

Nomination of Smartcool International for the I-Star Award for Energy Efficiency

Every year, Smartcool's energy efficiency technologies provide existing clients around the world with a cost effective means of reducing their electricity consumption by 221,000 mWh and greenhouse gas emissions by 260,000 tons. The Energy Saving Module (ESM)[™] and ECO^{3™} are unique retrofit technologies that make air conditioning and refrigeration systems more energy efficient. On average, the ESM[™] and ECO^{3™} can reduce the energy consumption (kWh) of these systems by 15% and the base demand (KW) by 10%.

Smartcool's technology optimizes the natural properties of the compressors in air conditioning and refrigeration systems without affecting temperature requirements. Compressors consume approximately 70% of the energy used by these cooling systems, and cooling systems in turn use at least 15% of the energy consumed by most buildings. Smartcool's unique technology achieves greater energy efficiency in this area by interfacing directly with existing equipment, without affecting manufacturers' warranties and with no affect on temperature requirements. In a sector where most energy efficiency solutions involve replacing older equipment with the associated system downtime and major capital expenses, Smartcool is forging a new path.

The ESM[™] has made a major difference to the bottom line for businesses where cooling systems consume a great deal of energy and may be the one of the highest operating expenses. These include businesses such as cold storage facilities, data centers, hospitals, food services, large commercial real estate and bottling plants. For example, in a 2008 installation in a dairy processing plant in Barbados, the ESM[™] achieved an annual reduction of 166,413 kWh with a 25 month return on investment. The increased energy efficiency of this facility (by 20.24%) also reduced the annual greenhouse gas emissions of the dairy by 224,470 lbs.

One of the challenges Smartcool has faced, is finding a cost-effective energy efficiency solution for clients in colder climates where cooling may not be as great a concern as heating. The ECO^{3™} is a new product launched by Smartcool in early 2009 to help address this gap. It is a highly economical, small scale application of the same technology used in the ESM[™], with the significant addition of the ability to save energy on the cooling *and* heating cycles of compressor driven heat pumps. The ECO^{3™} provides an energy efficiency solution for businesses such as restaurants, supermarkets, schools, institutions, and wireless base stations with the potential for application in the residential zone in the future. A police station in Australia completed a trial installation of the ECO^{3™} in late 2008, and testing projected that annual energy usage would be reduced by 19,019 kWh (an 18.82% efficiency gain). The associated reduction in greenhouse gas emissions would be 25,654 lbs.

Third party testing has been undertaken by prestigious independent groups such as Oak Ridge National Laboratory and the University of Miami on behalf of Florida Power & Light; Smartcool's technology has emerged as a proven, effective and unique solution. The ESM[™] and ECO^{3™} have been installed in over 26,000 buildings in 28 countries to date. With an ever-expanding network of independent distributors, and a large client base including major corporations such as Tesco, Telstra, Sainsbury's, and Target, Smartcool is leading the way in retrofit solutions for HVAC and refrigeration systems.