &
President, Global Research Alliance, Pune - Chairperson

a. National Experts

S. No.	Name of Member	Organization	Role
2.	Mr. P.U. Asnani	Ex Deputy Municipal Commissioner, UMC Ahmedabad	Member
3.	Mr. Bhushan Chandra	Deputy Director General of Centre for Science and Environment (CSE), New Delhi	Member
4.	Dr. Sharad P. Kale	Head of Technology Transfer and Collaboration at Bhabha Atomic Research Centre (BARC)	Member
5.	Mr. Ravi Pandit	Chairman and Group CEO of KPIT Technologies Ltd, Pune	Member
6.	Dr. N. B. Mazumdar	Ex-Chief (SWM), HUDCO	Member
7.	Dr. Atul N. Vaidhya	Sr. Principal Scientist & Head- Solid and Hazardous Waste Management Division, NEERI, Nagpur.	Member
8.	Dr. S. Sundaramoorthy	Former Engineering Director, Chennai Metropolitan WS & SB	Member

b. State Experts

S. No.	Name of Member	Organization	Role
1.	Mr. Sanjit Rodrigues	Managing Director, Goa State Infrastructure Development Corporation Limited (GSIDC)	Member
2.	Ms. K. Vasuki	Executive Director, Suchitwa Mission, Government of Kerala	Member

c. MOUD Experts

S. No.	Name of Member	Organization	Role
1	Sh. Saurabh Jain	Director (PHE)	Member
2	Sh. V.K. Chaurasia	Adviser(I/C), CPHEEO	Member Secretary
3	Sh. Rohit Kakkar	Deputy Adviser, CPHEEO	Member

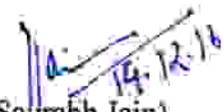
The Chairman can invite any other expert(s) depending on need for the meetings.

B. Terms of Reference

- i. To identify appropriate and sustainable technologies in the field of solid waste, sanitation, water supply and sewerage, with a proven track record in India or in a setting related to India.
- ii. The committee shall also carry out the technical assessment/ feasibility of identified emerging technologies in India and its affordability and scalability on a nationwide basis.
- iii. Certification of emerging technologies for taking up for implementation by ULBs and recommending funding support from GoI for taking up few such pilot plants in the country.
- iv. To provide recommendation on the steps needed to promote the identified technologies. The recommendations could be on policy interventions, fiscal incentives, system delivery innovations, social innovations etc. so as to promote the identified technologies in the field.
- v. Any other matter on recommendation of the Committee including inviting additional experts for the meetings, if required.

Committee will hold meetings periodically depending on need but atleast twice in a year. The committee will be normally valid for next three years or till further orders and will be reconstituted depending on specific needs of the sector.

The TA/DA, boarding and lodging of the members of the Expert Committee will be borne by this Ministry out of SBM Capacity Building Fund.


(Saurabh Jain)
Director (SBM-I & PHE)
Tel.No. 23062374

To

- 1) Dr. R.A. Mashelkar, National Research Professor & President, Global Research Alliance, Pune.
- 2) Shri P.U. Asnani, Ex Deputy Municipal Commissioner, UMC Ahemdabad.
- 3) Shri Bhushan Chandra, Deputy Director General of Centre for Science and Environment (CSE), New Delhi.
- 4) Dr. Sharad P. Kale, Head of Technology Transfer and Collaboration at Bhabha Atomic Research Centre (BARC), Mumbai
- 5) Shri Ravi Pandit, Chairman and Group CEO of KPIT Technologies Ltd, Pune.
- 6) Dr. N. B. Mazumdar, Ex-Chief (SWM)-HUDCO, B-401, Paarijat Apartment, Plot No.28, Sector-4, Dwaraka, New Delhi-110078 E-Mail id nbmazumdar@gmail.com
- 7) Dr. Atul N. Vaidhya, Sr. Principal Scientist & Head- Solid and Hazardous Waste Management Division, NEERI, Nagpur.
- 8) Dr. S. Sundaramoorthy, Former Engineering Director, Chennai Metropolitan WS&SB, Chennai
- 9) Shri Sanjit Rodrigues, Managing Director, Goa State Infrastructure Development Corporation Limited (GSIDC).
- 10) Ms. K. Vasuki, Executive Director, Suchitwa Mission, Government of Kerala. Swaraj Bhavan, Base Floor (-1), Nanthencode, Kowdiar PO, Thiruvananthapuram - 695003
- 11) Shri Saurabh Jain, Director (PHE), Ministry of Urban Development, New Delhi
- 12) Shri V.K. Chaurasia, Adviser (I/C), CPHEEO, Ministry of Urban Development, New Delhi with request to issue all concerned through e-mail
- 13) Shri Rohit Kakkar, Deputy Adviser, CPHEEO, Ministry of Urban Development, New Delhi

