

# Herefordshire's LED street lights project

## Summary

In 2015 Herefordshire Council completed the conversion of almost all of our street lights, traffic lights, signs and bollards to Light Emitting Diodes (LEDs).

As a predominantly rural county with parts of two Areas of Outstanding Natural Beauty (AONBs) in the county as well as being adjacent to the Brecon Beacons International Dark Skies Reserve, Herefordshire Council was very aware of the issue of light pollution.

Our innovative 5-year, £7million project has not only improved the fabric and feel of the county's street lighting - since 2011 the switch to LEDs have saved over £4.8million on energy costs alone and over 8,500 tCO<sub>2</sub>e.

In 23/24 the LEDs consumed **3,155MWh less** than the sodium lamps creating a saving of **£867,000** and **653 tCO<sub>2</sub>e**.

This ambitious project is predicted to save **12,500 tCO<sub>2</sub>e** and **£12.8million** over 20 years.

## Key Facts

Herefordshire Council owns approximately 12,000 street lights across the county. The former sodium street lights were inefficient, emitted large amounts of light pollution and many of the lamp posts were old concrete ones that were nearing the end of their life.

In 2011/12 the County's streetlighting used over 4,700 MWh of electricity and produced over 2,100 tonnes of CO<sub>2</sub>e. The council therefore committed to replacing all street lights in the county with LED lights in two phases in 2010/11 and 2015. They are very energy efficient and require less maintenance than the old lights meaning that we will save on energy and replacement costs as well as reducing our emissions.

## Purpose

To improve the energy efficiency of Herefordshire Council by reducing costs and carbon emissions in line with the council's Carbon Management Plan with the additional benefits of reducing light pollution and maintenance costs.

## Light emitting diodes (LEDs)

Light emitting diodes (LED) lights are very efficient and use small amounts of electrical energy compared with sodium lamps. They emit a high quality white light with better colour identification that shines directly downwards onto the road rather than emitting light over a wide area thus reducing levels of light pollution. There is no "warm up" time providing the ability to switch directly on and off, providing further cost savings. An additional benefit is that LEDs require less maintenance and replacement contributing to cost savings.

Before LED  
2015



After LED  
2016



## Energy Efficiency Measure: LED lighting



Total electricity used by sodium street lighting 2011/2012 = 4,735,441 kWh  
Total electricity used by LED street lighting 2023/24 = 1,579,821 kWh  
**A reduction of 3,155,620 kWh**



Carbon emissions from sodium street lighting 2011/12 = 2,141 tCO<sub>2</sub>e  
Carbon emissions from LED street lighting 2023/24 = 327 tCO<sub>2</sub>e

**The emissions from grid electricity in 2023 have reduced to less than half of the 2011 value.**

**Herefordshire Council has a 100% renewable electricity supply that effectively reduces the emissions to zero.**

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## Financials

In the Autumn of 2012 a third of the County's street lights were replaced with LED lights and the remaining lights were replaced during 2015. Additionally these new lights are dimmed to 50% of full power between midnight and 5am, saving an additional £50,000 per year.

As electricity prices rise, the value of the energy saving increases year on year. If the LEDs had not been installed, the additional cost would be over £867,000 for 2023/24.

Since 2011 the LED streetlights have saved over £4.8 million in energy costs alone with more saved from reduced maintenance for repairs and replacement bulbs.



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