

## **Workshop on Energy and Resource Efficiency in Urban Water Management - Issues and Challenges with Best Management Practices: Proceedings**

Centre for Science and Environment (CSE) organized a regional workshop on “Energy and Resource Efficiency in Urban Water Management” on February 28, 2013 at the NEDFi Conference Hall, Guwahati, Assam. The workshop was supported by Urban Development Department (UDD) and Guwahati Development Department (GDD), Government of Assam as the local partner state. The workshop is part of various activities supported under the Comprehensive Capacity Building Programme (CCBP) – National Urban Renewal Mission, Ministry of Urban Development and Government of India.

### **Session 1: Inaugural Session**

**Mr Moloy Bora, Joint Secretary, GDD** welcomed the participants representing key functionaries from Water Resources, Public Health Departments, Development Authorities, Town and Country Planning Pollution Control Board and local bodies of Government of Assam and other Northeast states such as Arunachal Pradesh, Manipur, Mizoram and Tripura. The government officials were both policy makers and senior officials involved in planning and implementation of NURM projects in NE states. Among the other participants were faculty and researchers from IITG, Gauhati University, professional bodies, practitioners, consultants and NGOs involved in advocacy for sustainable urban water management in North Eastern states.

**Dr Suresh Kumar Rohilla, Programme Director, Water Management, CSE** presented an overview of the water and waste management in NURM phase I and the challenges in expanding the accessibility and availability of water supply and wastewater treatment to make the NE states and mission cities vibrant. He emphasized that one of the prime objective of NURM Phase II is to establish smart cities with carbon neutral and energy efficient. He set the tone of the meeting by setting out the objectives of the regional workshop as follows:

- To generate awareness about the best management practices (BMPs), state of art knowledge and reforms in the area of energy and resource efficiency in urban water management in NE states.
- To discuss with key stakeholders the concept, issues/barriers and experiences in mainstreaming of the reforms in the sustainable water management area
- To explore capacity building support required to implement projects aimed at mainstreaming environmental sustainability related reforms in the NURM schemes.

**Representatives of the States**, Manipur, Mizoram, Assam presented an Overview- of NURM water/wastewater projects giving the existing and proposed reforms/BMPs for mainstreaming energy and resource efficiency in their states.

**Capt Robin Bordoloi, Chairman, GMDA**, the chief guest of the programme addressed the participating giving the existing and proposed legislations for urban water management with special reference to Energy and resource efficiency in Assam.

**J. B. Singh, Principal Secretary, UDD, Govt of Assam**, the guest of honour thanked CSE to organise the regional workshop in Assam and spoke about the reforms that are necessary to be undertaken to bring efficiency in water and energy consumption.

## **Session: Energy and Resource Efficiency in Urban Water Management: BMPs and Case studies.**

**Pradeep Kumar, Director, ASE, Bangalore** gave a presentation on the Energy (& Water) Efficiency emphasising on audit in Municipal Water Management. He shared his vast experience and case studies with the participants and pointed out that even simple reforms undertaken in the operation of systems can bring about effective reduction in the energy cost of the projects.

**Dr. Virendra Paul, Director, SPA, Delhi**, gave a presentation on the role of water and resource efficiency in buildings. He brought out the importance of managing water and energy at community and building level.

**Dr Rajesh Biniwale**, NEERI, Nagpur talked on the Phytorid constructed wetland system and gave a brief on the design approach and performance characteristics of the various treatment methods. Highlighting the advantages and successful applications of the phytorid system for treatment of the waste water generated he accepted that constructed wetland system is the need of the day. A glimpse of the successful case studies where this technology has been implemented had also been presented.

**Prof. Arup Sarma, IITG**, gave a presentation on Ecological and Energy efficient practices for storm water management. He stressed on the point of how we as a community have to come up with best management practices to conserve our ecology with gaining efficiency in our outcomes.

