



Derby City Council

COUNCIL CABINET
9 December 2015

ITEM 10

Report of the Cabinet Member for Cohesion
and Integration.

Street Lighting LED Replacement Project

SUMMARY

- 1.1 The energy required for street lighting in Derby costs around £1.2 million per year and produces over 5,124 tonnes of carbon emissions (CO₂) based on 2015 figures. This accounts for 12% of the Council's energy budget and 18% of our total CO₂ emissions.
- 1.2 Energy costs increased by more than 56% between 2007 and 2013 which is an increase of more than 8% year on year. While predicted rises have slowed, the cost of energy is still expected to rise by nearly 79% by 2032. Without investment to reduce energy consumption, the running costs of our street lighting equipment will have a serious impact on the Council's revenue budgets.
- 1.3 This report looks at the feasibility of converting 14,289 residential lanterns to more efficient LED units. This represents 49% of the total street lighting stock. Conversion to LED lanterns results in...
 - An 80% reduction in energy consumption for the selected assets, from 3,614,465 kWh to 737,550 kWh.
 - A reduction of 63.6% in carbon emissions from the selected assets, down from 1,657 tonnes to 603 tonnes. Additional carbon savings can be made via the introduction of variable lighting (dimming), down a further 265 tonnes to 338 tonnes which is a total of reduction of 79.6%.
 - An annual reduction in energy costs of £307k per annum.
 - The scheme achieves full payback in 10 years.
- 1.4 This report seeks approval to invest £2.8 million to supply and fit the new LED lanterns. The £2.8 million is to be made up from a £1.5 million interest free loan from Salix Finance, with the remaining £1.3 million to be Council match funding, financed by borrowing.

As well as the approval to invest in new LED lighting this report seeks permission to bid to Salix Finance for a £1.5 million interest free loan to part fund the project.

Salix Finance is a not-for-profit company funded by the Department of Energy and Climate Change (DECC) to remove the barrier of significant upfront capital cost to investing in energy efficient technologies.

A full business case prepared, in conjunction with our Street Lighting provider, Balfour Beatty, is included as appendix 2.

RECOMMENDATION

- 2.1 To note the information contained in the business case, recognising the potential to reduce energy consumption and to support the conversion of over 14,000 lanterns to LED technology.
- 2.2 To approve the submission of a bid to Salix Finance for a £1.5 million interest free loan to part fund the scheme.
- 2.3 To approve £1.3 million of borrowing to match fund the remaining project cost.
- 2.4 To approve the addition of the full £2,838,670 budget for the LED replacement project to the capital programme.

REASONS FOR RECOMMENDATION

- 3.1 To reduce the revenue burden from increasing energy costs.
- 3.2 To reduce the carbon footprint of our street lighting inventory.



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Report of the Strategic Director for Communities and Place

SUPPORTING INFORMATION

- 4.1 Please see appendix 2 for the full business case which has been prepared in partnership with our Street Lighting PFI provider Balfour Beatty.

OTHER OPTIONS CONSIDERED

- 5.1 A full range of alternative options are considered in detail in the business case (appendix 2). A summary is included in table 1 below.

The preferred option of converting existing lanterns to LEDs provides the best value overall when considering delivery of service to residents and road users and future investment in the network. LED replacement will increase reliability, reduce the number of lamp failures and does not require any lights to be switched off.

Table 1: Long list of options considered

Type	Description	Project Cost	Annual Energy Cost at Completion ¹	Annual Energy Saving	Payback
Do nothing	No further investment	£0	£383,684	£0	N/A
Part night switching	The fitting of a part night photocell that switches off all selected equipment from midnight until 5am	£435,000	£213,727	£169,957	3 years
Permanent switch off (de-illumination)	A visit to switch off each lantern at the isolator for the first year plus the removal and disconnection of the column in the second year ²	£3,741,000	£0	£383,684	10 years
CMS Dimming (55% COSMO max from 8pm to 5am)	Supply and fit of a CMS node, dimmable ballast and the associated base stations. This includes the on-going maintenance charge for the remainder of the project.	£3,414,218	£252,483	£131,201	26 years
Fitting of LED	Supply and fit of a LED	2,838,670	£76,630	£307,054	10 years

¹This is the annual energy cost for the lanterns under consideration only and not for the full asset inventory. There are 14,289 residential assets under consideration which represents 49.4% of the total street light assets in the city.

²Requires DfT approval and will result in the withdrawal of all DfT funding for the PFI contract.

lanterns (subject of this report)	lantern including all admin, contract fees and maintenance charges.				
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This report has been approved by the following officers:

Legal officer Financial officer Human Resources officer Estates/Property officer Service Director(s) Other(s)	Russ Sexton, Nicola Goodacre Tim Clegg
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For more information contact: Background papers: List of appendices:	David Bartram 01332 641516 david.bartram@derby.gov.uk None Appendix 1 – Implications Appendix 2 – Business Case Appendix 3 –Energy and Cost Model
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IMPLICATIONS

Financial and Value for Money

1.1

		Project Cost	Annual Energy Saving	Payback
Fitting of LED lanterns (subject of this report)	Supply and fit of a LED lantern including all admin, contract fees and maintenance charges.	2,838,670	£307,054	10 years

Funding for the project would be made up from:

£1.5 million interest free bid from Salix Finance (fully funded by DECC)

£1,338,670 from borrowing.

A full payback schedule is included as Appendix 3

Legal

2.1 None

Personnel

3.1 None

IT

4.1 None

Equalities Impact

5.1 None

Health and Safety

6.1 None

Environmental Sustainability

7.1 Positive - By completing the works identified in the recommendations there will be a

reduction in energy that will increase the council's ability to meet its sustainability targets for CO₂ reduction.

Property and Asset Management

8.1 None

Risk Management

9.1 None

Corporate objectives and priorities for change

10.1 None