CASE STUDY

EndoCool®

Hilton Food Group UK Headquarters

Cambridgeshire, UK

8.28 %

HVAC ENERGY SAVING

DATE OF INSTALL

March 2023

CARBON SAVING

4,853kg CO_2e

137 DAY PILOT

A proof-of-concept EndoCool pilot was conducted by food packaging giant Hilton Food Group at their UK headquarters in Huntington. The multi-category food production site produces, on average 2.75 million packs a week, supplying over 500 million meals to the UK consumers every year.
The chosen building was a smaller loop used for cooling during the food manufacturing process.

METHODOLOGY

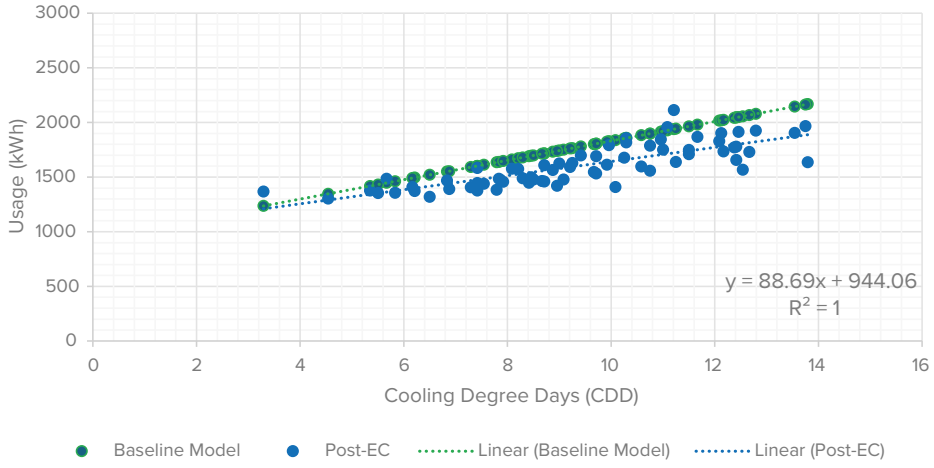
The chosen methodology utilises the sub-metered compressor consumption of the chiller and takes guidance from Option A of IPMVP (Retrofit Isolation – Key Parameter Measurement). Historical data for the site was used to model consumption relative to external temperatures measured using Cooling Degree Days (CDD).

This model and regression trend-line can then be used in comparison with the post-install data to determine the change in performance once EndoCool was installed. The regression statistics of this model can be found below.

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	944.0629394	23.6982	39.8368	3.5E-124	897.433	990.692	897.433	990.692
X Var 1	88.68965219	1.93617	45.8065	2.7E-140	84.8799	92.4993	84.8799	92.4993

RESULTS

The analysis of EndoCool was run between the 16th March 2023 & the 30th July 2023 (137 Days).



RESULTS continued
During the pilot period the modelled predicted consumption was 283,224kWh while the actual recorded consumption was 259,778kWh.

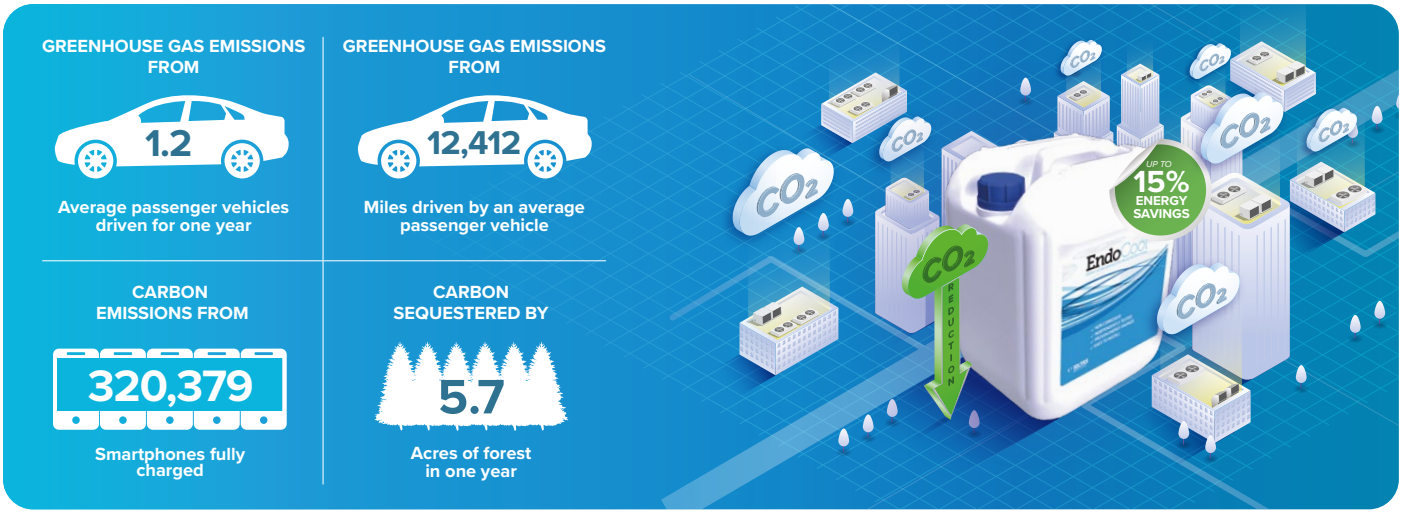
This is a 23,446kWh reduction in consumption which is an 8.28% saving. This saving is, as expected lower than comfort heating/cooling applications due to the continual demand requirement for the system.

ACTUAL CONSUMPTION	PREDICTED CONSUMPTION	DIFFERENCE	SAVING
259,778 kWh	283,224 kWh	23,446 kWh	8.28%

This project has an expected ROI of around 12 months.

1kWh of electricity releases approximately 0.207kg of CO2e into the atmosphere. Thus an saving of 23,446kWh is equivalent to 4,853kg (4.8 metric tonnes) of Scope 2 CO_2e emission avoidance.

This reduction can be visualised as:



(https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator).