

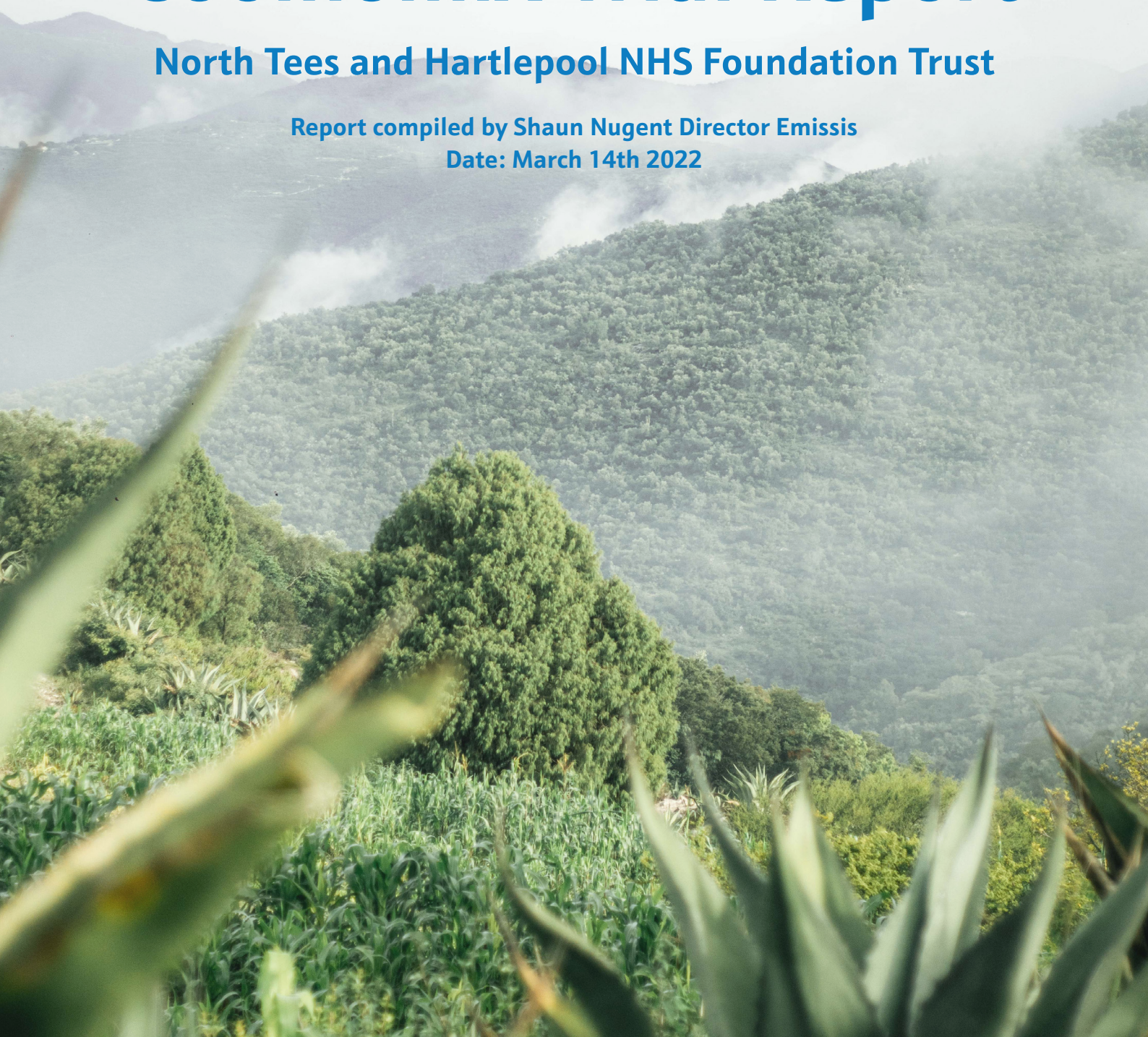


TUTUM
ENERGY

Coolnomix Trial Report

North Tees and Hartlepool NHS Foundation Trust

Report compiled by Shaun Nugent Director Emissis
Date: March 14th 2022



About:

The University Hospital of Hartlepool is a general hospital in Hartlepool, England. It provides healthcare to people living in southeast Durham.

The University Hospital of North Tees is a general hospital in Stockton-on-Tees. They are managed by the North Tees and Hartlepool NHS Foundation Trust.

Annual Savings:



8103 kWh representing a reduction of **33%** per year in energy consumption



4051kg or **4.051 tonnes**



Saving of £2,025.75

PAYBACK

14-15 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.

