Circular solution helps Nestlé save water and energy in Brazil

**INSIGHT**

As the world’s largest food and beverage company, Nestlé is committed to preserving resources for future generations by:

- Reducing water across its operations
- Using sustainably managed and renewable resources
- Achieving its zero-waste goal

A Nestlé milk production plant in southeastern Brazil challenged its suppliers to develop improvement projects that would deliver energy savings and reduce water consumption and CO₂ emissions. In particular, the plant was looking for an economically viable way to reuse the condensate organic water (COW) stream generated by the production of powdered milk. Nalco Water presented a plan that was approved, implemented and delivered sustainability savings within six months.

**INNOVATION**

Nalco Water conducted studies and prepared a water map to identify potential uses for COW water recovery. A work plan followed, which led to the recommendation that the COW water be used as cooling tower make-up.

The solution required a novel approach: creating and installing customized pretreatment and heat recovery systems along with 3D TRASAR™ monitoring and control technology. This had a considerable impact on the plant, reducing costs as well as water and energy use, further supporting Nestlé’s ambitious sustainability goals.

**TECHNOLOGY**

- 3D TRASAR™ Technology for Cooling Water

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**ANNUAL SAVINGS**

**WATER**

- 175,000 m³ freshwater saved — equivalent to the annual drinking water needs of more than 159,000 people
- $13,500 in reduced water costs
- 25,000 m³ of wastewater effluent eliminated
- $140,000 a year in cost savings

**ENERGY**

- 14,500 GJ reduction in fuel consumption
- $100,000 in reduced energy costs

**AIR**

- Decreased CO₂ emissions by 496 metric tons per year — equivalent to the CO₂ absorbed by more than 22,000 trees a year

**TOTAL COST SAVINGS**

$253 THOUSAND ANNUALLY