
Executive Decision Report

Energy Smart Initiatives in Council Buildings Financing Approval Request

Decision to be taken by: City Mayor

Decision to be taken on/Date of meeting: 06/02/2025

Lead director/officer: Joanne Allen

Useful information

- Ward(s) affected: All
- Report author: Andy Williams
- Author contact details:
- Report version number: V1

1.Summary

1.1 Leicester City Council declared a climate emergency in 2019 in response to the growing threat of climate change and the opportunity to improve life for people in the city through taking action to tackle it. The council launched a strategy and action plan in 2020, which was updated in 2022 outlining seven main theme areas of focus. The action plan, referred to as the Climate Ready Leicester Plan (CRLP) was adopted by council on September 5, 2024.

One of the seven themes within the CRLP is “The Council” referring to the emissions originating from the Council’s estate, and tactics to reduce them. The Council is directly responsible for around 1.5% of Leicester’s carbon footprint from energy and fuel use. The Council’s operational emissions were just under 15,500t in 2023/24 with the sources being the buildings, staff travel, and the electricity needed for Leicester’s Street lighting and traffic signals.

Various actions have been identified to target reductions in each area, many of which are underway. 64% of the total emissions originate from the energy consumption of the Council’s operational buildings portfolio (not including schools). One of the key actions is to reduce energy consumption of the buildings with a program of retrofit measures, including updating building fabrics to provide insulation, decarbonising heating systems, implementing energy-efficient technologies, and reducing overall energy demand. Among the many benefits of implementing retrofit measures is the associated energy cost savings. While many of these initiatives involve significant upfront costs with long return periods (20-50 years), several offer a much quicker return on investment. It is within this rationale that the Clean and Green Scheme has been developed.

1.2 The council will call this programme ‘Clean and Green’ and this has been developed to focus on implementing energy efficient technologies that will reduce carbon emissions and save costs. The objective of the Clean and Green Scheme is to identify potential projects which qualify across our operational 310 buildings.

1.3 This report seeks approval to finance the first 44 projects identified including 25 lighting replacement (LED) and 19 solar PV installations. The report sets out the process by which the projects have been identified, provides the project and finance costings, together with all carbon emission reductions and operational cost savings calculated.

1.4 The first set of proposed 44 projects have a total capital cost of £2.02m. The first phase of works will commence during 2024/25 and will be managed by the Estates and Buildings Services division. Annual revenue savings totalling £392k will be achieved on the Council’s energy costs because of this investment, contributing to the council’s ongoing savings requirements.

1.5 The Clean and Green is an ongoing programme of works across our estate, further tranches will be brought forward for executive decisions as and when the feasibility of the additional sites are completed.

1.5 It is proposed that the Clean & Green Scheme is added to the 2024/25 capital programme as a spend to save initiative funded through prudential borrowing.

2. Recommended actions/decision

It is recommended that the City Mayor:

2.1 Approves the addition of £2.02m to the capital programme, financed from prudential borrowing (with £0.37m profiled for use in 2024/25 and £1.65m in 2025/26) to deliver the scope of work outlined in the pipeline document.

2.2 Notes the net annual revenue saving of £197k which will contribute towards achievement of the EBS savings target included within the Draft 2025/26 Revenue budget.

3. Scrutiny / stakeholder engagement

Strategic Director

Executive Team

Director of EBS

Finance

Legal

External contractors

Capital Projects Team

EBS Operations

Sustainability

Lead Members

Procurement

4. Background and options with supporting evidence

4.1 Within the operational estate, a significant amount of carbon reduction upgrades has already taken place such as the installation of 25 PV installations and 29 buildings with LED lighting upgrades. One example of this is St Margaret's bus station which became the first carbon neutral bus station in the UK with one of the largest photovoltaic (PV) arrays of any bus station in the UK.

