SUSQI PROJECT REPORT

Project Title: Radiology CTC Preparation and Energy Project

Start date of Project: October 2025
Date of Report: January 2026

Team Members:

- Samantha Chatwin Quality Manager
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Background:

The Kettering General Hospital (KGH) Radiology department performs over 27,0000 procedures a year, with patients attending the department multiple times. With travel and transport making up 14% of NHS emissions (1), reducing patients attending the Radiology department would have a big impact on emissions.

Patients scheduled for a CT Colonography (CTC) examination are required to complete bowel preparation prior to the procedure. Currently, this preparation is supplied in a glass bottle, which poses a risk of breakage if sent via postal services. As a result, on average 15 patients a week (780 per year) must attend the hospital in person to collect the preparation. This requirement creates a significant challenge, particularly for elderly patients who often make up much of the CTC cohort. Many of these patients face mobility issues and may need to travel long distances, adding inconvenience and potential barriers to care. After a pathway review, it was identified that we could improve patient experience and reduce unnecessary travel by introducing a new pathway, where patients received bowel preparation at the point of referral. This approach would streamline the process, minimise logistical challenges, and enhance overall patient satisfaction. We aimed to evaluate environmental, financial and social saving from this change to both patients and the organisation.

Radiology is one of the most energy-intensive departments within a hospital, primarily due to the operation of advanced imaging equipment and supporting IT infrastructure. For NHS England to achieve its Net Zero Carbon target, it is essential that energy consumption within Radiology is monitored and optimised. Healthcare equipment represents 19% of a hospital’s energy demand (2). For example, the Radiology department's use of energy is enormous with one CT and one MRI scanner using £12,000 worth of electricity a month. Our department currently operates three CT scanners, three MRI scanners, and over 60 Computers with approximately 100 display screens. These systems require significant power for imaging, cooling, and continuous availability, contributing substantially to the hospital’s overall energy footprint and energy costs. Identifying opportunities to reduce energy usage without compromising patient care is therefore a priority.

Specific Aims:

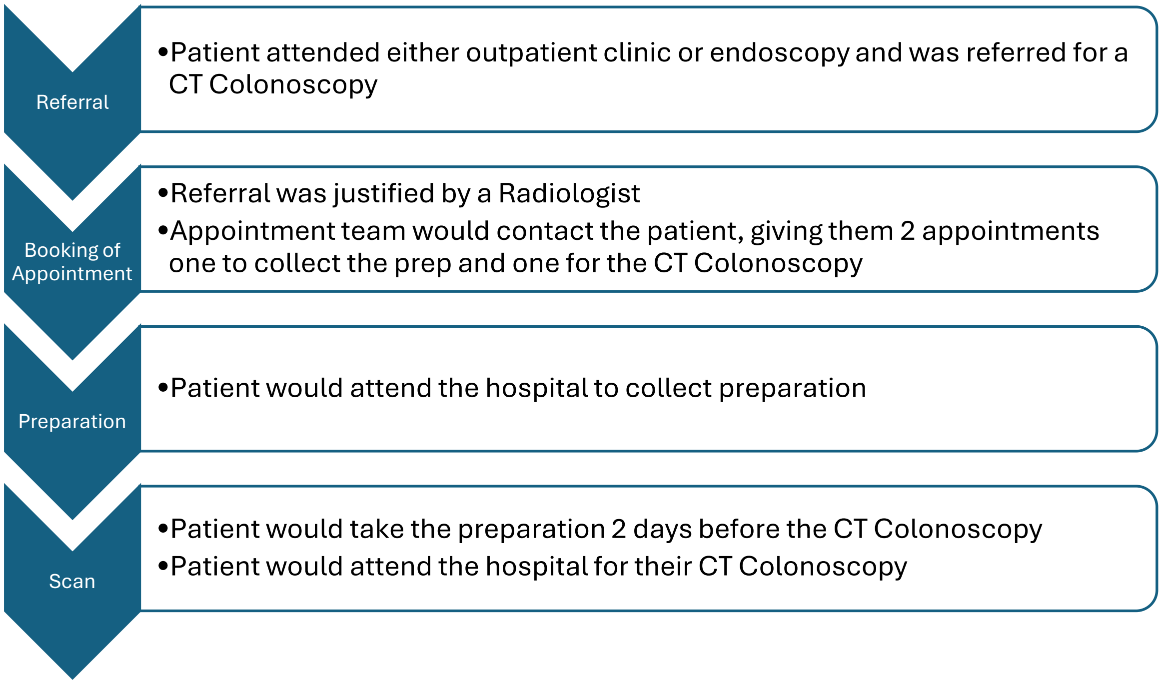
There were two main points to these projects

