

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: PRIVATE RESIDENCE
PENTICTON, CANADA INSTALLED 2009

*Smartcool is presenting these results on behalf of an anonymous client.

ENERGY EFFICIENCY

1,376 KWH
Annual energy savings achieved
by installing the ECO³™

ECONOMIC BENEFITS

<36 MONTHS
Return on investment

ENVIRONMENTAL SUSTAINABILITY

842 KG
= 1,856 LBS
Annual GHG emissions reduction

1 ACRE
Trees required to sequester the
same amount of GHG emissions

EQUIPMENT
ONE FRIGIDAIRE 3 TON HEAT PUMP

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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 installation took place in a single family detached home in Penticton, Canada. An ECO³™ Single was installed on the Frigidaire 3-ton heat pump. This unit is responsible for cooling and heating the home when ambient conditions are above 0°C. Auxiliary heating would be responsible for heating the home at temperatures below 0°C.



The ECO³™ Single was installed in March 2008 to optimize the compressor in the home's heat pump. Over a 13 month period, the ECO³™ units were monitored to gain comparative energy usage data with the ECO³™ ON and OFF. The clear display screen on the ECO³™ provided readouts on the run, save, bypass and override hours of the unit, demonstrating energy savings of 26% kWh across the 13 month period. For a small heat pump, these savings are substantial.

ANNUAL ESTIMATED RESULTS

Annual Energy Savings = 1,376 kWh
Return on Investment = < 36 months
GHG Emissions Reduction = 842 kg
or 1,856 lbs

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