

## **Replacement by LEDs programme – Frequently Asked Questions**

Please see below some Frequently Asked Questions about the programme and the new lights.

### **1. Why are you spending all this money to replace lights that are perfectly good?**

A: When all these all-night lights are converted to LED, Essex will save approximately £600k a year in energy and maintenance costs, as well as carbon taxes. The LED conversion project will deliver financial payback over ten years and a return on investment of 115% by year 20. Electricity consumption on the affected lighting stock is estimated to reduce by 63% as a result of the LED conversion project.

Cllr Rodney L Bass, Essex County Council's Portfolio Holder for Infrastructure said: "The significant cost savings aside, there are a number of clear advantages attached to upgrading our all night streetlights to LED. "They are energy efficient and have lower maintenance costs as the units have a much longer life expectancy than conventional sodium lamps. "We will monitor and measure the expected benefits of LED street lighting with keen interest over the coming years, and if warranted, consider converting tranches of our part night lighting stock in the future."

### **2. How much will it cost?**

A: Essex County Council is investing £9.2m into the project, £4.3m of which will be forward funded by an interest-free Government loan. When all these all-night lights are converted to LED, Essex will save approximately £600k a year in energy and maintenance costs, as well as carbon taxes.

### **3. Why are you only replacing all-night lighting, not the part-night lighting?**

A: Essex County Council is investing £9.1 million to convert a further 23,000 high-wattage part-night lights to save £21 million over 20 years. This is in addition to the first part of the LED replacement project, which was to replace all-night lights.

### **4. When will this be happening in my area?**

A: The programme is continuing with Phase 3, which includes high-wattage part-night lights on main roads. Each district will be upgraded in turn during financial year 2018-19. The intended order is: Maldon, Harlow, Brentwood, Epping Forest, Braintree, Tendring, Castle Point, Rochford, Basildon, Uttlesford, Chelmsford, Colchester. Dates may change as the project develops.

### **5. How many street lights are there in Essex, of different types?**

A: There are approximately 127,000 units of various types, owned by Essex County Council, of which all-night lights make up 18,262 (counting only those for which ECC pays electricity bill). Essex is third in England for the number of street lights in our area.

All night lights include 629 lights covering pedestrian crossings.

There are also some all-night lights currently owned and electricity paid for by developers on estates which are likely to be adopted by Essex County Council. We will then review the lanterns on these estates to look to convert these to LEDs.

There were 1588 all-night lanterns converted to LEDs, as part of a pilot project to test the benefits, including energy savings , reduction in maintenance costs.

#### **6. Will the streets lit with LEDs look any different?**

A: Each area where the new LEDs will be installed will be designed in accordance with the British Standard.

Visibility for drivers and other road users will be better in all cases. We will monitor these lanterns. Residents will notice a difference to the light, which will take some time to adjust to.

#### **7. Are there any other advantages to LED street lights?**

A: Yes, particularly because they last much longer than conventional sodium lights. LEDs should last between 10 and 20 years. That means there will be more reliable lighting and it will also reduce maintenance costs as engineers will not have to attend to faulty units.

#### **8. What is the cost per street light of replacing with LED?**

A: The average cost should work out at just over £200 per unit. The cost includes the price of the LED lantern itself, the telecell remote control unit which links each lantern to the Central Management Systems, the installation cost, any traffic management and the design work and other project management costs. Because the council is buying large numbers of similar units, they will achieve significant bulk discount from the manufacturers. Ringway Jacobs is able to add in similar orders from other contracts in the UK to reduce the unit prices even further.

#### **9. How quickly can you install these LEDs once you start?**

A: Contractors have estimated that where there are no major issues, such as prolonged in climate weather, they can install the lanterns at up to 100 per day. The target is to install approximately 9,000 LEDs lanterns in year 1, with the first year ending in March 2017 and a further 10,000 units installed in year 2.

#### **10. What will you do with the old lanterns that are removed?**

A: These will be properly disposed of with materials being re-used where possible.

#### **11. How did you choose which areas to do first?**

A: These areas have some of the busiest roads, with major junctions and so as lights fail in these safety-critical areas we would have to replace these quickly anyway.

**12. Will you still keep repairing faulty (sodium) all-night lanterns when they fail?**

A: We will try to be as financially efficient as possible, where safety is not at risk, so if a light is out in an area where we are due to replace lanterns with LEDs, we will avoid carrying out expensive replacements.

**13. How safe are LED street lights, are they a threat to our eyes?**

The street lights we have installed are designed for the exact local environment they are placed in to ensure the right luminance (light) on the road whilst minimising glare. Expert reports show:

**Public Health England**

Public Health England's report concluded that to damage your eyesight you would need to be **less than 2 metres away** with steady fixation for **2.5 hours!**

**European Commission Report – SCHEER (scientific committee on Health, Environment and emerging risks)**

The Committee concluded that there is no evidence of direct adverse health effects from LEDs emission in normal use (lamps and displays) by the general healthy population.

**The Lighting Research Centre**

The paper concludes that LEDs present no special concerns for the blue-light hazard over some other common sources in typical use cases because photophobic responses limit exposure to bright sources.

All the above reports show that street lighting should not have an adverse effect on the circadian (daily sleeping and waking) rhythm. It might be noted that office and home lighting and the use of laptops and mobile phones is more likely to have an effect.

**14. What is the colour temperature, in degrees kelvin, of the LEDs used in Essex?**

The colour temperature is 4000k which is a neutral white light source not a high CCT.