1. To identify the sustainability savings from implementing a same day dispensing of contrast for CTC pathway including environmental, financial and social outcomes
2. To identify current energy consumption and potential opportunities for energy saving within radiology

Methods:

CTC Project:

The original pathway was as follows:



To implement the new pathway, we collaborated with outpatient clinics, the endoscopy unit, and pharmacy to see if the bowel preparation could be provided to patients at the point of referral, rather than requiring a separate hospital visit.

The new pathway that was agreed was:

Referral
- Patient attended either outpatient clinic or endoscopy and was referred for a CT Colonoscopy
- Patient was given the preparation at the clinic and also contacted Radiology to make an appointment

Booking of Appointment
- Referral was justified by a Radiologist

Scan
- Patient would take the preparation 2 days before the CT Colonoscopy
- Patient would attend the hospital for their CT Colonoscopy

Patients having virtual appointments used the original pathway, with the added option of having their preparation posted. The collaboration included discussions with pharmacy about how clinics could stock and dispense the preparation. The pharmacy department also agreed that preparation could be posted to the patient. There were also discussions with both clinicians, clinic staff, and their leads about the best way to dispense the preparation and give the patient the opportunity to book their CTC appointment at the time of referral.

Energy saving:

The first step was to identify the Radiology departments current energy usage at KGH. An inventory of all major electrical equipment and computer workstations (system units and monitors) was compiled. With this project the IT department was able to access all computers remotely to see their power consumption and what level of power saving modes were used. We collaborated with our IT department to identify computer workstation energy consumption and potential methods for energy reduction. A detailed audit was completed, over a one-month period, to identify computer usage patterns, including idle times and out-of-hours operation of one reporting computer. Then a further audit of all the computers in the department was carried out of the computer usage patterns.

The CT scanner manufactures were contacted to identify specific energy consumption for our CT scanners. We requested to use hospital energy monitoring systems and equipment specifications to estimate power draw during operational and standby modes. The plan was for the KGH estates team to attach a power usage monitor to the CT scanner and monitored the power usage for two weeks prior to turning on the power saving mode.

The second step was to identify opportunities for energy savings. The IT department reviewed the use of the computers within our department. After analysing the audit data for the computer usage patterns, we engaged with staff to understand workflow and identify areas where power-saving measures (e.g., automatic shutdown or low-power modes) could be implemented without impacting patient care. The IT department reviewed one computer usage in detail to see how and when it was being used.

After consultation and approval from the entire Radiology department, we implemented the low power saving mode for all the computers in the department. The low power mode was able to put the computer into a sleep mode whilst the computer is idle. This mode can be activated after 20 minutes of inactivity. After 2 weeks of using the computers in low power mode we compared power consumption.

The financial savings were assessed based on current electricity tariffs. Data was analysed to quantify environmental, operational, and financial benefits of implementing energy-saving strategies.

For the scanners, an audit was completed over a one-week period, to identify CT usage patterns, during out-of-hours operation. After contacting the manufacturers, we discovered that the one of our CT scanners has a low power mode that was not being utilised. This mode would put the scanner into sleep mode when the scanner is idle for a set period. The KGH estates team planned to attach a power usage monitor to the CT scanner and monitor the power usage for two weeks prior to turning on the power saving mode.

There was an initial concern that the time taken for equipment to power back up, might delay patient care in emergencies. To minimise this risk, essential equipment was identified in key areas such as the emergency department and Radiology department, to be left active 24-hours a day. The time taken for computers to reboot was identified and the negligible time was deemed unlikely to negatively impact patient care.

Measurement:

Patient outcomes:

CTC Project:

Baseline data was collected over a two-week period (in October 2024) prior to implementation; to identify the number of patients requiring preparation for CTC, this was multiplied to obtain a yearly average. Post implementation data was collected over a two-week period (in October 2025), to determine the number of patients who received their preparation at referral and the benefits. There are no negative predicted patient outcomes from this project. The CTC project measured how the two-week GI pathway was affected by the change by measuring the referral to scan turnaround time.

