

**9 April 2015**

**Street Light Lantern LED Conversion - Invest to Save Proposal**

**Ward(s)**                      All

**Portfolios:**    Councillor Lee Jeavons, Environment and Transport

**Executive Summary:**

This report outlines the development of an invest to save project of around £14m that would replace all street lighting lanterns with energy efficient LED technology.

With the cost of energy used for street lighting rising from approx £750k in 2002 to over £1.7m in 2014 and estimated to be over £3m by 2020, alternative more cost effective solutions need to be explored and implemented.

Whole scale conversion to LED operation controlled by a Central Management System (CMS) would significantly reduce energy consumption and therefore overall cost. This would reduce the initial baseline energy cost and mitigate the impact of predicted energy price rises over the medium to long term.

Reductions in energy usage would have positive impacts for the delivery of the Council's CO2 reduction targets imposed by the Climate Change Act 2008, the impact of the Electricity Market Reform Regulations 2014 and the soon to be introduced National Carbon Reduction Commitment Energy Efficiency (CRCEE).

Conversion to LED technology and Central Management System control is recognised by the Department for Transport as a positive way of managing street lighting infrastructure. In the Government's recent £275m highway maintenance Challenge Fund award, approximately £80m was allocated to 9 individual schemes representing approximately one third of the successful schemes and total funding allocation.

Building on the successful delivery of previous smaller scale invest to save LED conversion trials undertaken in Bloxwich, Leamore, Brownhills and Walsall, this project would deliver significant financial, operational and community benefits.

**Reason for scrutiny:**

To allow the Panel the opportunity to consider the merits of a major invest to save LED conversion project prior to the matter being considered by Cabinet.

## **Recommendations:**

1. That the Panel note the benefits of LED technology and Central Management System in mitigating electricity and maintenance costs whilst meeting carbon reduction targets and providing the ability to vary lighting levels to suit local requirements.
2. The Panel supports the development of a fully detailed business case as the basis for a decision to proceed with the investment required to realise these benefits.

## **Background papers:**

1. Walsall Public Lighting PFI Agreement March 2002 -2028
2. Walsall Public Lighting Invest to save initiatives Phase 1,2,3,& 4 (2011 – 2015)
3. Survey results of Invest to save Phase1 (2011/12)
4. Department for Transport options appraisal
5. Business Plan Phase1, 2, 3, 4
6. The Institution of Lighting Professional (ILP) Technical reports
7. Yorkshire Purchasing Organisation (YPO) Energy report
8. Electricity Market reform (EMR) documents published by House of Lords
9. Department for Transport Challenge Fund

## **Resource and legal considerations:**

Walsall's public lighting is maintained under the Public Private Finance initiative signed in April 2002 for 26 years.

## **Resource**

The proposal when formally developed is likely to require investment of approximately £14m which would be funded via Prudential Borrowing over a period of 3 years. The payback period is estimated to be approximately 18 years followed by the generation of an overall saving over the notional 25 year borrowing period. Detailed financial profiling would permit various payback period options to be assessed taking into account both the overall saving over the borrowing period and the early return of savings.

The grant received from the Department for Transport was £18.6m with a current revenue budget of £4.0m of which £1.7m is for electricity payments. At current levels of investment the electricity costs, with the newly imposed Carbon Tax and introduction of Electricity Market reform taxes, could see a 60% phased increase in existing electricity prices by 2020. It is also anticipated that the current stock will become obsolete in relation to the emergence of newer technologies. As Highway Authority the Council, having a legal duty to maintain the street lights, will incur costs due to obsolescence, taxes imposed and changes in the law.

## **Legal**

This proposal will form part of the existing PFI contract through the project's change mechanism leading to a Deed of Variation. The risk will remain with the PFI provider. Procurement and design will also be provided through the existing mechanism within the contract thus minimising the tendering costs.

There will be a requirement to seek external legal advice so as to bring the scheme into the existing PFI Agreement whilst ensuring the original aims and objectives are retained.