4.2 To deliver the Clean and Green Scheme the council will need to adopt a phased approach to delivery due to volumes of buildings, their complexities and the resources required to deliver a project of this scale. To determine the best practice energy measures to propose, we refer to the UK Green Building Council's Guide to the Most Cost-Effective Measures to Reduce Energy Use. This guide includes 13 retrofit measures typically included in a whole building approach to reduce energy use. Only 6 of these measures have the possibility of achieving a ROI within the 5 years of which are outlined below.

4.3 Summary of most cost-effective retrofit measures meeting 5-year ROI (pre financing)

4.3.1. Low energy lighting.

Replacing old technology lighting such as fluorescent tubes and halogen bulbs with light-emitting diode (LED) alternatives, will reduce energy use and in some cases reduce the number of lighting units required (due to the higher number of lumens LED lighting produces).

4.3.2. Lighting controls.

The installation of lighting controls in the form of sensors and timers reduces energy consumption. These sensors include motion, daylight, microwave and timers for night lighting.

4.3.3. Solar Photovoltaic.

These systems generate electricity for the site which will in turn reduce the amount of electricity required to be purchased via the national grid. This renewable energy will also reduce our carbon footprint.

4.3.4. Building management system health check.

This health check consists of checking all heating controls, timers, thermostats to make sure that they match the timing of occupancy of each building and are set at the required temperatures for the particular use of the site. Lighting and ventilation timers and settings are also checked to limit out of normal hours use.

4.3.5. Pump motor replacement.

The replacement of electrical pumps reduces energy use through more advanced and updated technologies.

4.3.6 CO2 ventilation control.

Installing a CO2 ventilation control adjusts the air flow in a building dependant on CO2 levels therefore reducing the need to ventilate rooms using air conditioning and/or air handling when not in use.

At this stage, the proposed 43 sites include 4.3.1, 4.3.2 and 4.3.3. We endeavour to consider all listed technologies over time and include in future proposals.

4.4 To prioritise which buildings were considered, the following criteria was used:

4.4.1 Sites with the largest energy consumption.

The top 90 energy consuming buildings are responsible for over 90% of the total energy consumption for the council's operational sites.

4.4.2 Identifying what energy reduction opportunities were available at each site.

Site surveys have been carried out to capture the details of existing heating and lighting in situ, along with building operational behavioural patterns of the site and staff. Desk top surveys for potential PV arrays have been completed along with PV surveys prepared previously in Heat Decarbonisation Plan documents.

4.4.3 Greatest energy cost saving (£)

Using the six most cost-effective retrofit measures and the data collected, the estimated energy savings against the cost of replacement has been calculated.

5.5 The first batch of projects proposed within this document includes 44 sites listed to as the initial selection for the Clean and Green Scheme. The scheme will be funded through prudential borrowing with an expected programme life of 15 years.

5.6 The following tables set out the type of technology, cost, and CO2 emission impact.

Table 1

Summary table with asset, scheme description, cost (full list is shown in Appendix A)

Scheme	Number of assets	Cost £
Install PV arrays	19	1,396,020
Upgrade lighting to LED	25	630,436
Sub total		2,026,456

Table 2

Summary table with asset, carbon reduction, cost saving £/pa

Scheme	Annual Carbon reduction tCO2e	Energy cost Savings p/a
Install PV arrays	168.1	252,195
Upgrade lighting to LED	93.1	139,753
Total	261.2	391,949

The annual cost of borrowing the £2.02m shown in table 1, above, will be £195k per year. The savings associated with the works will be £392k as shown in table 2. The net saving to the Council will be £197k per year.

Table 3

Summary table of energy consumption

Number of Buildings	Total annual kWh consumption	% of total annual kWh consumption
320	39,186,812	100
90	35,242,631	90

5.7 The energy savings have been profiled over the last five years to ensure they were realistic and could be achieved, and a mean average was validated.

