SMARTCOOL™

IMPROVE YOUR BUSINESS BY E³

ENERGY EFFICIENCY - ECONOMIC BENEFITS - ENVIRONMENTAL SUSTAINABILITY

Smartcool's ECO³™ 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 ECO³™ maintains pre-set temperatures without causing over-cycling and reducing compressor run time. The ability to save energy on the heating and cooling cycles of compressor driven heat pumps, along with its quick installation, make the ECO³™ a highly economical solution.

Smartcool clients confirm electricity demand and consumption savings averaging 15%, giving them a rapid return on investment and reducing their carbon footprint. Here is just one example of the savings that can be achieved with Smartcool:

Case Study: Retail
Makati City, Philippines   Installed 2009

7-Eleven is part of the largest international retail franchise, with over 36,842 stores in eighteen countries around the world. The Philippines is one of the largest markets for 7-Eleven, with the first store opening there in 1984.

ENERGY EFFICIENCY

14.58%
Reduction in kWh usage

9,475 KWH
Annual energy savings achieved by installing the ECO³™

ECONOMIC BENEFITS

$1,706
Annual financial savings (US)

<24 MONTHS
Return on investment

ENVIRONMENTAL SUSTAINABILITY

5,797 KG
= 12,781 LBS
Annual GHG emissions reduction

7 ACRES
Trees required to sequester the same amount of GHG emissions

1 HOME
Could be powered for a year with the energy saved

EQUIPMENT
Two 5TR Air Conditioning Units

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SMARTCOOL™

Savings achieved by the ECO³™ 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 ECO³™. Alternatively, energy savings can be tracked by taking regular readouts off the screen on the unit.

Smartcool also provides 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 ECO³™ 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 ECO³™ 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

The Smartcool ECO³™ was installed on the two 5TR air conditioning units responsible for cooling the store. The ECO³™ units interfaced directly with the Carrier thermostat, and successfully maintained temperature and humidity requirements while making the store more energy efficient.

This sucessful test of the ECO³™ with 7-Eleven, has led the chain to begin a roll-out of the technology to fifty of its stores in Manila.

Over a four month extended test period, the ECO³™ units were switched between ON and OFF mode to gain comparative energy usage data. The clear display screen on the ECO³™ provided readouts on the run, save, bypass and override hours of the units, demonstrating that a daily average of 24 kWh was saved by the ECO³™ . Data loggers were also used to monitor the energy savings as well as temperature and humidity. These loggers confirmed the screen savings and demonstrated that the Smartcool technology had no discernible effect on the temperature or humidity of the store.

Annual Estimated Results

Annual Energy Savings = 9,475 kWh
Return on Investment = < 24 months
GHG Emissions Reduction = 5,797 kg
                          or 12,781 lbs