

CASE STUDY

Al Baywa Greenhouse

Alain, UAE

“

The intelligent adiabatic **Smart Cooling™** system reduced electricity consumption by **15%** and boosted cooling capacity by **17%** on average at the Al Baywa Greenhouse in the Alain, UAE”



SOLUTION

To prevent the overloading of the plant’s cooling equipment, installing the **Smart Cooling™ PRO 10** system was a pressing need. **Smart Cooling™** would allow the Carrier 30XA1702 chiller to produce more cooling capacity and operate more efficiently, even in extreme heat.

In 2021, the Al Dahra BayWa greenhouse equipped their cooling facilities with the intelligent adiabatic **Smart Cooling™** system. **Smart Cooling™** lowered the air temperature flowing into the chiller, boosting its cooling capacity and significantly reducing electricity consumption.

RESULTS

Testing was conducted in July of 2021. The report submitted by Du Al Qudra technical staff indicates that after the installation of the **Smart Cooling™** system, the cooling equipment produced noticeably more cooling capacity: **17%** on average. Electricity consumption dropped to around **15%** on average.

The return on investment (ROI) period of the **Smart Cooling™** system for this project is of only 21 months.

Test results show that the intelligent adiabatic equipment **Smart Cooling™** increased chiller performance by, on average, **15%** during 24 operational hours.

CHECKED AND TESTED FOR PROVEN RESULTS

Efficacy assessment has been conducted and validated. Testing was performed with BTU liquid flow and temperature meter RIF600 and Eniscope energy monitoring equipment.

CUSTOMER

The Al Dahra BayWa greenhouse is essential to help the UAE achieve sustainable food production and food security for its citizens. The food industry is taking tremendous steps to import new technologies, innovative concepts and advanced expertise, all considered to be the basis for sustainable food security, and are among the pillars of food security strategies. This strategy includes plans and initiatives to promote locally grown, technology-based foods.

CHALLENGE

Al Ain is located at the border of the UAE with Oman, about 120 kilometers south of Dubai. The city has a hot desert climate, featuring long, extremely hot summers and warm winters. In Al-Ain, the mean annual rainfall is 96 mm and the average relative humidity is **60%**.

The challenge was clear: reduce electricity consumption of the chiller during heat season, boost its efficiency and ensure a constant, stable operating mode.