6. Financial, legal, equalities, climate emergency and other implications

6.1 Financial implications

The capital cost of the works outlined in this report totals £2.02m, including fees, risk and contingency. Reductions in the cost of energy consumption as a consequence of those works is estimated to be £392k, resulting in net savings to the Council of £197k per year. These savings will contribute towards the EBS division's savings requirements as set out in the draft General Fund Revenue Budget for 2025/26.

Stuart McAvoy – Head of Finance
10 December 2024

6.2 Legal implications

n/a

6.3 Equalities implications

n/a

6.4 Climate Emergency implications

As noted in the report, buildings were the largest contributor to the council's carbon footprint in the 2024/25 financial year. Following the council's declaration of a climate emergency and ambition to achieve net zero carbon emissions, they are a key area for the council to tackle in order to deliver this ambition.

As set out in the report, the proposed works would deliver a total carbon emission reduction of 261 tCO₂e per year, equal to 2.7% of the total carbon footprint of the councils' buildings. In addition, as noted by the report, these measures are projected to deliver significant further benefits in terms of energy cost savings for the council.

Aidan Davis, Sustainability Officer Ext 37 2284
9 December 2024

6.5 Other implications (You will need to have considered other implications in preparing this report. Please indicate which ones apply?)

7. Background information and other papers:

[Decision - Declaration of Climate Emergency \(leicester.gov.uk\)](#)

[Climate Ready Leicester Plan](#)

8. Summary of appendices:

Appendix A . Clean and green Capital costs

Appendix D . UK Green Building Councils guide to most cost-effective measures

9. Is this a private report (If so, please indicate the reasons and state why it is not in the public interest to be dealt with publicly)?

