



Coolnomix Trial Report

Global technology company, HQ site 1



Client

Global technology company

Coolnomix Model

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

Direct Annual Savings



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 company's UK headquarters span over 246,000 sq. ft. of office space across 3 buildings which house 41 standalone cooling units separate to the building's central cooling, which targets critical areas such as comms. rooms, cinemas, and briefing areas that all operate 24/7/365.

Overview

The purpose of the trial was 'proof of concept'. To demonstrate the potential for reducing both carbon emissions and direct energy consumption with the installation of COOLNOMIX - a unique patented intelligent thermostat, with a view to supplying and installing COOLNOMIX across the EMEA air-conditioning portfolio which would significantly contribute to the company's carbon negative goal.

Emissis carried out a 32.2-day trial on one air-conditioning unit within the rear of the projection room.

Trial

On the 13/10/2020 the COOLNOMIX device was installed and connected to a server room air-conditioning unit. The device was switched either on/off weekly, with a digital timer, during the trial period. The times and energy consumed are available in the 4-hourly data report.

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

Data recording commenced on the 13/10/2020. COOLNOMIX (ON) was operational for 436 hours (18.2 days). COOLNOMIX was bypassed (OFF) and the air-conditioning operated as 'normal' for 336 hours (14 days) until 14/11/2020.

During the 32.2-day trial, the metered half-hourly and 4-hourly data was collected and analysed. All the information is available on the Emissis cloud platform as well as the two appendices as supporting evidence.

Results

Daily

COOLNOMIX active (ON) reduced daily energy consumption by 37% (see Figure 1), with a reduction of 1.8kWh per day.

The saving is based on the air-conditioning using 4.86kWh daily with COOLNOMIX inactive (OFF) and 3.08kWh with COOLNOMIX active (ON).

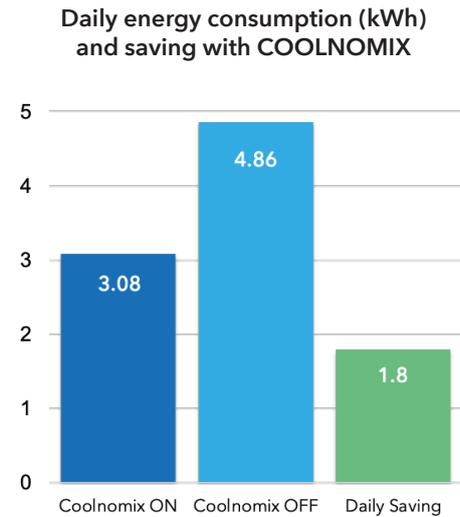


Figure 1: Daily energy consumption and saving

Annual energy consumption (kWh) and annual saving with COOLNOMIX

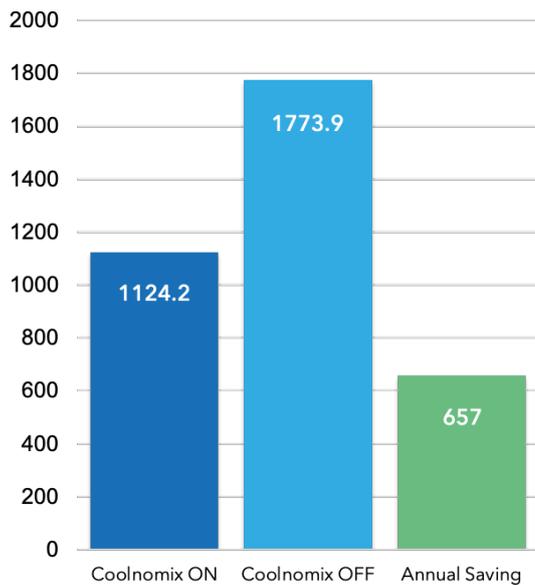


Figure 2: Annual energy consumption and savings

Annual

The calculated 1.8kWh daily saving with COOLNOMIX equates to annual energy savings of 657kWh (see Figure 2) which is equivalent to a carbon emissions reduction of 187.25kg of CO₂.

The annual savings were calculated on average daily consumption showing:

COOLNOMIX (ON) consumption averages 3.08kWh
COOLNOMIX (OFF) consumption averages 4.86kWh

COOLNOMIX will reduce your carbon emissions by 187.25kg of CO₂ per annum



COOLNOMIX

Conclusions

The trial proves the daily energy savings with COOLNOMIX and allows us to predict the annual carbon emissions reduction and energy savings.

Furthermore, we can provide an evidence-based projection for 10 years ahead (see Figure 3).

10-year benefit: kWh, CO2 and financial

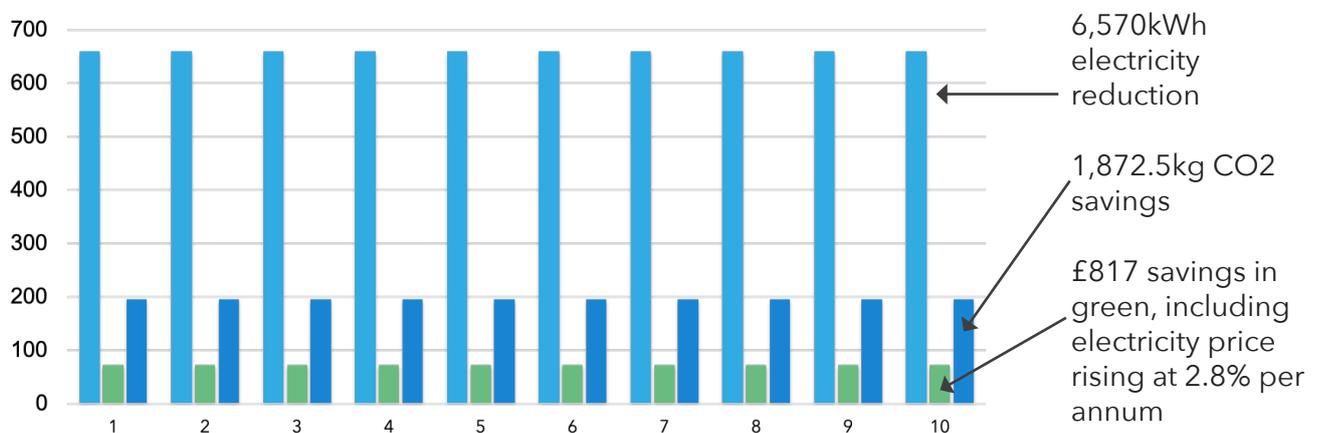


Figure 3

The 37% reductions at this site, alongside the 24% reductions at site 1, makes it clear to see that the energy consumption and CO2 emissions have been significantly reduced. The average reductions across our UK installations is 25.5%.

Post Covid-19, when this site returns to normal operation, we expect the air-conditioning units to be working harder and consuming more power - with COOLNOMIX active during these times we expect even better reductions with our device.

Appendix

All half-hourly data and its summary '4-hourly readings' is attached.

GREEN indicates COOLNOMIX active (ON) and the air-conditioning operating with COOLNOMIX 'optimisation'

RED Indicates COOLNOMIX inactive (OFF) and the air-conditioning operating as 'normal'

Notes

The COOLNOMIX device's ROI is dependent on the following criteria:

- KW rating of the refrigeration or cooling system
- Operational run hours
- Electricity cost per kWh



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

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