

**From:** Mike Whiting, Cabinet Member for Planning, Highways, Transport and Waste  
Simon Jones, Director of Highways Transportation & Waste

**To:** Environment and Transport Cabinet Committee - 20 September 2018

**Subject:** Street Lighting Term Services Contract

**Classification:** Unrestricted

**Summary:** This paper provides an overview of the Street Lighting Term Services Contract.

The LED conversion project is valued at £40 million and is the largest of its type in the UK and we understand to currently be in the top 5 in the world. The project will reduce energy consumption and future maintenance cost by £5.5 million per annum with a total predicted energy reduction of 30,349,072 kWh and a carbon reduction of over 16,000 tonnes which overall relates to over 67% saving.

The project has been delivered on time and within budget. During the roll-out of the contract, a strong partnership approach has been developed between KCC and Bouygues which brings about a confidence for the future management of the contract.

**Recommendation:** The Cabinet Committee is asked to note and comment on the contents of the report .

## 1. Introduction

- 1.1 The Street Lighting Term Services Contract, including the conversion of KCC lights to Light Emitting Diode (LED) commenced March 2016. The outcome of this contract is to convert the whole of the KCC Highway street lighting lantern stock to LED and have them centrally controlled via a Central Management System (CMS) and carry out street lighting maintenance for a 15-year term.
- 1.2 Kent County Council is one of the largest lighting authorities in the UK with 125,000 street lights and some 25,000 lit signs and bollards. The current annual cost of illuminating and maintaining the stock prior to conversion was over £9m.
- 1.3 At the time of procurement of this contract the street lighting stock was 118,00 but has grown over recent years with new housing developments and adoption of roads.

- 1.4 The conversion contract would see this cost of illuminating and maintaining the whole of the street lighting asset substantially reduce. This is in terms of reduced energy consumption, reduced maintenance and reduced carbon emissions.
- 1.5 A procurement process was undertaken during 2015 and the Term Services Contract was awarded to Bouygues Energies and Services Infrastructure UK Ltd.
- 1.6 The LED conversion project is valued at £40 million and is the largest of its type in the UK.

## **2 Discussion**

- 2.1 Over recent years, innovations in street lighting technology resulted in LED products and controls being able to deliver ultra-efficient street lighting at affordable prices. Research showed that converting Kent's street lights to LED with CMS would reduce the energy and Carbon Reduction Commitment (CRC) costs by 60% and significantly reduce maintenance costs whilst enabling the complete management of street lighting including light optimisation, fault reporting, and energy metering. With these benefits in mind, it was decided that KCC's lights would be converted to LED using the funding

### **Street Lighting Term Maintenance Contract.**

- 2.2 In December 2015, the new 15-year street lighting term services contract was awarded to Bouygues E&S Infrastructure UK Limited, with a start date of March 2016. The following activities are included:
- Maintenance and replacement of street lighting units, illuminated signs, bollards and associated equipment
  - Street lighting design
  - Replacement of existing street lighting luminaires with LED luminaires
  - Provision of a Central Management System (CMS)
  - Emergency response
  - Structural and Electrical Testing
- 2.3 Robust and meaningful contract management is extremely important for all contracts with HT&W. The street lighting term services contract is no exception and from commencement a strong contract governance regime was established. This governance requires regular meetings and performance reporting throughout the various aspects of the whole contract. Regular meetings are held to support this approach including:
- LED Progress Meeting (fortnightly)

- Planned Works Meeting (fortnightly)
  - Maintenance Meeting (fortnightly)
  - Central Management System Meeting (fortnightly)
  - Progress Meeting (monthly)
  - Commercial Meeting (monthly)
  - Strategic Contract Board Meeting (monthly)
  - Annual review meeting – Lessons learnt / best practice
- 2.4 Regular interaction between respective officers and management has facilitated a good strategic direction for the contract. This has created a positive culture of “working together” and promoted commitment and motivation for a successful street lighting service. This has also helped develop and refine the series of Operational Performance Measures which measure the service and its delivery, ensuring continuous business improvement. Overall performance is discussed and monitored through the Strategic Contract Board meetings.
- 2.5 Health and safety is always a priority in all aspects of street lighting. Robust reporting on this across Bouygues E&S Infrastructure UK Limited has ensured a strong culture of health and safety has been engendered in everyone involved in this contract.

### **Management Systems**

- 2.6 To manage the LED conversion project of 125,000 assets, there was a need for a management tool to enable the efficient tracking of contract events that were likely to occur. Bouygues and Kent County Council jointly funded access to the Conject Management System to track the below tasks.
- Early Warnings
  - Service Manager Instructions
  - Notice of Compensation Events
  - Compensation Events
  - Compensation Event Quotations
  - Implementation of Compensation Events
  - Requests for Information
  - Contract Communications
  - Applications for Payment
- 2.7 The Conject system has proven to be an excellent system tool for all parties giving ownership to tasks and responsibilities, timescales for when actions need to be completed by, along with a clear audit trail of records held. Officers are currently reviewing the continued use of Conject for planned works and maintenance post LED.