10. Is this a “key decision”? If so, why?

APPENDIX A

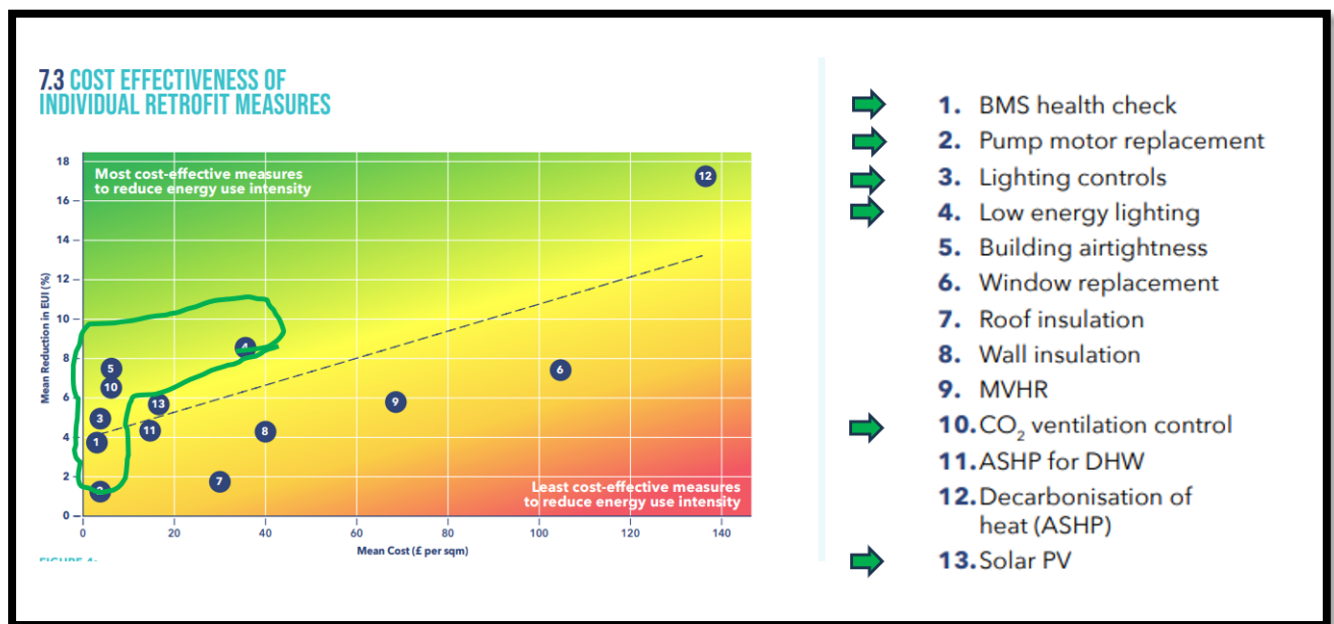
Table 1 “Clean and Green” capital costs

Site	Project	Capex Total
Tranche 1		
Leicester Leys Leisure Centre	LED Lighting & PIR Sensors	£67,630
Aylestone Leisure Centre	LED Lighting & PIR Sensors	£13,331
City Hall	LED Lighting & PIR Sensors	£132,535
Tranche 2		
Tudor Centre	LED Lighting & PIR Sensors	£24,073
Thurnby Lodge Community Centre	LED Lighting & PIR Sensors	£14,284
Leicester Business Centre	LED Lighting & PIR Sensors	£94,441
Belgrave Community Centre	LED Lighting & PIR Sensors	£8,713
Guildhall	LED Lighting & PIR Sensors	£9,866
Abbey Pumping Station	LED Lighting & PIR Sensors	£5,992
Leicester Leys Leisure Centre	PV New proposal	£162,302
Braunstone Leisure Centre	PV New proposal	£118,855
Tranche 3		
Braunstone CYPFC	PV New proposal	£32,726
Dunblane Community Home	PV New proposal	£35,888
7-9 Every Street	PV New proposal	£7,336
Evington Library	PV New proposal	£31,490
Eyres Monsell CYPFC	PV New proposal	£69,240
Humberstone Golf Course	PV New proposal	£11,077
Highfields CYPFC	PV New proposal	£39,865
Netherhall CYPFC	PV New proposal	£44,451
Thurby Lodge CYPFC	PV New proposal	£68,847
Spence street gym	PV New proposal	£74,589
York House	PV New proposal	£45,644
Beaumont Leys Library	PV New proposal	£72,500
Tranche 4		
Sulgrave Road	LED Lighting & PIR Sensors	£44,223
Westcotes Library	LED Lighting & PIR Sensors	£2,016
Brite Centre	LED Lighting & PIR Sensors	£1,984
Hamilton Library	LED Lighting & PIR Sensors	£7,702
90 Leycroft Rd Amenity	LED Lighting & PIR Sensors	£29,199
90 Leycroft Rd Highways	LED Lighting & PIR Sensors	£25,110
Dawn Centre	LED Lighting & PIR Sensors	£10,072
Gilroes Crematorium	LED Lighting & PIR Sensors	£4,044
Linwood Workshops	LED Lighting & PIR Sensors	£19,133
Spence street swimming baths	LED Lighting & PIR Sensors	£4,766
88 Leycroft Road	LED Lighting & PIR Sensors	£12,693
Kingfisher Youth Centre	LED Lighting & PIR Sensors	£14,335
Braunstone Leisure centre	LED Lighting & PIR Sensors	£8,308
Cossington street baths	LED Lighting & PIR Sensors	£4,276

King Richard 3rd visitor centre	LED Lighting & PIR Sensors	£11,173
Leicester Creative Business	LED Lighting & PIR Sensors	£60,536
Tranche 5		
Sulgrave Road	PV New proposal	£51,183
86 Leycroft Road	PV New proposal	£61,731
88 Leycroft Road	PV New proposal	£66,648
Vulcan House Workshops	PV New proposal	£147,497
Haymarket Theatre*	PV New proposal	£254,150
Total		£2,026,456

Appendix D

UK Green Building Councils guide to Cost-effectiveness of individual retrofit measures



7.3 Graph from UKGBC titled Cost Effectiveness of Individual Retrofit Measures plotting low to high cost measures from left to right on the x - axis and low to high energy reduction capacity from bottom to top on the y-axis.