Energy Project:

As essential equipment was left on 24/7, it is not predicted to have any negative patient outcomes.

Population outcomes:
There were no negative predicted population outcomes from the CTC or energy saving projects.

Environmental sustainability:

CTC Project:

We collected data about how the patient received their preparation for their CTC examination over a two-week period. Data on issuing patients' bowel preparation was recorded based on three scenarios as for a period of two weeks as summarised in table 1 and extrapolated over 1 year.

Table 1. Bowel prep collection modelled scenarios

Bowel Preparation Method	Assumptions
Collected at 2nd appointment	Additional journey
Posted	Avoided second trip emissions
Collected at referral	Zero emissions, as patients were already onsite

A process-based carbon footprint analysis was used to estimate the Greenhouse Gases (GHG) emissions associated with avoided patient travel and posting contrast results. Processes material data were converted into GHG emissions using carbon conversion factors from the 2025 UK Government Greenhouse Gas Conversion Factors database. Posting contrast activity data were converted into GHG emissions using parcel emission factor obtained from Royal Mail 2024-2025 sustainability report.

The emissions savings were translated into equivalent miles driven in an average car with unknown fuel using a factor of 0.3399 kgCO2e per mile, as published in the UK Government Greenhouse gas reporting: conversion factors 2025. This factor is inclusive of fuel and well-to-tank emissions.

Energy Project:

Energy usage data for Radiology workstations was supplied by the KGH IT team to support the identification of potential energy saving opportunities. Using remote monitoring software, the team recorded detailed energy consumption metrics. Initially, energy use for a single radiology reporting workstation computer and monitor was captured over a one-month period, covering active, idle, and sleep states. Following this, the IT department collected energy consumption data for all Radiology computers and monitors over a seven-day period before the implementation of sleep mode settings and for a further seven days after implementation.-usage data for Radiology workstations was supplied by the KGH IT team to support the identification of potential energy-saving opportunities. Using remote monitoring software, the team recorded detailed energy-consumption metrics. Initially, energy use for a single radiology reporting -month period, covering active, idle, and sleep states. Following this, the IT department collected energy-consumption data for all Radiology computers and monitors over a seven-day period before the implementation of sleep-mode settings and for a further seven days after implementation.

For the CT scanners the plan was for estates to attach a meter to the CT scanner to monitor the energy consumption pre and post low power mode implementation. However, this was not possible during the course of the project.

Economic sustainability:

CTC Project:

Baseline Radiographer time spent issuing the prep was calculated, and annual staffing costs were derived using PSSRU data. After project roll-out, the number of patients receiving bowel preparation at the first appointment, by post, or at a follow-up appointment was recorded to determine the resulting staff cost savings. The cost of posting the preparation was calculated pre and post project.

Energy Project:

The IT department identified the baseline computer workstation power usage and associated energy cost and usage. The reduction in energy usage post project implementation was calculated, to identify the financial savings.

As above, because we were unable to monitor pre and post project power usage for the CT scanner, we were unable to identify financial costs related to energy use.

Social sustainability:

CTC Project:

There were no predicted negative social outcomes from this project. The average travel costs for patients or carers to collect their bowel prep was calculated using HMRC mileage and fuel rates and allowances of £0.45 per mile. The average saving to patients or carers could then be calculated post project.

The average patient time saved from avoiding a return visit was also identified, including time taken to drive to the hospital, park the car, walk to the department, wait to be seen in department, collect preparation and travel home

Because most patients in the cohort are elderly, reducing unnecessary travel also alleviates pressures on their relatives and carers. This minimises the need for family members to take time off work, arrange childcare, and provide transport for appointments. We were unable to quantify this benefit during the project phase.

Energy Project:

The power saving project would not affect social sustainability.

Results:

Patient outcomes:

CTC Project

In the two weeks data collection post project implementation, the number of patients returning to the hospital to collect prep reduced by 70% from 20 to 6, meaning 84% of patients are either collecting prep at the point of referral or via post. See table 2. Annual extrapolation of this trend translated to a reduction from 520 cases to 156 whereas the number of preparations collected at referral increased by 400% from 104 to 520 cases as summarised in table 2.

