

The background of the entire page is a photograph of a mountain range. The mountains are layered, creating a sense of depth, and are shrouded in a light blue mist or fog. The overall color palette is monochromatic, consisting of various shades of blue and white.

powerdown220

# Coolnomix Trial Report

Subway, Guisborough

reducing carbon emissions locally and globally



## About

The SUBWAY brand is the world's largest submarine sandwich chain with more than 44,000 locations around the world.

## Coolnomix Model

3 x AG-01 for air-conditioning use  
+  
3 x MID smart meter with GPS capability for remote monitoring

## Direct Annual Savings



3,822 kWh



1,089.27kg CO2



£611.52 (per store)  
20% energy saving  
ROI of 24 months

## Coolnomix®

Reduce the energy consumption of your air-conditioning and refrigeration without affecting the output you need. Our technology is maintenance free and can be easily installed by our qualified engineers with no disruption to your operation. You can expect up to 40% energy saving on your air-conditioning and up to 30% on your refrigeration.

*We keep your people, equipment and produce cool, and your energy budget from overheating*

## Client

The Guisborough site is part of a franchisee portfolio of 10 Subways located across the North East of England. The portfolio consists of drive-thru sites and eat in restaurants located in shopping centres.

The restaurant has three ceiling mounted air-conditioning units; two in the public area to cool the serving and seating area and the third unit is in the back of house food preparation area.

## Overview

The purpose of the trial was 'proof of concept' and to identify the potential for reducing both carbon emissions and direct energy consumption with the installation of COOLNOMIX - our unique patented intelligent thermostat.

COOLNOMIX was installed on two 5.3kW Toshiba units and one 6.1kW Gree air-conditioning unit. The local thermostats were set at 21C. Each air-conditioning unit was required to operate for different durations, and this is reflected in the captured data.

Emissis carried out a 56-day trial on three air-conditioning units at the Subway restaurant.

## Trial

On the 01/09/2020 three COOLNOMIX devices were installed and connected to three internal ceiling mounted downflow air-conditioning units.

To measure the energy consumed by the air-conditioning an MID smart meter, with remote connectivity, was connected to the external condenser.

Data recording commenced on the 01/09/2020 and the three air-conditioning units operated for:

Serving counter: A total of 36.9 days operation. COOLNOMIX (ON) was operational for 23.2 days. COOLNOMIX was bypassed (OFF) and the air-conditioning operated as 'normal' for 13.7 days.

Dining area: A total of 33.4 days operation. COOLNOMIX (ON) was operational for 20.7 days. COOLNOMIX was bypassed (OFF) and the air-conditioning operated as 'normal' for 12.7 days.

Preparation area: A total of 37 days operation. COOLNOMIX (ON) was operational for 23.3 days. COOLNOMIX bypassed (OFF) and the air-conditioning operated as 'normal' for 13.7 days.

# Results

## Daily

COOLNOMIX active (ON) reduced the total daily energy consumption by 20% (see Figure 1), providing a reduction of 10.3kWh per day.

