

Smartcool Performance Report

JW Marriott Hotel
Miami, Florida, USA



JW MARRIOTT®
HOTELS & RESORTS

Smartcool's energy efficiency solutions achieved the following results during a project at this hotel:



The Energy Efficiency Project

JW Marriott Hotels represents the most luxurious of the Marriott brand accommodations, with 39 hotels worldwide. Marriott aims to be a global hospitality leader, demonstrating responsible social and environmental values. In the UK, Marriott has been ranked 7th in the Sunday Times' "Best Green Companies" list. In the USA, Marriott continues to demonstrate its dedication to sustainable operations, gaining the Energy Star label for 275 of its hotels across the country. Smartcool's work with JW Marriott is another step towards expanding this impressive performance record.



Smartcool installed the ESM™ to optimize the compressors in 2 Trane single compressor centrifugal chillers (model # RTHC101FOE). The chillers provide vital air conditioning to maintain the comfort of guests at the hotel.

Over an eight week period from May to July 2010, the ESM™ units were switched between ON and OFF mode to gain comparative energy usage data. Each chiller had an ACR SmartReader Plus3 installed to monitor the energy consumption of the compressors both with and without the ESM™ units in operation. These loggers took data samples every 8 seconds with an accumulated record every minute. This method is extremely accurate, providing 10,800 measurements per day during the evaluation period.



Smartcool Systems (UK) Ltd.
 6-8 Delta Park, Wilson Road
 Alton, Hampshire, GU34 2RQ UK

TEL +44 1420 544868
FAX +44 1420 544723
EMAIL officeUK@smartcool.net

Registered in England No. 2529370. Registered office as above.

The temperature performance of the chillers during the evaluation was also monitored using an ACR SmartReader Plus 2.

Project Results

The evaluation demonstrated an overall average reduction in electricity consumption for the air conditioning of 115,146 kWh per year, clearly attributable to the installation of the ESM™. This energy savings equates to a rapid return on investment of just 24 months, as well as a reduction of 70,449 kg greenhouse gas emissions.

These energy efficiency gains were made with no discernible impact on temperature or humidity performance of the chillers.

Smartcool's Energy Efficiency Solutions

Smartcool's green technology is specifically designed to reduce electricity usage (kWh) and demand (KW) of air conditioning compressors, while maintaining temperature and humidity performance.

Conventional controls, including the most sophisticated Building Management Systems (BMS), operate only on reaching pre-programmed fixed (static) values to switch compressors on, and off, or adjust capacity. Rather than replacing existing controls, Smartcool's ESM™ and ECO³™ interface directly with controls to optimize the compressor run time and achieve greater energy efficiency.



ECO³™

The ESM™ and ECO³™ use proprietary software to dynamically analyze compressor cycles, achieving an overall reduction in run time without causing over cycling. Energy efficiency gains are achieved without affecting cooling capacity, temperature requirements or manufacturer warranties.

Smartcool's products optimize the performance of the compressors which consume an estimated 70% of the energy utilized by the cooling system. By reducing the compressor run time through cycle optimization or load shedding, our products save energy both through lower electricity usage (kWh) and decreased demand (KW).



ESM™