

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 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: INSTITUTION

MAUI, HI, USA

INSTALLED 2008



Kamehameha Schools is the largest private landowner in Hawaii. Included in this endowment are three main campuses serving 5,000 students annually, and an additional thirty preschool sites serving 1,500 students.

ENERGY EFFICIENCY

36,827 KWH

Annual energy savings achieved
by installing the ESM[™]

ECONOMIC BENEFITS

< 36 MONTH

Return on investment

ENVIRONMENTAL SUSTAINABILITY

22,532 KG

= 49,675 LBS

Annual GHG emissions reduction

27 ACRES

Trees required to sequester the
same amount of GHG emissions

3 HOMES

Could be powered for a year with
the energy saved

EQUIPMENT

SEVEN PACKAGED CARRIER UNITS FOR A/C

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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

The Maui campus of Kamehameha Schools consists of elementary, middle and secondary school facilities set on a 180-acre property. Smartcool's ESM™ was installed on the seven Carrier packaged units providing air conditioning to two buildings in the elementary school area, including the main administrative center.



The ESM™ units were installed in 2008 to optimize the compressors in the air conditioning system. 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 discernable impact on temperature.

ANNUAL ESTIMATED RESULTS

Annual Energy Savings = 36,827 kWh
Return on Investment = < 36 months
GHG Emissions Reduction = 22,532 kg
or 49,675 lbs

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