

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, often 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: SUPERMARKET

WINCHESTER, UK

INSTALLED 2007

Sainsbury's
Try something new today

Sainsbury's Supermarkets is the longest standing grocery chain in the UK, serving over 18 million customers a week. Sainsbury's holds a market share of about 16%, making it a major player in the food retailer industry. With strong principles of environmental sustainability, Sainsbury's has initiated a major retrofit project to improve the energy efficiency of its stores.

ENERGY EFFICIENCY

150,380 KWH
Annual energy savings achieved
by installing the ESM[™]

ECONOMIC BENEFITS

£9,020
Approximate annual
financial savings

ENVIRONMENTAL SUSTAINABILITY

92,006 KG
= 294,850 LBS
Annual GHG emissions reduction

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

EQUIPMENT

7 REFRIGERATION RACKS

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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

In 2007, Smartcool launched an initial pilot project with at a Sainsbury's store outside Winchester, UK. Based on the positive results of this initial pilot test, Sainsbury's expanded the evaluation of the product to a further 7 test stores where equally impressive results were achieved.

Smartcool's ESM™ became the technology of choice for optimizing the efficiency of the refrigeration systems for many Sainsbury's stores, with a large roll-out beginning in early 2009. As more stores have adopted the ESM™, Sainsbury's operating costs have decreased while energy efficiency has been greatly improved.



For the initial pilot project the ESM™ units were installed in September 2007 to optimize the compressors in seven refrigeration racks. Smartcool's standard monitoring and verification process was initiated to determine the performance of the unit. Data was collected as the ESM™ units alternated between OFF and ON modes. The energy savings shown below were achieved with no discernible impact on temperature.

EVALUATION PERIOD RESULTS

ESM™ OFF = 3,339 kWh
ESM™ ON = 2,927 kWh
Average Daily kWh Savings = 412 kWh

ANNUAL ESTIMATED RESULTS

Annual Energy Savings = 150,380 kWh
Annual Financial Savings = £9,020
GHG Emissions Reduction = 92,006 kg
or 294,850 lbs

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