### **Session 3: Panel Discussion- *Operational challenges and strategies for mainstreaming reforms in NURM projects* *Mainstreaming Water Resource conservation & Efficiency***

**Smt Trishna Gogoi, Town and Country Planning, Assam** talked on the *Role of design and urban planning* in mainstreaming water resource conservation and efficiency. He emphasised on the point that if the reforms were incorporated right at the design level of a project then efficiency can be achieved easily in the implementation part.

**Dr. Anamika Barua, IIT-Guwahati** talked on the Urban ecosystem services from ecological footprint perspective. She gave important information on how the urban development has its own ecological footprint and she emphasised that the solution to this matter will only come through community participation.

**Nilkamal Das, Research Scholar, Dept of Environmental Science, Gauhati University.**

**Babul Chakraborty, Consultant, Jal Board** talked on the planning of 24x7 piped water supply. He discussed the economics of the plan and the energy efficiency of the project. He also mentioned that maintaining 24x7 water supply will result in more energy efficiency as the the energy required in storing the water will be reduced to a great extent.

**V.K. Paul, Director, SPA, Delhi**, talked on the importance of architectural planning in the achieving efficiency with minimal energy consumption. He stressed on the point of considering the ecology of the area while planning for a certain project.

### ***Mainstreaming Energy & Resource efficiency in water quality, wastewater treatment incl. reuse and recycle***

**V.K. Paul, Director, SPA, Delhi**, talked on how important it is to include the energy efficiency during the planning phase itself of a project so that development in a sustainable manner can be achieved.

**Chandan Bhaduri, Consultant GMDA**, shared his experience of working with GMDA, and mentioned

a point that the contractors should also be trained in best management practices to achieve higher efficiency and desired outcomes of the projects.

**Dhajendra Nath Senior Environmental Engg, PCB, Assam**, mentioned how centralised STPs require huge amount of energy in their operation. He also expressed his disappointment on the fact that there is no type of sewage treatment system in running condition right now in the north east region.

**Dr. Mohammad Jawed, IITG**, talked on how decentralised wastewater treatment is the key answer to eradicate the sewage problem of the north east region. He also came up with good case study of the facultative lagoon type of wastewater treatment system built in IIT Guwahati for their sewage treatment which is running in great condition and treating water effectively despite minimal maintenance of the plant.

**A.K. Paul, Urban Management Officer, UDD, Assam**, spoke on the government role on this issue. He mentioned that an holistic approach is needed to tackle this issue and spread the word of reuse and recycle throughout the country and specifically in the north east region.

**Dr. Rajesh Biniwale, NEERI**, shared his experience with everyone to promote reuse and recycle after treating the wastewater. He also mentioned that the planner should focus more on the decentralised natural treatment systems to treat water and cutting down on energy rather than opting for electromechanical process which will increase the energy consumption of the plant in turn increasing the operation and maintenance cost of the system.

Hilly streams and Brahmaputra as natural resources are the identity of the Northeast regions that stretch over six Indian States – Assam, Nagaland, Manipur, Mizoram, Tripura and Meghalaya. Resource and energy intensive development in practice with the rapid urbanization is resulting degradation and pollution said the Guest of Honor and Principal Secretary, Urban Development Department, Government of Assam, Mr. J. B. Singh. He reiterated the need for energy and resource efficient systems in the management of water and waste in NE states particularly.

The chief guest of the programme, Captain Robin Bordoloi, Chairman of Guwahati Metropolitan Development Authority (GMDA) speaking at the workshop highlighted the challenges and potential specific to urban water management in the city of Guwahati. He added that the JnNURM Phase II focus areas require hand holding support for state agencies in developing - planning, designing of credible projects for funding from the central schemes.

The workshop concluded with the idea that there was a need of capacity building programmes to promote decentralised water-waste management systems and CSE definitely needs to get involved in the state programmes and train the government officials on the tools, techniques and policies on decentralised techniques of water management related to reforms of JnNURM.