Copy for information to:

- 1) PPS to Secretary (UD)
- 2) PS to JS & MD (SBM)

Profile of Expert Committee Members of Technology Evaluation Committee for Solid & Liquid Waste and Water Supply

a) Chairperson:

1. **Dr. R.A. Mashelkar:** Dr. R.A. Mashelkar, National Research Professor and Chairman, National Innovation Foundation, is presently also the President of Global Research Alliance. Dr. Mashelkar was the Director General of Council of Scientific and Industrial Research (CSIR) and also President of Indian National Science Academy. Dr. Mashelkar has been globally decorated with some of the highest scientific honors, such as FRS, Fellow of US National Academy of Science & also Engineering, Fellow of American Academy of Arts & Science, Star of Asia, etc. 37 universities have honoured him with honorary doctorates, which include Universities of London, Salford, Pretoria, Wisconsin, Swinburne and Monash. In the post-liberalized India, Dr. Mashelkar has played a critical role in shaping India's Science, Technology & Innovation policies. He was a member of the Scientific Advisory Council to the Prime Minister set up by successive governments since mid-eighties. The President of India honoured Dr. Mashelkar with Padmashri (1991), with Padmabhushan (2000) and with Padma Vibhushan (2014). Tel : 020-46925703, e-mail: ram@ncl.res.in, website: www.mashelkar.com.

b) National Experts:

2. **P.U. Asnani:** Asnani, is one of the country's renowned experts on urban governance and an International Expert on Solid Waste Management. Working in the urban sector for over 30 years, Mr. Asnani's experience and expertise is widely sought by various governments and civic authorities both nationally and internationally. He has been a member of the Supreme Court appointed Expert Committee on Solid Waste Management; a member of Technology Advisory Group & Chairman of the Core Group on appropriate Technology & Research & Development in Solid Waste Management. He was a member on the Expert panel to draft the National Manual on Solid Waste Management constituted by the Ministry of Urban Development, Govt. of India. Mr. Asnani has represented India in various forums constituted by leading national and international development agencies / institutions like the World Bank, USAID, ICMA etc. Tel: 022-22814702, (http://urbanmanagementconsultants.com/team_umc.htm#puasnani)
3. **Bhushan Chandra:** Chandra Bhushan is the Deputy Director General of Centre for Science and Environment (CSE), a Delhi-based think tank. With an academic background in Environmental Planning and Technology from Centre for Environmental Planning and Technology, he has been associated with CSE since 1997. He heads the Industry-Environment, Pollution Monitoring Laboratory, Food Safety and Toxins, Renewable

Energy, Climate Change Policy and Advocacy and Training teams at CSE. He is also Consulting Editor for *Down To Earth* magazine. He was the co-chair of the technical advisory committee, Global Reporting Initiative, USA/Netherlands till 2002. Environmental management sectional committee, Copenhagen Working Group on CSR (business and development), Copenhagen Business School, EIA Accreditation Committee, QCI, and on the board of Governors, NABET, QCI. He is also an expert member for the BASIC (Brazil, South Africa, India, China) group of countries. Phone — 011 - 4061 6000 (Extn: 297), e-mail — chandra@cseindia.org; www.chandrabhushan.net