## **Resource**

- 2.8 The significance of the LED conversion project and the need to resource it properly was identified and acknowledged early on. This is the largest conversion project in the UK and all industry has been watching this closely.
- 2.9 This recognition has allowed the project to run smoothly without distracting staff from the day to day running of the business. The team includes a dedicated project manager, design team, contract compliance officer and administrative support (see Appendix 1). With this team in place we have been able to efficiently manage the following functions:
- Continuously review progress against the programme of works to ensure delivery is on target.
  - Monthly audits of work to ensure work has been completed satisfactorily and meets the expected standard of quality.
  - Continuous asset inventory updates to ensure that the energy efficiencies are captured as soon as lights are converted to LED.
  - Monthly financial monitoring in accordance with the contract and regular review of compensation events.
  - Work with Bouygues to review innovation. With the introduction of a more energy saving luminaire KCC will achieve greater energy savings (2% additional savings on tendered contract).
  - Monthly feedback reports to funding providers, Salix and the Green Investment Bank, on progress of works and expenditure.
  - Regular one to one meetings with Salix to review funding and innovation. The resulting increased energy savings has released additional funding via Salix.
  - Efficiently manage enquiries relating to the LED conversion from Kent residents, county and district Councillors.
  - Provide support to third parties such as district and parish councils who may be looking to upgrade their assets.
- 2.10 The 'LED Team' will remain until the end of the LED conversion project in 2019 to ensure that all aspects of the project detailed above remain in place to ensure continuity throughout the closing stages of the conversion project.

## **General Maintenance**

- 2.11 Bouygues take over responsibility for the maintenance of each light as it is converted to LED. Until now, Street Lighting maintenance has been provided through the highways term maintenance contract however from 1<sup>st</sup> September this responsibility will pass to Bouygues. This includes the maintenance of all non-converted assets along with all illuminated signs and bollards. To ensure a smooth transition, both parties have worked well together on exploring the

most efficient ways of working and developing the associated process maps to document this.

- 2.12 There will no doubt be improvements and efficiencies that can be made to general maintenance as this element of the contract becomes embedded in the service, but the principles already established in managing the contract provide a good foundation for success.

### **Planned Works**

- 2.13 Structural testing and replacement of street lights has been carried out by Bouygues since April 2016. The processes associated with this type of work are well established but are reviewed frequently to ensure that they are current and relevant. Contract management is also well established and working well.
- 2.14 The successful implementation of planned works over the last two years has provided KCC with confidence to work with Bouygues to carry out the replacement of approximately 3,500 KCC owned concrete columns. These assets could not be converted to LED and a successful capital bid secured the funding for these to be replaced during the period of the LED conversion project. Work is progressing well and due to be delivered within the conversion contract programme.

## **3. Financial Implications**

- 3.1 The estimated budget for the LED conversion project within the Term Services Contract was £40m which included a contingency of £4.4m.
- 3.2 The initial savings were projected to be £5.2m (based on current prices e.g. ignoring inflation), meaning a payback period of 9 years including borrowing costs. The savings reflected reduced energy consumption, reduced carbon levy commitments, reduced maintenance – as the new lanterns included a significant warranty – and other incidental savings. The introduction of LED has also meant that annual inflation pressures were reduced by two-thirds, so the project will achieve actual savings, significantly resist future unfunded pressures as well as transferring the risk of equipment failure/maintenance from the authority to the contractor under warranty.
- 3.3 Due to changes in the luminosity of the lanterns, projects savings have increased to £5.5m. Additionally, changes to newer lanterns during the project, will achieve a further 2% energy reduction delivering an additional £80k saving in 2019/20.
- 3.4 The number of lights for which the authority is responsible has increased from 118,000 lights to c125,000 due to new developments and adoptions. The associated costs of the additional 7,000 lights have also been met from within

the £40m budget. Had it not been for these additional lights, it was anticipated that the project would have been delivered significantly within budget.

- 3.5 The introduction of the computerised Central Monitoring System (CMS), enables future lighting strategy changes to be implemented swiftly at the touch of a button, rather than the current resource intensive and costly process of manually adjusting sensors within the lights themselves and, hence is more responsive to future needs.

#### **4. Conclusions**

- 4.1 The LED conversion project is on target to complete the conversion of KCC street lights to LED by May 2019 and within the original £40m expected budget. Since awarding the contract, the asset base has grown from 118,000 to 125,000 due to new developments and KCC promoted schemes. Whilst many of these are already LED it is anticipated that those lights that are not LED will be added to the main conversion project and will be completed by May 2019 within the original budget and will be connected to the Central Monitoring System (CMS)
- 4.2 Alongside this, all KCC owned concrete columns are due to be replaced which will enable the LED conversion on these assets to be completed, as well as maintaining the structure integrity of the columns, many of which were life expired.
- 4.3 The optimisation of lighting levels is being achieved across the County as lights are converted to LED.
- 4.4 Street lighting faults are being reported via the Central Management System.
- 4.5 General maintenance will reduce due to the reliability of the new LED luminaires.
- 4.6 The Street Lighting Term Services Contract has not only looked to best practice within the lighting industry but has also presented the opportunity to create our own good working practices and share them with others through invitations to speak at workshops and lighting industry forums. Further enquiries are being received and we will have the opportunity to share our experience with others.
- 4.7 We aim to continue to manage and deliver a successful Street Lighting Term Services contract over the remaining period of the contract and beyond.

#### **5. Recommendation**

- 5.1 The Cabinet Committee is asked to note and comment on the contents of the report.

## 6. **Background Documents**

Appendix 1: Street Light Team Structure

## 7. **Contact Details**

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## Appendix 1