Table 2. Comparison of methods for issuing prep to patients

Bowel Preparation Method	Baseline number	Post project number	Annual difference
Collected at 2nd appointment	20	6	364
Posted	12	12	0
Collected at referral	4	20	416

Over the year, from implementation in October 2024 this project also reduced the request to examination turnaround time (Figure 1) assisting Radiology to meet the national Faster Diagnostic Standard (FDS) and in turn improved the outcome for this patient cohort. Request to -to-examination time increased in October 2025 due to a shortage of CTC lists, but subsequently decreased following the introduction of additional lists.

Figure 1. Request to Examination Time

Energy Project

With the approval of a Radiologist, we changed one computer to a power saving mode to see if there were any disruption to their reporting. After a week of this power saving mode being utilised, there was no notable disruption to their reporting or effect on patient outcomes by making the change.

Population outcomes:

CTC project

While this project did not assess the potential impact on improving access to the lower gastrointestinal (GI) cancer pathway for patients from low-income, elderly, or disabled groups who may struggle with travel costs, this is an important area that could be explored in future work.

Energy Project

The were no adverse population outcomes identified from this project.

Environmental sustainability:

CTC project

Carbon emissions were calculated for providing bowel preparation to patients, based on the three methods outlined in table 1 previously. Total carbon emissions associated with all three methods were measured over a two-week period, both before and after the project was implemented and the results were extrapolated for the year.

Based on the Health Outcomes for Travel Tool (Health Outcomes of Travel Tool | Sustainable Healthcare Networks Hub), the average return journey to the Kettering General hospital was 15.75 miles. Using the carbon emissions from an averaged sized car of 0.3399 kgCO_2e/mile, the average carbon footprint from one return journey to KGH is 5.353 kgCO_2e

During the baseline two-week evaluation period a total of 20 patients returned to collect their preparation, generating a total emission of 107.1 kgCO_2e. When extrapolated to the year, this equated to 520 patients returning to collect their preparation and carbon emissions of 2783.8 kgCO_2e, (see table 3 below). Post-project, the number of patients returning to collect their preparation in the evaluation period, reduced by 70% from 20 to 6, with carbon emissions reducing to 32.1 kgCO_2e. This can be extrapolated to 156 patients per year or 835.1 kgCO_2e as summarised in table 3.

Table 2. CTC carbon footprint

Data period	No. patients collecting prep	Emissions per journey (kgCO_2e)	Total emissions (kgCO_2e)
2-week baseline	20	5.353	107.1
Yearly baseline	520	5.353	2783.8
2-week post-project	6	5.353	32.1
Yearly post-project	156	5.353	835.1

The number of patients who had their preparation posted to them remained unchanged pre and post project, with 12 patients over each two-week evaluation period, equating to carbon emissions of 1.98 kgCO_2e. This can be extrapolated to 312 patients per year and 51.48 kgCO_2e. The carbon emissions associated with postage are outlined in table 4 below.

Table 3. Carbon emissions from posting prep to patients

Data period	No. patients prep posted to	Emissions factor for postage (kgCO_2e)	Total emissions (kgCO_2e)
2-week baseline	12	0.165	1.98
Yearly baseline	312	0.165	51.48
2-week post-project	12	0.165	1.98
Yearly post-project	312	0.165	51.48

The carbon emissions associated with patients collecting their prep at the point of referral was deemed as zero. This was based on the presumption that patients were already onsite for their assessment, and a separate journey was not required. The number of patients collecting their prep at the point of referral increased by 400% from 4 to 20 in the two-week evaluation window, this can be extrapolated to an increase from 104 per year to 520.

When considering all three of the above factors, the overall the carbon emissions for the two-week evaluation periods reduced by 74.95 $kgCO_2e$ (69%) and is modelled to reduce by 1948.65 $kgCO_2e$ per year as summarised in table 5. Post project 84% of patients were either collecting their prep at the point of referral or receiving it by post,

Table 4. Annual carbon reduction from the CTC project

Collection method	Emissions (kgCO2e)				
	2-week baseline	Yearly baseline	2-week post-project	Yearly post-project	Difference
Separate journey	107.07	2783.78	32.12	835.13	1948.65
Postage	1.98	51.48	1.98	51.48	0
Initial referral	0	0	0	0	0
Total	109.05	**2835.26**	34.10	**886.**61	**1948.65**

