

# Unlock the Potential of your Cooling Tower



**-20%**  
Fresh water



**-40%**  
Wastewater



**-60%**  
Chemicals



**0.5<sup>kWh</sup>/m<sup>3</sup>**  
Energy



**Easy to  
implement**

# Cooling system without CapDI

A cooling tower carries away heat through the evaporation of water. This water contains natural ions such as calcium, bicarbonate, chloride and sulfate. The ions do not evaporate and build up over time causing corrosion and scaling. To prevent this chemicals are added to the cooling water to try to manage and control the damage. Eventually the water degrades to such a point where it is discharged (blowdown) and the cooling tower is refilled with fresh water.



# Cooling system with CapDI

The CapDI system treats the water before it enters the cooling tower. CapDI will provide a reduction of up to 80% of the ions on the incoming stream. This allows the water to remain in the cooling tower up to five times longer resulting in lower overall water consumption and wastewater production. The decreased water consumption also means a reduction in the scale and corrosion inhibitors required to treat the water.



# The benefits of installing CapDI in a cooling system

## Sustainable

Cooling towers use large quantities of water and chemicals. A small cooling tower may use more than 3,000 m<sup>3</sup> of water per year – enough water for over 200 households.

As natural ions build up in the cooling tower over time, corrosion and scaling can become a problem requiring addition of protective chemicals to the cooling water. When the cooling water is discharged these chemicals are also released eventually ending up in the environment. CapDI can reduce the volume of water used, cut chemical usage and lower wastewater production. Ultimately the cooling tower operator benefits from reduced costs with increased protection for their equipment and the environmental benefits from reduced water usage and chemical discharge.

## Easy to implement

CapDI is simple to install. The cooling tower does not need to be adapted since CapDI is placed before the tower, treating only the incoming water. The cooling tower water treatment does not need to be adapted for this process because the composition of the re-circulating water remains unchanged.

Once installed CapDI is essentially risk-free since it does not change the chemical treatment program, the conductivity levels or the settings of the cooling tower. For cooling systems that face existing problems with corrosion and scaling, CapDI can also be used to reduce the overall scaling and corrosion potential of the cooling water by lowering the set-point in the tower while still providing savings.

## Cost saving

CapDI reduces operational costs of the cooling tower. CapDI can reduce the intake of fresh water by 20-40% and lower the volume of wastewater by up to 60%.

In addition the costly anti-scalants and corrosion inhibitor chemicals can be cut by 80%. This reduction in operational costs allows for a fairly quick financial payback of the CapDI system.