

**CII National Conference on**  
**Pulp & Paper Industry: Evolving Landscape for Water & Wastewater Management**  
6 July 2021, Tuesday, Over Virtual Platform

Water is an important resource required in large quantities by the Pulp and Paper sector. The variability in water availability in various regions of the country has triggered the Pulp & Paper Industry to adopt measures for water conservation. However, the huge challenge is to scale-up good practices across mills, as well as continue to innovate through data driven analytics promoting technology identification, customization and implementation.

Cognizant of the challenges, CII Water Institute has been partnering with the pulp and paper industry over the last six years, to work together on improving water usage, setting new baselines and benchmarks that are both nationally as well as globally realizable. To reinvigorate debate, CII organized a Conference on “**Pulp & Paper Industry: Evolving Landscape on Water & Wastewater Management**” on 6 July 2021, over virtual platform. The platform/ aimed at enhancing awareness amongst industry members on available technological solutions, strategies for improved water use efficiency in the sector. The interaction provided insights on existing good practices, new technologies, for managing the resource effectively, while also enhancing competitiveness.

**Mr Sanjay Singh**, Conference Chairman & Group Head – Paper and Packaging , ITC Limited PSPD, observed Pulp & Paper Industry consumes 900million cum of fresh water annually which is equivalent to annually supplying of domestic water to the entire population of the country. According to him the conventional technologies employed by industry generates higher levels of effluents, therefore the challenge is to identify newer “Technologies” and “Best Practices” that can promote judicious use of fresh water as well as reduce, recycle and reuse waste water through implementation of cost-effective strategies. To optimize water use, he referred to the benchmark study which is being conducted by CII for the Pulp & Paper Industry. He urged the industry representatives to share with CII the duly filled in questionnaire for compiling benchmark. This exercise, according to Mr Singh will sensitize mills to set for itself benchmarks comparable to best in the world and to achieve high standards in water management. He expressed confidence that industry led benchmarks with a combination of technology, process and best practices will be crucial in reinventing their water trajectory. Complementing the efforts of various mills in the country for their proactive measure to conserve water resources, he stressed for bringing to the fore the measures initiated by small & Medium scale industry. In this connection he complemented CII Water Institute which has been engaged with industry members in providing customized and integrated solution such as Water Resource Mapping and Water Pinch Analysis.

**Mr Rajesh Sharma**, Chairman, CII – National Committee on Water and Chairman & Managing Director, Ion Exchange (India) Limited, made a strong plea to address toxicity and volume of wastewater in Pulp & Paper industry. He refreshed the memory of participant regarding the improvement in the quality of water during the period of lockdown on account of COVID-19. On the other hand, he applauded the

efforts of Pulp & Paper industry which voluntarily evolved norms for water usage and quality of effluents discharge leading to 40%-50% improvement in their specific water consumption. He however, conceded water consumption in Agro-based mill and small & medium scale mill remains an area of concern. According to him, the main reason for high consumption of fresh water in Pulp & paper industry is attributed to low cost, easy availability, and existing mindset. For optimizing water consumption, he stressed for undertaking water audit, adopt emerging technologies, subject wastewater to requisite treatment & further reuse and evolve norms/standards which are comparable to the best globally. He cautioned in the advent of a water crisis the industry would be severely hit as drinking and agriculture would be prioritized. Therefore, he felt industry needs to recognize that economizing on the use of water is an essential ingredient not only for ensuring sustainability of its operations but also in its own enlightened self-interest.

**Dr Manoj Kumar Gupta**, Director, CPPRI, provided an overview of the major water guzzling activities in the mills (raw material preparation, pulping, pulp washing & bleaching, paper machine and utilities), reason for large water consumption (use of mixed raw material, low level of technology & equipment, lack of optimized process condition, use of low capacity multiple paper machines, variation in variety of end product hinders reuse/recycle, low cost and mental block) and challenges encountered in conserving water (reduction in fresh water consumption, build up – TDS/ BOD/COD/Color, restrict reuse/ recycling of backwater/treated effluent, efficacy of ETP in complying with discharge norms and achieving ZLD). He also summarized the improvement in specific water consumption achieved by Wood Based Agro Mills, RCF W&P mills and RCF Kraft Mill over a period . According to him technological adoption in terms of – process upgradation with state of art technology, collection & segregation of pollution & less pollution streams, EOP treatment methods to make treated effluent reusable in process and tertiary treatment & kidney technologies have been beneficial for the sector. He also shared some practices adhered to by the industry for water & wastewater management which includes- Installation of flow meter on borewell and distribution pipes; installation of Fiber Recovery units; Optimization of shower nozzle diameter; Installation of High Consistency pulper; Installation of Equalisation tank; Installation of Diffused Aeration; Tertiary Treatment Options; Creation of ETP Lab Infrastructure; Installation of Separate Energy Meters at ETP; and Installation of OCEMS –Online Continuous Environmental Monitoring Systems.

