

SMARTCOOL™

IMPROVE YOUR BUSINESS BY E³

ENERGY EFFICIENCY - ECONOMIC BENEFITS - ENVIRONMENTAL SUSTAINABILITY

Smartcool's Energy Saving Module (ESM)™ is a unique retrofit technology that saves energy on the compressors in air conditioning and refrigeration systems. Working in conjunction with existing equipment and controls, the ESM™ maintains pre-set temperatures without causing over-cycling and reducing compressor run time by up to 30%.

Smartcool clients confirm electricity demand and consumption savings in excess of 20%, giving them a rapid return on investment and reducing their carbon footprint. Here's just one example of the savings that can be achieved with Smartcool:



CASE STUDY: DATA CENTER

BANGALORE, INDIA

INSTALLED 2009



Dell is one of the largest computer development companies in the world, and a Fortune 100 multinational corporation. Dell International Services India Pvt. Ltd. is the national branch of the company's customer service operations within India. With data centers and other facilities around the country, DIS India is focused on reducing the high energy costs within their business.

ENERGY EFFICIENCY

230,400 KWH
Annual energy savings achieved
by installing the ESM™

ECONOMIC BENEFITS

21 MONTH
Return on investment

ENVIRONMENTAL SUSTAINABILITY

140,965 KG
= 310,781 LBS
Annual GHG emissions reduction

169 ACRES
Trees required to sequester the
same amount of GHG emissions
28 HOMES
Could be powered for a year with
the energy saved

EQUIPMENT

2 CARRIER CHILLERS & 3 YORK CHILLERS FOR A/C

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Savings achieved by the ESM™ are easily quantifiable. The unit can be switched between ON and OFF modes, allowing for a comparison of energy usage by the air conditioning or refrigeration compressors with and without the ESM™.

Smartcool can provide a standard monitoring and verification package to interested clients, which includes recording the energy usage and temperature performance of their existing equipment both with and without the ESM™ in the circuit. Smartcool will install energy data loggers to measure and record the KW, kWh and amperage used by the cooling system during a set evaluation period when the ESM™ alternated between ON and OFF. These data loggers take a measure every 8 seconds and are set to provide a date stamped printout every 6 minutes. Temperature loggers are also used to measure and record the controlled space temperature is maintained.

EVALUATION DETAILS

Dell International Services India operates several data centers within the country, all of which are crucial for the company's operations. The conditions in these data centers is quite challenging, as the very high ambient temperatures, high humidity and added load from all the heat producing equipment puts a significant strain on the air conditioning system. Despite these challenges, the ESM™ achieved excellent savings for the data center. Dell has now approved the ESM™ as a key cost reduction tool for its air conditioning systems, and is working with Smartcool's local distributor to roll the ESM™ out to other Dell facilities.



The ESM™ units were installed to optimize the compressors in the five chillers providing air conditioning to the facility. Smartcool's standard monitoring and verification process was initiated to determine the performance of the units over four weeks in June and July 2009. Data was collected as the ESM™ units alternated between OFF and ON modes. The energy savings shown below were achieved with no discernable impact on temperature.

ANNUAL ESTIMATED RESULTS

Annual Energy Savings = 230,400 kWh
Return on Investment = 21 months
GHG Emissions Reduction = 140,965 kg
or 310,781 lbs

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