4. **Sharad P Kale:** Sharad Kale is the Head of Technology Transfer and Collaboration at Bhabha Atomic Research Centre (BARC). He is well known for developing Biogas plant Based on Biodegradable waste resource (NISARGRUNA).[1] On 26 January 2013 the Government of India honored him with the Padma Shri Award in the Discipline of Science and Engineering (<https://www.youtube.com/watch?v=MufcH0QzzIE>). His presentation is also attached herewith. e-mail: skale@barc.gov.in; Mobile 09969573641.
5. **Ravi Pandit:** Ravi Pandit is the co-founder and Chariman of KPIT Technologies Ltd. (www.kpit.com), a company that works on technologies for a better world. Ravi Pandit holds a Master's degree from Sloan School of Management, MIT, Cambridge, USA. He has been deeply engaged in civic matters in the field of economic and social policies, both in urban as well as rural areas. A former president of the Maharashtra Chamber of Commerce, Industries and Agriculture, he is the Founder trustee of the NGO 'Janwani' (<http://janwani.org/site>), which is focussed on urban matters such as solid waste management, environment, traffic and transportation, energy, governance and city structure. His leadership in solid waste management through Janwani has made a big difference to the city of Pune. e-mail: ravi.pandit@kpit.com; Mobile : 9860090383.
6. **Dr. N. B. Mazumdar:** Currently he is Honorary Director General, Sulabh International, looking into sanitation issues. Before this he worked as Chief Technical Officer of IL&FS Environmental Infrastructure & Services Ltd. He has been a member of various Expert Committees of the Government of India (MoUD, MoEF, MNRE, MST, CPCB). He was Chairman, Expert Committee, MoUD for revision of the 'Manual on Municipal Solid Waste Management' (launched on 6th August, 2016), member of committee drafting the revised SWM Rules and C&D Waste Management Rules 2016 (MoEF &CC) and 'IRC Guidelines on Use of Recycled Construction and Demolition Waste in Road Works'. He was on the BIS Panel working on alternative aggregates (from processed C&D waste) and Municipal Solid Waste Management. He was member, 'Inter-Ministerial Task Force on Integrated Plant Nutrient Management using City Compost' (2005). He is a member of International Solid Waste Association (ISWA). Has over 35 years of experience in waste management, sanitation, renewable energy and financing of infrastructure projects. He

specializes in the field of municipal solid waste management, onsite affordable sanitation, biogas technology and decentralized waste water treatment system (DEWATS). He retired from HUDCO, under MoUD / HUPA, GoI in 2005 as Head of Waste Management Cell, involved with financing infrastructure projects, consultancy and execution of municipal and bio-medical waste management projects. He worked as consultant to ADB for waste management in South Asia (Nepal, Bangladesh, Sri Lanka, Thailand and India). He was also involved with IGES (Kanagawa, Japan) for inter-country study on waste management. Was consultant to WHO in China (Environment Management) and to Rotary International in Argentina, Bolivia and Paraguay to fight cholera. Was also involved with EU funded DEWATS project in China and India. He had worked as consultant to TERI on waste management, environmental issues and renewable energy activities. Mob.: 9891580717, e-mail: nbmazumdar@gmail.com

7. **A.N. Vaidya:** Atul Vaidya is a Sr. Principal Scientist & Head- Solid and Hazardous Waste Management Division, NEERI, Nagpur. (<http://www.neeri.res.in/division/solid-and-hazardous-waste-management-division/staff/dr-atul-narayan-vaitya>). e-mail: ar_vaidya@neeri.res.in; Mobile: 09860201457.
8. **Dr S Sundaramoorthy:** B E civil of 1965 of Madras University, M E Environmental, 1970 of Madras University with A V Raman Gold Medal and Ph D Environmental Engineering, 1992 of IIT Madras with C A Sastry Gold Medal. Started as Assistant Engineer in Tamilnadu PWD in 1965 and rose to Engineering Director of the Chennai Metrowater Board in 1994. Conducted R&D and guided Madras Refineries & Madras Fertilizers in implementing Asia's first city sewage to industrial cooling water plants of 17.5 MLD and 12.5 MLD in 1991. After retirement in 1997, project advisor for sewage reuse plants of GMR Vasavi power for 7.2 MLD in 1997-1999, Delhi international airport for 15 MLD in 2011-2013 and Mumbai international airport 2 plants for 10 and 4.5 MLD in 2011-2012 and L&T Shipbuilding Ltd. Has been project manager for many STPs, ETPs and CETPs in India and overseas. Notable is their first of its kind Oxidation Reduction technology for total recovery of reusable salt solution from spent textile dye bath in 2006 at Karur and Tiruppur textile CETPs for ZLD. He is (a) the first International Professional Engineer in Env Engg of Institution of Engineers, India, (b) Fellow of Royal Society for Promotion of Health, London and (c) invited Member of American Chemical Society, (d) past technical referee to the urban sanitation committee of the Lok Sabha and (e) Indian Team Leader and editorial consultant to the MoUD-JBIC-CPHEEO India country Manual of Sewerage and Sewage Treatment. Has interacted with WB, ADB, British ODA, French Water Club, Aus Aid, JICA, CDC and UNIDO. He has been honoured as the Distinguished Alumni of his Alma Mater, the College of Engineering, Guindy in 2014 and the Vishwakarma Award of CIDC in 2015. Currently a supervisor for Ph D programmes and