**Dr Sushil Gupta**, Member, Punjab Water Regulation & Development Authority (PWRDA), wished every stakeholder could be water positive by returning more water consumed/ extracted by them to the ecosystem. He briefly mentioned about the factors leading to rise in water consumption – burgeoning population, expansion in economic activity, pressure to grow more food (current capacity of food production is 200 MT which is expected to rise 450 MT in the next 30 year), application of technology for extraction, lack of benchmarks, looming climate change and more importantly lack of appropriate governance. He also expressed concern over the increase in export of virtual water from the country. Shifting his focus to the pulp & paper industry, which is a huge producer of wastewater has initiated measures to improve its specific water consumption but should strive to be at par with global standards. In this connection, he applauded the initiative of CII for undertaking

benchmarking to optimize water use. Water assumes importance for sustainability of industrial operation, therefore prioritizing investment for water conservation will yield dividends in the long run, said Dr Gupta. Thereafter, he highlighted some of the initiatives undertaken by PWRDA with respect to the concept of “Pani Bachao Paisa Banao” (Save Water Earn Money) incentivize electricity saving for farmers and levying volumetric charges for groundwater extraction by industry. The charges collected are used to implement water conservation measures in the State and rebate is extended to industry for conserving water, echoed the speaker. Going forward, according to him a slew of measures which includes – self monitoring by industry, Research & Development, water audit, reuse of treated water and improving water use efficiency will be imperative to manage the dwindling resources. According to him the time has come to perceive wastewater as a resource by ensuing recovery of products & subject treated water for industrial consumption and optimize water use.

**Mr Naresh Pal** Gangwar, Chairman, Central Pollution Control Board, Ministry of Environment Forest and Climate Change, Government of India observed norms are prescribed for discharge & treatment of wastewater, whereas norms for freshwater consumption is lacking for the pulp & paper industry. He outlined some of the environment challenges encountered by the pulp & paper industry – poor water management practices, use of obsolete technology, color, high TDS, Adverse BOD, low chemical recovery, lack of appropriate design & efficacy of ETP, non availability of laboratory and lack of trained manpower. He was very critical of the black liquor generated and then discharged into the waterbodies accounting to 80% of pollution from the sector. Mr Pal also mentioned about the charter based approach followed for the industries located in the Ganga basin with respect to water conservation, zero black liquor discharge and reuse & recycling. This has resulted in curtailment in water consumption by half and reduction in pollution load by more than half in the mills located in UP and UK, whereas augmented ETP infrastructure, tertiary treatment of wastewater for reuse & recycle, adoption of new technology and zero black liquor discharge has been ensured by industries in the Ganga basin, said the speaker. He further added, more than 15 mills are monitored on real time basis by CPCB in the basin. Realizing the challenges encountered by industry, he called upon them to take proactive measures to address the issue of water management.

**Mr Rajiv Ranjan Mishra**, Director General, National Mission for Clean Ganga (NMCG), Government of India, highlighted the importance of managing the freshwater and wastewater simultaneously. He was very critical of the mindset which has led to continued neglect of the water resources as evident from the 351 polluting rivers. In this context he informed that the next level of standards would be enforced stringently. Shifting his focus to NMCG which prioritized pollution abatement of pollution, rejuvenation of the river and maintain minimum ecological flows, according to him will ensure sustainability for catering demands for anthropogenic activities. He applauded the voluntary initiatives and willingness of 1000 polluting industry located in the Ganga basin in bringing about reduction in freshwater consumption, beefing up infrastructure for treatment and reducing discharge of pollutants. Referring to the “Reuse Framework”, he felt wastewater should be treated as a resource and even suggested a new nomenclature “used water” instead of wastewater. Overwhelmed by the efforts of the industry, he urged them to set a milestone to develop a model to

revive & restore water bodies in their vicinity. As a responsible industry it would be incumbent upon them to improve monitoring, adopt best practices and evolve a business model for reuse of wastewater, concluded the speaker.

*Key Message:*

- ❖ Mindset of stakeholders has negatively impacted the water resources
- ❖ Government should
  - Develop standards for freshwater consumption in industry
    - The MoEFCC will stipulate freshwater consumption norms for industries located in the Ganga basin
  - Incentivize water use for agriculture and industry
  - Handhold and extending financial incentives to industry to improve the water infrastructure
- ❖ Industry should
  - Improve specific water consumption
  - Adhere to benchmark which is at par with global standards
  - Reduce discharge of wastewater/ toxicity and monitor the health status of water bodies/ rivers in their vicinity
  - Explore use of treated water in its operation
  - Economizing on the use of water as it is essential for ensuring sustainability of its operations
  - prioritize investment for water conservation and strive for achieving water positive status
    - Within the fence
    - Beyond the fence