

powerdown220

# Coolnomix Case Study

University of Gibraltar

reducing carbon emissions locally and globally



# UNIVERSITY OF GIBRALTAR

The University of Gibraltar is a world-leading research and academic institution based in the British Overseas Territory.

## Coolnomix Model

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

## Direct Annual Savings



10,512 kWh



2,996kg CO2



£1,577/£394 per device  
39.49% energy saving  
ROI of 15.8 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 University of Gibraltar is committed to high-quality teaching and learning, world-leading research, academic freedom as well as to the sustainable development of Gibraltar and its importance in the Mediterranean region.

Their commitment to sustainability runs throughout all of their practices, from the management of the University's campus and facilities, through to community engagement, sustainable catering, teaching and learning.

## 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 - a unique patented intelligent thermostat.

Emissis carried out a 14-day trial on four air-conditioning units located in the Lower Atrium at the University of Gibraltar on behalf of the Government of Gibraltar.

## Trial

On the 27/06/2019 COOLNOMIX devices were installed and connected to each of the Daikin 6-14 kW rated units.

To measure the energy consumed four MID smart meters, with remote connectivity, were connected to the external condensers.

Data recording commenced on the 01/07/2019. COOLNOMIX was bypassed (OFF) and the air-conditioning operated as 'normal' for 168 hours (7 days) until 07/07/2019. COOLNOMIX (ON) was operational for 168 hours (7 days) from the 08/07/2019 to 14/07/2019 (7 days).

During the 14-day trial, the metered half-hourly and 4-hourly data was collected and analysed.

# Results

## Daily

COOLNOMIX active (ON) reduced daily energy consumption by 39.49%, (see Figure 1), providing a reduction of 7.2kWh per day per device.

This saving is based on using 77.21kWh over 168 hours with COOLNOMIX active (ON) and 127.61kWh over 168 hours with COOLNOMIX inactive (OFF).

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

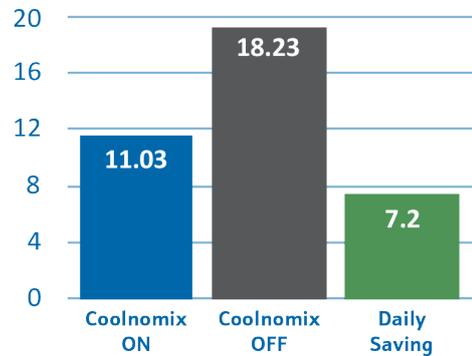


Figure 1: Daily energy consumption and saving

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

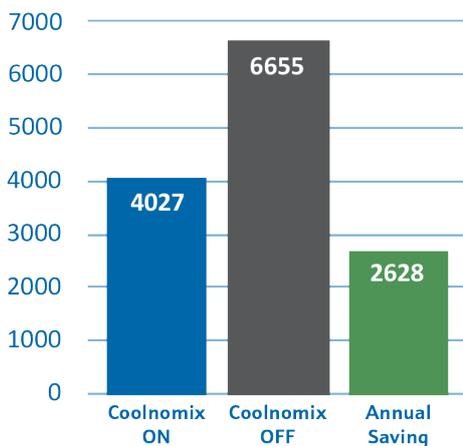


Figure 2: Annual energy consumption and savings

## Annual

The calculated 7.2kWh daily saving with COOLNOMIX equates to annual energy savings of 2,628 kWh (see Figure 2) which is equivalent to a carbon emissions reduction of 747kg CO<sub>2</sub> (per device).

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

COOLNOMIX (ON) consumption 11.03 kWh  
COOLNOMIX (OFF) consumption 18.23 kWh  
COOLNOMIX offers annual savings of 2,628 kWh

**COOLNOMIX will reduce your carbon emissions by 749kg per annum, per device.**

# Summary

COOLNOMIX was installed and the data proved the technology's worth against just four air-conditioning units at the University of Gibraltar with a saving of 39.49% on energy consumption.



# Contact

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## 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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