Technical Committee member of Govt. of Puducherry for AMRUT Projects. Mob.: 9445352434, e-mail: sonykuty@gmail.com.

c) State Experts:

9. **Sanjit Rodrigues:** Sanjit Rodrigues, Former Commissioner, Panaji Municipal Corporation; Managing Director, Goa State Infrastructure Development Corporation Limited (GSIDC) Introduced five point segregation in Panaji, cost effective and decentralized techniques, Mobile: 9923987069, Email: sanjit.rodrigues@gsidcltd.com.
10. **K. Vasuki:** K. Vasuki, Executive Director, Suchitwa Mission, Government of Kerala, Promoted usage of new and indigenous technologies to promote decentralized waste management in different cities of the state; integration of informal sector in waste management; currently working on developing policy/roadmap for the state to incentivise recycling. Email: kvasukiiias@gmail.com, Mobile: 7558017816.

d) MOUD Experts:

11. **Saurabh Jain:** Saurabh Jain is the Director (PHE) & Additional Mission Director (Swachh Bharat Mission), Ministry of Urban Development. He has served in various State Govt. departments in the past. Some of them being General Manager of Kerala Financial Corporation, Director of Kerala State IT Mission, Additional Secretary of Urban Development, Housing, IT, Additional Secretary of Power and Director of Uttarakhand Renewable Energy Development Agency, District Magistrate of Uttarkashi, Project Director of National Rural Health Mission (NRHM), District Magistrate of Alleppey, Additional Excise Commissioner of Kerala, Joint Commissioner of Sales Tax, Labour Commissioner of Kerala, Deputy Director of LBSNAA, Mussoorie. Tel: 23062374, Mob.: 9412054118, e-mail: saurabhjainud@gmail.com.
12. **V K Chaurasia:** V. K. Chaurasia, is Joint Adviser (PHEE) & Adviser(I/C) of Central Public Health and Environmental Engineering Organization, M/o Urban Development, GOI. He is having Graduation in Civil engineering and Post-Graduation in Environmental Engineering from IIT Roorkee and has over 23 years of experience in public health engineering and is currently involved in implementation of Swachh Bharat Mission (Urban), AMRUT & Smart cities Programmes. He was technical Expert Member of “Task force Report on Waste to Energy” published by NITI AYOOG in 2014. He was also Member Secretary of Revised manual of Municipal Solid waste management published in Aug 2016. He has been member of drafting committee of MSW Rules 2016 and C & D waste Rules 2016. He is presently actively associated in various programmes and policies formulation/ implementation in MOUD related to solid waste management, Water supply, Sewerage and Storm water drainage. Tel.: 23061144, Mob.: 9818225985, e-mail: vk.chaurasia@nic.in, vkchaurasia1969@gmail.com

13. **Rohit Kakkar:** Rohit Kakkar, Deputy Adviser (PHE), Central Public Health and Environmental Engineering Organization, M/o Urban Development. He has about 25 years of experience in water supply and sanitation in Army, wherein he had designed many water supply and sanitary components in various Army installations. Tel.: 23062039, Mob.: 8750622900, e-mail: rohit.kakkar@nic.in.