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

Overview

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.

Emissis and North Tees and Hartlepool carried out a 28 day trial on 4 air conditioning units at North Tees Hospital.

Trial

Coolnomix units were installed and connected to 4 air conditioning units at North Tees Hospital. To measure the energy used (kWh consumption) by each AC unit, Emissis installed 4 intelligent smart meters with remote monitoring connected to each AC units external condenser.

The units were installed and activated on Thursday February 8th and were set to run in weekly cycles with Coolnomix OFF - Coolnomix ON - Coolnomix OFF - Coolnomix ON mode for 4 weeks or 28 days in total. The pilot ran from 8.02.2022 until 10.03.2022.

During the pilot the metered half hourly and 4 hourly data has been downloaded and analysed. This data is available to the engineering team at North Tees.

Results

Daily

Coolnomix active (ON) reduced daily energy consumption by 33% reducing kWh consumption across the 4 pilot AC units by 22.2 kWh per day.

This saving is based on average daily consumption of electricity with Coolnomix ON and Coolnomix OFF over the 28 day period of the trial.

Daily energy consumption (kWh) and saving with COOLNOMIX

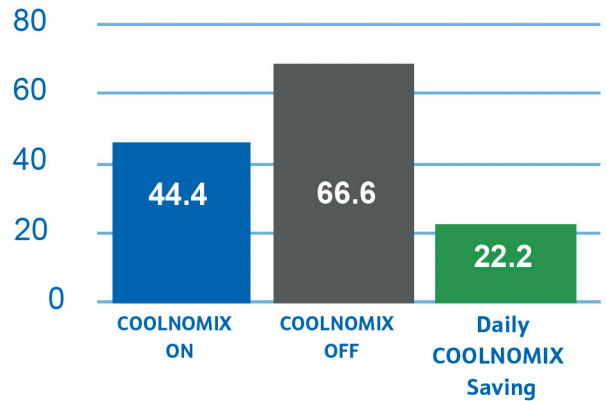


Figure 1: Daily energy consumption and saving

Consumption by AC unit per day (kWh)

	Coolnomix ON	Coolnomix OFF	Saving	%
Mattress Room 1	13.1	15.6	2.5	16%
Mattress Room C	9.1	18.8	9.7	52%
Wash Room	14.9	23.1	8.2	36%
EDU Dirty Side	7.3	9.1	1.8	20%
Total	44.4	66.6	22.2	33%

Annual

Energy Reduction & Savings Forecast (4 AC units)

	Energy (kWh)	Financial (£)	CO2 (kg)
Daily	22.2	5.55	11.1
Weekly	155.4	38.88	77.7
Monthly	675	168.75	337.5
Annually	8103	2,025.78	4,051.50

Conclusions

The pilot accurately confirms energy savings for kWh and CO2 reductions across the 4 units. The financial savings have been based on a trial site electricity supply cost of 0.25p per kWh. With average electricity prices set to rise beyond 0.30p per kWh over the next few months and with further inflation forecast over the coming years the savings model and Coolnomix payback period will only improve.

It is estimated that the savings model will also improve dramatically over the warmer summer months as the outside temperature increases making the AC unit work harder. All AC units are designed to work to a maximum outside temperature of around 32 degree C and will hold the room at, for example, 22 degrees ensuring that until the outside temperature is reached there is residual energy within the AC unit that Coolnomix will make savings on. In this way, we usually expect to generate additional savings (further 5 - 10%) in these warmer months.

For the purpose of this pilot we have based the following energy reduction and savings estimates on the Feb/March pilot and NOT factored in the inevitable additional savings that will be generated over warmer months.

Spread over an estimated AC estate at North Tees consisting of 100 suitable units the annual benefits of installing Coolnomix, based on the pilot results will be as follows:-

Energy Reduction & Savings Forecast (based on 100 Coolnomix units)

Year 1

- kWh (based on 5.5 kWh per day) = 202,575 kWh per year
- CO2 saving = 101,287 kg or 101 tonnes
- Financial = £50,643
- Rapid return on investment of under 16 months.

5 years

- Kwh = 1 million plus kWh hours saved
- CO2 = 500 tonnes plus saved
- Financial = £250,000 + saved

10 years

- kWh = 2 million plus kWh saved
- CO2 = 1000 plus saved
- Financial = £500,000 + saved

Coolnomix is compliant with TM44 part L2 building regulations.

Coolnomix helps hospitals meet their carbon baseline.

Coolnomix does NOT increase the amount of fluorinated greenhouse gases in a cooling system.

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

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