Energy Project

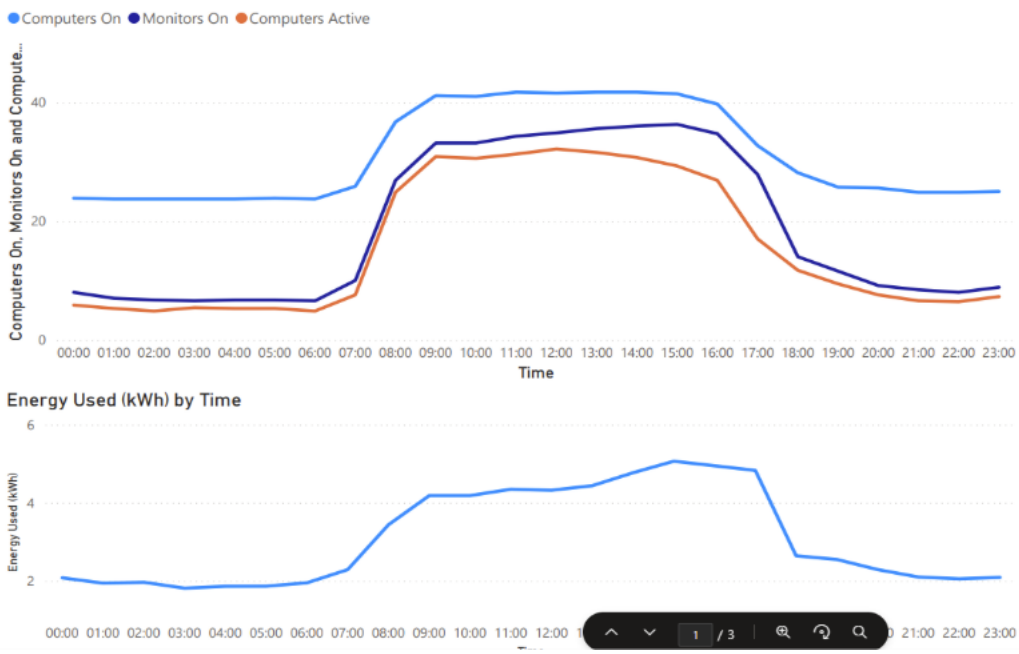
A reporting computer was selected and monitored for one month prior to the project, see table 6. It showed that the computer consumed 43.80kWh. It also showed the large amount of time that the computer was in idle mode with the potential of putting it into sleep mode, thereby using less energy.

Table 6. Usage of one reporting over a one-month period prior to implementation of the low power mode.

	Computer Active	Computer Idle	Computer Sleep	Monitor On	Monitor Sleep
Power (Watts)	190	70	5	20	0.3
Minutes In October	6281	16726	21514	7249	37391
hours per day in Oct/day	3.49	9.29	11.95	4.03	20.77
Energy Consumption (kWh)	19.89	19.51	1.79	2.42	0.19
Average monthly emission	4.88	4.79	0.44	0.59	0.05
Annual emission	58.57	57.45	5.27	7.13	0.56

With 23 reporting computers and 46 standard workstations in Radiology, we monitored over 7 days the energy usage of all devices in Radiology prior to implementing the sleep mode power setting, see Figure 2.