### The saving is based on:

**Preparation area:** Energy consumption with COOLNOMIX (ON) 15.5kWh and COOLNOMIX (OFF) 18.1kWh or a 14% saving.

**Serving counter:** Energy consumption with COOLNOMIX (ON) 3.6kWh and COOLNOMIX (OFF) 9.4kWh or a 62% saving.

**Dining area:** Energy consumption with COOLNOMIX (ON) 22kWh and COOLNOMIX (OFF) 23.9kWh or an 8% saving.

## Daily energy consumption (kWh) and saving with COOLNOMIX

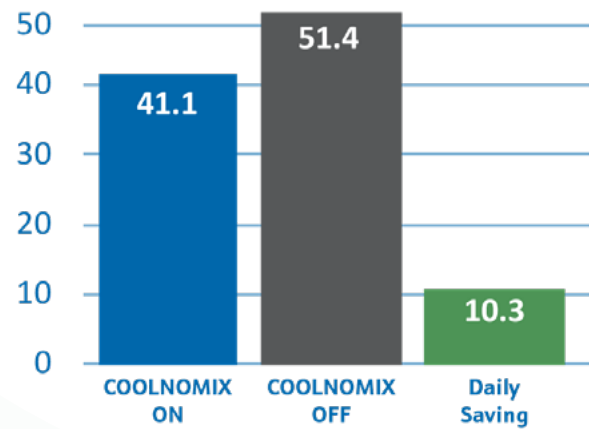


Figure 1: Daily energy consumption and saving

## Annual energy consumption (kWh) and annual saving with COOLNOMIX

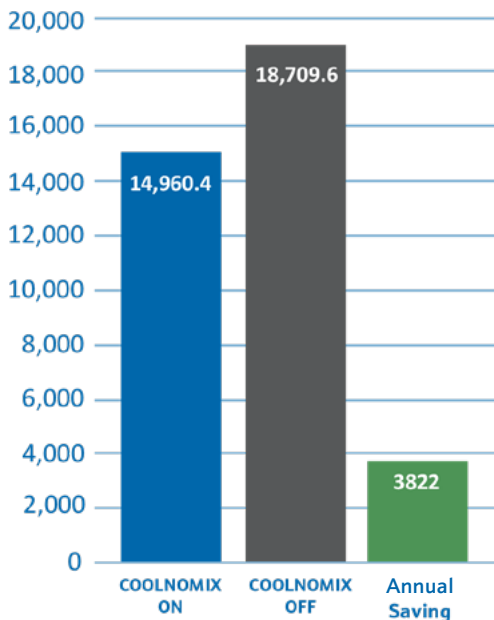


Figure 2: Annual energy consumption and savings

## Annual

The calculated 10.3kWh daily saving with COOLNOMIX (ON) equates to annual energy savings of 3,822kWh (see Figure 2) which is equivalent to a carbon emissions reduction of 1,089.27kg of CO<sub>2</sub>.

The annual savings were calculated on average daily consumption as showing:

COOLNOMIX (ON) consumption averages 14,960.4kWh  
COOLNOMIX (OFF) consumption averages 18,709.6kWh

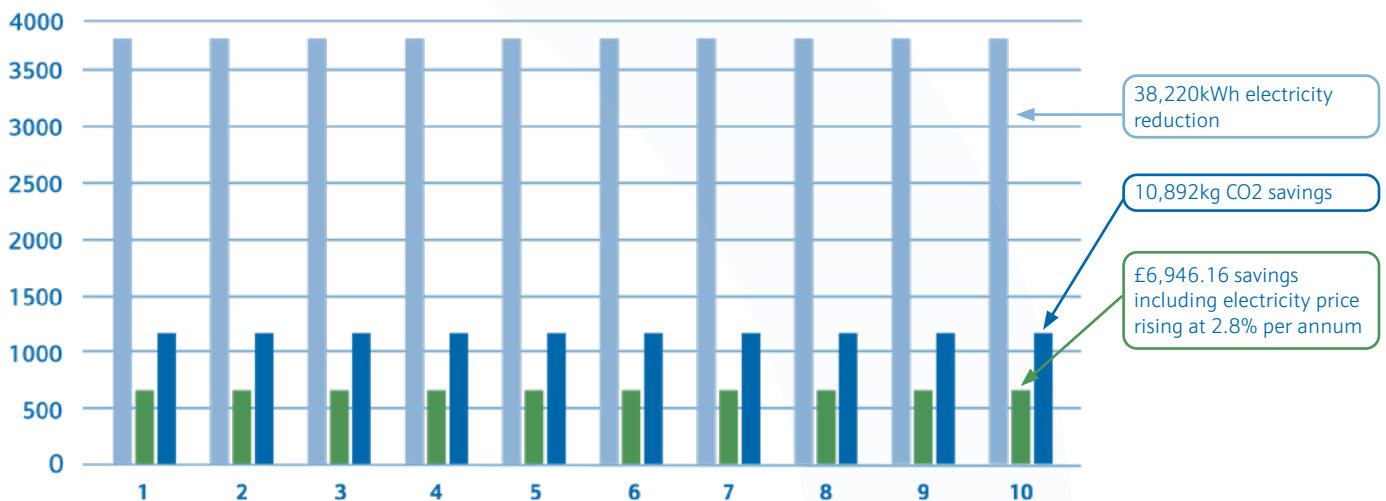


## Conclusions

The trial test proves the daily energy savings with COOLNOMIX and allows us to predict the annual carbon emissions reduction and energy savings. During warmer months, we expect increased savings when COOLNOMIX is active (ON).

Furthermore, we can provide an evidence-based projection for 10 years' benefit (see Figure 3). We have based cost savings on the trial site's electricity supply cost of £0.16 per kWh including CCL.

10-year benefit: kWh, CO2 and financial



## Recommendations

Full rollout across the ten North East of England sites, on a pro rata basis, COOLNOMIX will reduce carbon emissions by 108,927kg CO2 and reduce energy consumption by 382,200kWh. This equates to a cash saving of £69,461.60.

Over 10 years Subway in the UK with 1,700 locations could save:

**CO2 reduction**  
1,851.8tn

**Electricity reduction**  
64.97GWh



## We're ahead of the game

We deliver a powerful suite of solutions that reduce your carbon emissions, save you money with lower energy bills and generate revenue from being a more flexible energy user with the help of today's leading technology.

See our COOLNOMIX brochure and videos

See our other solutions

**COOLNOMIX**

Emissis | Exclusive European Distributor

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