



SUCCESS STORY

Al-Baha Chlorine Plant Improves Energy Efficiency with Variable Frequency Drives

Industrial facility reduces electricity costs for cooling tower operations.



Plant staff examine new VFDs for cooling towers.

Eng. Ravinder Arora (the facility's Deputy General Manager) notes that his company already knew it could improve facility systems, but found it hard to quantify expected benefits.

"With the project's assistance," he continues, "we were able to see the benefits (both financially and environmentally) of installing VFDs and make an informed decision to move forward."

The Al-Baha Company for Caustic Chlorine facility in Jordan's Al Hallabat Industrial Park has reduced both its energy costs and its carbon footprint by installing variable frequency drives (VFDs) on cooling fans, as suggested in a USAID-sponsored assessment.

The assessment recommended a variety of options for saving water and energy. Installing VFDs on the cooling tower fans stood out as having a relatively short payback period and generating significant long-term savings.

Al-Baha invested in two VFDs for two large fans (15kW each) for the on-site cooling towers. Each VFD cost 8,000 JOD. The price included a control unit and feedback thermo-sensor. The company projects that it will reduce its annual electricity consumption by approximately 75,600 kWh, which equates to a reduction of about 39,000 kg per year in CO₂-equivalent emissions.

"We expect to save approximately 7,000 JOD in electricity costs for the first year," says Eng. Ravinder Arora, the facility's Deputy General Manager. Furthermore, he notes that these savings will likely increase over time. "When the electricity tariff increases in 2015, the savings will be closer to 12,000 JOD for the year."

Eng. Arora concludes: "Now that the installation is complete for the cooling tower fan motors and we are realizing actual savings, we are considering the installation of VFDs on other equipment as well."

The Al-Baha Company for Caustic Chlorine in Jordan's Hallabat Industrial Park is one of 30 industrial partners working with USAID to reduce industrial pollution and conserve scarce water and energy resources – in ways that benefit the bottom line. The Water Reuse and Environmental Conservation Project examined water and energy use, material and waste flow, production processes, quality control, and other aspects of each facility's operations. The assessments suggested options for minimizing pollution and saving water, energy, and money. Costs and payback periods for various options were also analyzed.