

# SMARTCOOL™

IMPROVE YOUR BUSINESS BY E<sup>3</sup>

ENERGY EFFICIENCY - ECONOMIC BENEFITS - ENVIRONMENTAL SUSTAINABILITY

Smartcool's ECO<sup>3</sup>™ 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 ECO<sup>3</sup>™ 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 ECO<sup>3</sup>™ 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: SUPERMARKET**  
PENTICTON, CANADA      INSTALLED 2009



Whole Foods Market is the largest natural and organic grocer in the southern Okanagan region of British Columbia, Canada. Offering high quality natural foods as well as a café and catering, Whole Foods Market has been serving the Penticton area for more than 22 years.

**ENERGY EFFICIENCY**

**30,675 KWH**  
Annual energy savings achieved  
by installing the ECO<sup>3</sup>™

**ECONOMIC BENEFITS**

**\$3,070**  
Annual financial savings (CDN)

**ENVIRONMENTAL  
SUSTAINABILITY**

**18,768 KG**  
= 41,377 LBS  
Annual GHG emissions reduction

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

**EQUIPMENT**  
7 REFRIGERATION UNITS, 2 AIR CONDITIONING UNITS

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Savings achieved by the ECO<sup>3</sup>™ 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 ECO<sup>3</sup>™. 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 ECO<sup>3</sup>™ 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 ECO<sup>3</sup>™ 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

Whole Foods Market was originally located in a smaller building, but upgraded to a 9,100 square foot facility in order to house its expanding product and service offerings. The performance of the ECO<sup>3</sup>™ (both Single and Dual models) was evaluated on seven refrigeration units and two air conditioning units. Together, these units provided cooling for the majority of the store.



ECO<sup>3</sup>™ units were installed in May 2009 to optimize the compressors in the refrigeration and air conditioning systems for Whole Foods Market. Over a four week period, the ECO<sup>3</sup>™ units were switched between ON and OFF mode to gain comparative energy usage data. The clear display screen on the ECO<sup>3</sup>™ provided readouts on the run, save, bypass and over-ride hours of the units, demonstrating that a daily average of 102.3 kWh was saved by the ECO<sup>3</sup>™ for the Market.

#### ANNUAL ESTIMATED RESULTS

Annual Energy Savings = 30,675 kWh  
Annual Financial Savings = \$3,070 (CDN)  
GHG Emissions Reduction = 18,768 kg  
or 41,377 lbs

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