

# Evaporation



## - THE FUTURE OF WASTEWATER TREATMENT

Evaporation is a quicker and more cost-effective alternative to reverse osmosis, chemical dosing and desalination in wastewater treatment applications. I-CAT offers innovative evaporation solutions for all industrial applications, including the removal of excess tailing dam water.

I-CAT technical manager Morné van Wyk indicates that the innovative evaporation system design incorporates proprietary water

purification systems and misting canon technology. “Our systems have been well received by the local market, and trials prove that the concept is feasible,” states van Wyk. The evaporation process can be carried out naturally in solar evaporation ponds, a slow process that requires a large surface area, or by mechanical evaporation machines. “Natural solar evaporation is often limited by land availability and the cost of constructing additional storage ponds, not to mention the added cost of clean-up and re-vegetation,” he continues.

According to van Wyk, evaporation machines can rapidly increase the evaporation process, with minimal footprint. “Space can be utilised up to

14 times more efficiently than ponds, as evaporation machines are compact, reliable and efficient, and can be transported to numerous sites.”

The evaporation machines can also be used as a low-cost addition to enhance evaporation on existing containment ponds, or to minimise new pond surface area. I-CAT currently offers two different types of evaporation solutions, namely:

### 1. Water atomising evaporators

Air is compressed via a fan through a tapered barrel, and propels controlled-sized water droplets that are created via nozzles. “This is best for larger areas where wastewater contains lower dissolved solids or minimal particulates. I-CAT has spent a considerable amount of time in research and development on evaporation solutions, and we are in

the process of introducing this option to industrial clients, as part of our value-added service offering,” adds van Wyk.

### 2. Water fracturing evaporators

Through this process, water is fractured through a high-speed fan and propelled into the air. This solution is best-suited for smaller areas where wastewater contains high volumes of solids and large particulates. “We are currently in the process of supplying this solution to two large projects in South Africa, both of which commenced in early 2015. I believe that this could lead to considerable growth for I-CAT moving forward, as we continue to develop practical and cost-effective solutions for specific challenges experienced by our clients,” he concludes.

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