**Innovative Brine Concentration Membranes Enable Lower Cost MLD/ZLD Treatment.**

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Zero-liquid discharge (ZLD) is recognized for its benefits to preserve fresh surface waters by maximizing wastewater reuse and eliminating wastewater discharge, but it is generally found to be too expensive to be practical. Using Minimal Liquid Discharge (MLD) to reduce the volume of wastewater before resorting to thermal ZLD treatment is proving to be a more practical, cost- effective hybrid solution. MLD uses membranes to recover purified water and concentrate the wastewater contaminants. Membrane separation requires significantly less energy than thermal distillation. Operational data from Textile plants in Southern India practicing ZLD supports the costs benefits of implementing MLD and will be share. However, more is possible. Advanced membrane innovations recover more water in the MLD process and further reduce the volume of water needing thermal treatment to achieve ZLD. An introduction to these innovations and their projected impact will be shared.