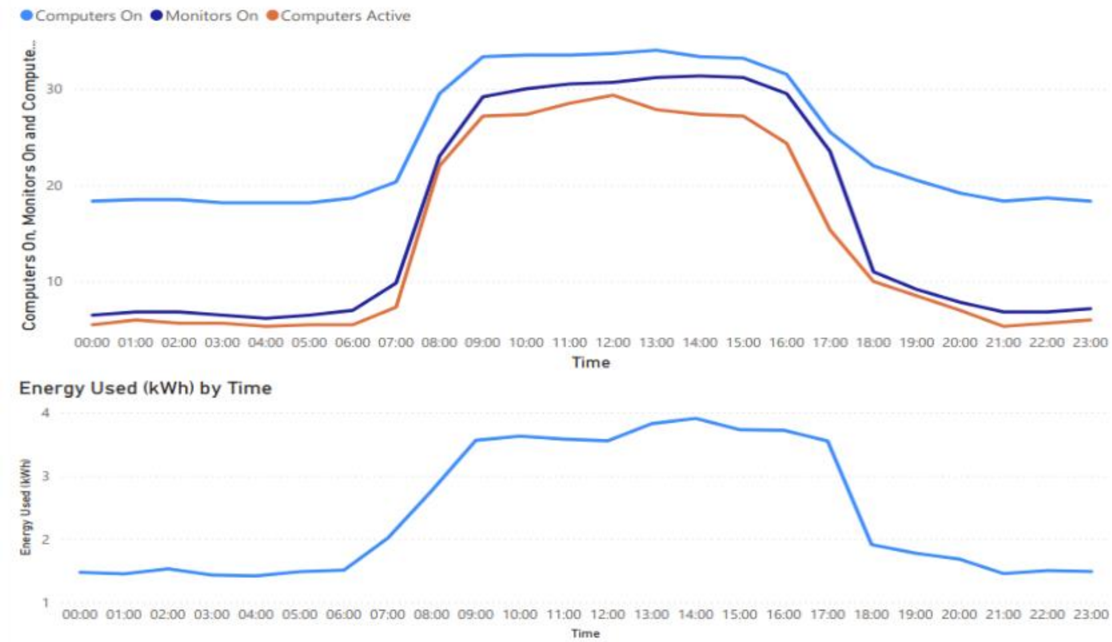
Figure 2 Computer use in Radiology over a 7-day period in December 2025



Analysing data from computer usage in Radiology prior to implementing the sleep power mode, it showed that the total average energy consumption of all the computers within the Radiology department was 74.01kWh per day. Following the implementation of the sleep power mode (see Figure 3), this was reduced by 16.1kWh per day to 57.9kWh. Modelled over a 12-month period, this would be a saving of 5,876.5kWh. Using the emission factor of 0.17700 kg CO_2e as published by the UK Government [Greenhouse gas reporting: conversion factors 2025,] this equates to a saving of 1,040kgCO_2e.

There was hope that the computer sleep mode would produce even bigger savings, however the 23 reporting computers in Radiology which have a higher power usage than standard workstations, have a conflicting power policy which stops them being put into sleep mode when they are switched on.

Figure 3. Computer use in Radiology over 7-day period in January 2026 post introduction of low power mode



As the reporting computers had a power policy preventing them from entering sleep mode, data was modelled based on the energy consumption for the sleep mode, to predict what energy use could be if the sleep mode was activated. Monthly computer energy usage per machine was modelled under different modes as shown in table 7 below. The average energy consumption for one reporting computer was 43.8 kWh per a month.

Table 7. Monthly energy consumption per computer device

	Computer Active	Computer Idle	Computer Sleep	Monitor On	Monitor Sleep
Average power consumption per machine	190	70	5	20	0.3
Average energy Consumption per machine (kWh)	19.89	19.51	1.79	1.21	0.19
Average monthly energy savings per machine switching mode (kWh)			18.05		0
Average annual energy savings per machine (kWh)			216.6		0
Average monthly emission ($KgCO_2e$)	4.88	4.79	0.44	0.30	0.05

Annual emission (KgCO$_2$e)	58.57	57.45	5.27	3.56	0.56
Annual kgCO$_2$e savings per machine by avoiding computer idle mode and activating monitors sleep mode			53.15		0.00
Annual kgCO2e savings per 23 high resolution computers machines by avoiding computer idle mode and activating monitors sleep mode			**1222.53**		

The modelled post project showed that switching computers and monitors from idle to sleep mode saved 18.05 kwh per month, per device from computers. Extrapolating these savings to a yearly savings would be 216.6 kwh per device and 4,981.8 kwh for the 23 reporting devices. From a carbon savings perspective, this would translate to 53.15 kgCO$_2$e per computer per year. Extrapolating these savings across the 23 computers in the unit, has the potential of yielding 1222.53 kgCO$_2$e carbon savings per year, as summarised in tables 7 and 8. Data was not modelled for switching the 77 non-reporting computers into sleep mode, there would be a significant additional reduction in carbon emissions if they followed suit.