### **Citizen impact:**

Street lighting is a high priority in customer and public surveys. All citizens are users of the highway to some degree and perceive street lighting to be a contributor to keeping them safe from crime, fear of crime and road traffic accidents. Improved night-time visibility will enhance the town centre experience, reduce the risk of falls, improve security and help to reduce traffic collisions and crime. It will also contribute to improved surveillance, 'guarding' locations and deter potential offenders.

### **Environmental impact:**

LED lighting is known to emit 'better' light requiring less maintenance and electricity. As a result it saves on carbon. The light is whiter and brighter than traditional street lanterns, promoting public safety by improving the quality of CCTV camera images and making colours easier to discern. The proposal will also help support regeneration and economic growth. LEDs will reduce the dispersion of light upwards reducing light pollution and help preserve dark skies. There will also be less annoyance to residents of nearby properties. LEDs have a working life of 20-25 years compared to 3-6 years for conventional lighting. They are more reliable, leading to the need for fewer lamp renewals, less scouting/on-site monitoring, and reduced traffic management and congestion during repairs.

The Central Management System will enable lighting levels to be increased in times of poor visibility and, as necessary, in high crime and high amenity areas. Lighting may be varied where demand is less and switch-on times trimmed as LEDs do not require a warm up period.

### **Performance management:**

Implementation of Central Management Systems to remotely manage street lighting levels will improve performance and efficiency. The CMS will control and measure electricity consumption assisting in monitoring energy savings and provide an accurate basis for any future electricity supplier charging regime.

## **Equality Implications:**

The public lighting service affects all users of the highway network equally. It is in everyone's interest to ensure the borough's roads are lit to a reasonable standard for the road user. The LED lamps will provide a white light which points downwards onto the highway giving improved lighting. This will help young children and older people to feel safer.

## **Consultation:**

Further detailed consultation is necessary following this Panel's observations on this report, including Risk and Insurance and Legal Services.

LED technology conversion trials have been undertaken with a "before and after" survey conducted during the implementation of Phase 1 of the trials in Bloxwich; the results were positive.

Other local authorities with existing PFI contracts have been consulted, in particular Manchester City and Wakefield Councils who have approved £33m and £22m respectively for similar projects.

Local authorities who do not have an existing PFI contract who have, or are, implementing similar projects have been consulted, including:

- North East Lincolnshire
- Hartlepool Council
- Gateshead Council
- Plymouth Council
- Swansea Council
- Merthyr Tydfil Council
- Vale Of Glamorgan
- Hertfordshire Council
- Wigan Council

Elected members representing wards where the previous invest to save trials were implemented have been consulted.

Consultation has also taken place with Area Partnerships, Walsall Police, the Institution of Lighting Professionals and the Department for Transport.

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## **1. Report**

- 1.1 The public lighting service is provided through its contract with Walsall Public Lighting Limited and delivered on a day to day basis via Amey LG under the Council's PFI arrangements. The PFI has 13 years of its 26 year contract term remaining.
  - 1.1.1 The Agreement contains a clause that incentivised the contractor to provide a lighting solution within a defined energy consumption (recognising and allowing for development and economic growth) across the portfolio during the initial capital investment phase, 2002 to 2005.
  - 1.1.2 Amey provided a solution within this limit and continues to operate significantly within this contracted consumption limit. As a result they are not 'financially incentivised' to invest their own financial resources to reduce consumption further.
  - 1.1.3 If the Council is to reduce its base line energy costs and seek to protect itself from forecast energy price increases and legislative carbon reduction payments it is essential for the Council to consider investing in technological innovation to reduce consumption requirements.
- 1.2 Forecast Energy Price Inflation
  - 1.2.1 Street lighting energy currently represents over 30% of the Council's total electricity usage with the estimated annual cost of street lighting energy for 2014/15 currently forecast at approximately £1.7 m. This is some £900k more than it was 5 years ago.
  - 1.2.2 The Council already procures its energy at competitive rates through the Yorkshire Purchasing Organisation (YPO). YPO has undertaken a review of the future energy market which indicates that energy price inflation is likely to rise significantly over future years, notwithstanding recent reductions in oil prices.
- 1.3 The estimated cost of the Climate Change Act 2008 and the Carbon Reduction Commitment Energy Efficiency (CRCEE)
  - 1.3.1 The Climate Change Act became law on 26 Nov 2008 bringing legally binding targets of a 34% cut in greenhouse gasses by 2020 increasing to 80% by 2050. These are set against a 1990 baseline. In response, the government launched the CRCEE Scheme which requires the Council to purchase carbon allowances to offset its carbon emissions arising from its consumption of fossil fuels, and to produce annual reports detailing its total energy consumption and the emissions for which the Council must purchase allowances.
  - 1.3.2 The cost of these allowances in respect of street lighting in 2011/12 started with £12 per tonne of carbon equating to £90k in the first year for the Council.