Table 8. Monthly comparison of baseline monthly energy use and modelled post project energy use

	Computer Active	Computer Idle	Computer Sleep	Monitor On	Monitor Sleep	Monthly Total
Baseline monthly energy use per machine (kWh)	19.89	19.51	1.79	2.42	0.19	43.8
Modelled monthly energy use per machine (kWh)	19.89	0	3.25	2.42	0.19	25.75
Saving (kWh)						18.05

Economic sustainability:

CTC Project

The radiology department could save significant Radiographer time by issuing preparation at the point of referral. Currently the separate appointment takes around 20 minutes per patient, with Radiographers earning approximately £25 per hour, based on the PSSRU. During the baseline period, 6.6 hours of radiographer time was spent issuing the preparation, costing £167. This reduced to 2 hours post project saving £117. Over the course of a full year, this change would generate an estimated financial efficiency saving of £3,033 in Radiographer time. As the number of patients requiring their preparation to be posted did not alter, there was no change in Royal Mail postage costs or associated staff time.

Energy Project

Based on the actual energy consumption pre and post project as outlined in table 6, a saving of 16.1 kwh per day for all the computers in Radiology; over a year this saving would be 5,876.5kWh. With the trust being charged £0.182 per kWh this would mean over the year there would be a saving of £1,069.52per year.

Social sustainability:

CTC project

The majority of the social savings would be realised in the patients not having to:

- Spend time traveling.
- Spend money on fuel or transport (attending the trust multiple times).

Assuming most patients are elderly and require someone to bring them to the appointment, the average travel cost for collecting the preparation, based on the Gov UK mileage allowance, was £8.10 per patient. It is estimated that a return trip to collect the preparation would take patients a minimum of 2 hours, including travel, parking, waiting for the appointment and the preparation being dispensed. For the carers this could extend to 3 hours. Based on the HMRC National living wage of £12.71 per hours, this could be costing patients or carers between £25-£38 in lost earnings. By dispensing preparation at the point of referral this could be saving each patient £46 including travel and lost earnings.

Issuing the preparation at the point of referral saved 117 hours of staff time per year. This efficiency allowed staff to redirect their time to higher-value workload activities.

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Energy Project:

The power saving project had not identifiable negative affect social sustainability.

Discussion:

Both projects have demonstrated a combined potential yearly saving of 3171.18 $kgCO_2e$ emissions, which is the equivalent of driving 9,330 miles in an average car of unknown fuel. This would rise further if the standard computers in the department also had the sleep mode activated. They have also demonstrated a modelled financial annual saving of £4,103.

CTC Project

The CTC project demonstrated clear triple bottom line benefits, in terms of patient experience, environmental impact, and pathway efficiency. An estimated 1948.7 $kgCO_2e$ will be saved per year, along with £3,033 via staff time efficiencies, with patients and carers saving time, travel and lost earnings. The reduction in the referral to examination turnaround time is a significant improvement, aligning with Faster Diagnostic Standard (FDS) for imaging and contributing to better clinical outcomes.

Early engagement with outpatient and endoscopy teams was critical to success. These discussions ensured understanding of the potential benefits and facilitated smooth implementation. Collaboration with pharmacy to standardise prescriptions and enable clinics to store preparation was another key enabler.

However, challenges were identified. One risk was that patients might receive preparation before radiologist approval of the referral. Although this occurred only once, it required clear communication and disposal instructions. Another operational barrier was the inability to consistently book the CTC appointments at the point of referral due to administrative staffing pressures. While messages were left for follow-up, this delay reduced the intended pathway efficiency. A dedicated booking resource at referral would further enhance the pathway.

This project highlights how small, targeted changes can deliver measurable environmental and cost savings. While Radiology has limited opportunities for similar interventions, other departments across the Trust may benefit from adopting this approach. Future work should explore scalability and integration into wider outpatient processes.

Energy project

The power saving project demonstrated a simple saving that could easily be rolled out to the whole trust. There was hope that the computer sleep mode would produce even bigger savings, however some of the computers in Radiology have a conflicting power policy which is causing them to stay switched on when they're not in use. Going forward, this will be investigated more to see why the computers have this policy and see if it could be changed. This part of the project relied heavily on the support of the IT department with their overarching control of the computers within the trust.

The potential savings of 4,981.8 kwh of energy per year, equates to saving over £1070 in energy within Radiology alone based on the tariff of £0.812 per kwh. If this project was implemented trust wide, there are potential for even further significant savings.

In the timeframe available for this project, it was not possible to obtain accurate, locally measured figures for the power usage of the CT scanner. Despite this limitation, the evidence clearly indicates significant potential for environmental and financial savings through the consistent use of low-power operating modes. Hehencamp *et al.,* 2025 (4), reported that enabling low-power mode in a CT scanner reduced overall energy consumption by approximately 15%. Similarly, guidance from the COC (2) suggests that energy savings could be as high as 35% when appropriate optimisation measures are implemented.