This was deferred for street lighting in 2011/12 to 2015/16. The cost of carbon per year would amount to approx £125k.

1.3.3 The increase is significant however, in the longer term, there is uncertainty about how the government will price the cost of carbon reduction back to public bodies. This report recognises the drive and desire to reduce carbon consumption but, given the uncertainty of pricing, it does not factor the price of purchasing carbon credits into the detailed financial appraisal.

#### 1.4 Electricity Market Reform

1.4.1 Mandatory tariffs will be imposed based on consumption which it is estimated will increase electricity costs by 60% in the next 5 years.

#### 1.5 Lighting standards and performance

1.5.1 This investment will provide the Council with lighting infrastructure which can be actively managed. The lighting standards and performance will remain as per the PFI Contract and the recommendations of the current British Standards. The Central Management System (CMS) will accurately measure electricity consumption, assisting in monitoring and reporting energy savings. CMS will provide an accurate basis for a future charging regime. A fault reporting service will further reduce the need for on-site checks.

### 2.0 Public Lighting Investment Plan

2.1 The investment would replace approx 24,600 existing lanterns on residential and main roads (excluding all heritages and bespoke units) with LED technology and a Central Monitoring System.

2.2 The lighting standards would be to the current British Standards BS5489: 2014 comparable to the existing PFI Agreement.

2.3 The investment would save on procurement costs as this investment will form part of the ongoing PFI contract through a change mechanism.

### 3.0 Public Lighting PFI Programme

It is proposed that the replacement programme will take approximately 3 years to complete. Lighting design and delivery schedules are yet to be finalised and would depend on the detailed approval of this investment.

### 4.0 Financial Considerations

4.1 This proposal should mitigate against future increases in street lighting energy usage, energy price inflation and the cost of Carbon Reduction credits (should current Government proposals continue) in the most efficient way.

- 4.2 This proposal should demonstrate compliance with the CO2 reduction targets laid out in the Climate Change Act 2008 reducing greenhouse gas emissions leading to a more environmentally sustainable borough.
- 4.3 Detailed costing figures are awaited from Walsall Public Lighting Limited / Amey LG but high level figures have been provided with preliminary estimates for inflation, investment and impact on costs. These high level figures suggest the investment would “pay for itself” (i.e. recover the investment costs through savings generated as a direct result of the investment) over the useful life of the investment. This is backed up by the investments being made by other councils and the investment made by the government. More detail will be provided in a report to cabinet in due course with various scenarios around the variables that need to be taken into account such as lighting levels and price indexation. These will all be considered before any firm decision is made as to whether to proceed.
- 4.4 Should this investment proposal not be approved, the council will need to identify additional funding to cover the financial implications of carbon reduction legislation that is currently unfunded and would be unsustainable within existing budget allocations.

## **5.0 Risk Management**

- 5.1 With the recent £80m allocation of funding to LED conversion projects through the highways maintenance Challenge Fund programme, uncertainty in unit price and capacity in the industry to deliver LED units to programme may be introduced.
- 5.2 Energy price inflation and the implementation of Energy Market Reform will create budget pressures for the Council in the future that need to be mitigated.