As with any quality-improvement initiative, early engagement of key stakeholders is essential to ensure practical feasibility and long-term success. Implementing meaningful environmental monitoring can be particularly challenging on older sites, where existing infrastructure may not support modern energy-tracking technologies. Despite these constraints, this project has established a foundation on which further work can build. Continued collaboration with stakeholders will be crucial for quantifying usage and realising potential efficiencies.

Conclusions:

CTC Project

This project successfully demonstrated that small, targeted changes in clinical pathways can deliver significant benefits for patients, staff, and the environment. By introducing same day dispensing of bowel preparation for CT Colonography, we reduced unnecessary patient travel, improved the efficiency of the lower GI cancer pathway, and enhanced patient experience without additional cost to the Trust. These improvements align with national Faster Diagnostic Standards and support the NHS commitment to sustainability.

The project highlights the potential for similar interventions across other diagnostic and outpatient pathways, offering opportunities to reduce carbon emissions, improve patient convenience, and streamline processes. Future steps should focus on embedding this change into standard practice, exploring digital solutions for real-time booking, and sharing learning across departments to scale impact.

Overall, this initiative reinforces the value of integrating sustainability into quality improvement, demonstrating that environmental, economic, and social benefits can be achieved alongside improved clinical outcomes.

Energy Project

This again shows that small changes can deliver considerable savings in environmental and financial savings. Getting the whole trust on board makes a big difference to how a project works. Hopefully the low power computer mode can be rolled out to all computers in the trust, once departments can see what savings can be made without any changes to their work practice. Moving forward Radiology will keep working with the estates department to understand the power usage of the CT scanners and see if putting these into low power mode would make significant savings.

Together, these two small adjustments have generated more than £4,103 in savings and prevented over 3171 $kgCO_2e$ from entering the atmosphere. That is the equivalent of driving 9,330 miles in an average car of unknown fuel. It's a clear reminder that when sustainability is woven into everyday QI work, the whole team contributes to a greener, more resilient NHS.

References and Resources

1 En route to net zero - Sustainable transport and infrastructure purchasing solution puts NHS in top gear Checked 02/12/2025

2 13024.COC.GEP Guidelines2.indd Checked 02/12/2025

3 Travel — mileage and fuel rates and allowances - GOV.UK Checked 22/01/2026

4 CT Energy Consumption Savings From a Rapid-Reactivation Power Save Mode for Interexamination Idle Periods. Paul Hehenkamp, MD et al November 2025 American Journal of Roentgenology https://doi.org/10.2214/AJR.25.33951 Checked 26/01/2026

PSSRU Data https://kar.kent.ac.uk/109563/ Checked 30/01/2026

Appendices

Critical success factors

Please select one or two of the below factors that you believe were most essential to ensure the success of your project changes.

People	Process	Resources	Context
☐ Patient involvement and/or appropriate information for patients - to raise awareness and understanding of intervention **☐X Staff engagement** ☐ MDT / Cross-department communication ☐ Skills and capability of staff ☐ Team/service agreement that there is a problem and changes are suitable to trial (Knowledge and understanding of the issue) **☐X Support from senior organisational or system leaders**	☐ clear guidance / evidence / policy to support the intervention. ☐ Incentivisation of the strategy – e.g., QOF in general practice **☐X systematic and coordinated approach** ☐ clear, measurable targets ☐ long-term strategy for sustaining and embedding change developed in planning phase ☐ integrating the intervention into the natural workflow, team functions, technology systems, and incentive structures of the team/service/organisation	**☐ X Dedicated time** ☐ QI training / information resources and organisation process / support ☐X Infrastructure capable of providing teams with information, data and equipment needed ☐ Research / evidence of change successfully implemented elsewhere ☐ Financial investment	**☐X aims aligned with wider service, organisational or system goals.** ☐ Links to patient benefits / clinical outcomes ☐ Links to staff benefits ☐ 'Permission' given through the organisational context, capacity and positive change culture.

This template is adapted from SQUIRE 2.0 reporting guidelines.

Template References

- SQUIRE | SQUIRE 2.0 Guidelines (squire-statement.org)
- Home | Sustainable Quality Improvement (susqi.org)