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RLG update

● UKRLG has decided to build on the risk-based approach already articulated within its current Codes of lighting, structures and highway maintenance; for local highway authorities across the UK.

A new Code likely to be called: 'Well-managed Highway Infrastructure' will comprise an overarching document covering roads, lighting and structures.

This means UKRLG's new Code will not outline any minimum or default standards but will include case studies, educational information and illustrate good practice in particular circumstances. Each authority can implement the Code in accordance with local needs, priorities and affordability.

For some authorities this will mean they can implement a full risk based approach immediately. Others may require more time and may choose to continue with current maintenance and management practices for an interim period. A date for full implementation is awaited.

The new Code is expected in Autumn 2015. To review visit <http://bit.ly/1HJBrjs>

Tipping point for councils to see the light on LEDs

A Street Lighting Toolkit launched this year by the Scottish Futures Trust – and applicable across the UK – is helping to convince authorities that now is the time to switch to LED lighting. Justin Ward reports.



Lindsay McGregor (centre) and Toby Tucker (left) of the Scottish Futures Trust launch a new LED street lighting toolkit

How can the UK save £13bn and 30Mt of CO₂ over the next 25 years? Light emitting diodes, or LEDs, could offer the answer.

This semiconductor light source produces more light for the amount of energy used than traditional incandescent and discharge lamps, with less energy lost as heat.

And soon we might reach a tipping point for widespread implementation of LEDs for street lighting.

According to Scottish Futures Trust (SFT) associate director and chair of the UK Lighting Board Lindsay McGregor the savings in energy and maintenance costs that councils can make now from switching to LED lighting are so substantial that delaying the move does not make financial sense.

The SFT has been working since late 2012 to establish the potential financial and carbon savings that could be captured through the introduction of LED lighting. Following a pathfinder project with two councils the SFT has been gradually leading a small revolution in street lighting in Scotland.

The director of energy efficiency at the Green Investment Bank (GIB) said in 2014 that we are at the cusp of local authorities understanding the technologies. The price of LEDs has also reduced by more than 25% in the last year according to a study

carried out using data from Scotland Excel which operates a national street lighting framework material contract on behalf of Scotland Councils.

SFT launched its first toolkit in 2013 (see overleaf) but enhanced this considerably and launched an advanced version at the start of 2015. Mr McGregor, who was previously responsible for street lighting at Dundee City and Perth & Kinross councils, was appointed by the SFT to lead its work to identify and co-ordinate the support required by local authorities to improve energy efficiency in street lighting.

He has been working with Toby Tucker of the SFT who has provided the financial expertise to the toolkit.

As of 1 April 2014 there were 10,000 LED street lights in Scotland. A year later this had risen to over 40,000. Mr McGregor's future forecasts based on Scottish Councils' investment programmes – which are likely to exceed £120M over the next three years – is that when the figure is released for April 2016 this will likely have shot up further to between 100,000 to 150,000.

Since the launch of the toolkit SFT has run seven regional workshops with over 85% of the 32 local authorities across Scotland attending.

"Currently we have supported business cases for 11 out of 32 local authorities," he says. "With a small



Light emitting diodes promise a clearer light and cheaper bills

handful more we will soon get to the tipping point in Scotland. There are a variety of options for authorities to borrow the money required either through the Public Works Loan Board (PWLB), Salix interest free loans or the Green Investment Bank's Green Loan.

The SFT was established to work with Scottish public sector organisations to help them achieve best value when their money is invested in infrastructure. One such investment is in energy efficient street lighting, seen as a strategic priority in helping tackle climate change. The package of support is co-ordinated from Resource Efficient Scotland and Scotland Excel, supported by funding from Scottish Government.

On average street lighting accounts for 20% of councils' electricity bills (£40M annually across Scotland) releasing nearly 200,000t of CO₂ each year into the atmosphere.

The SFT pathfinder project indicated that an investment of £300M in LED lighting across Scotland could deliver up to £900M of avoided costs over a 25 year period as well as secure huge environmental benefits.

SFT published its Street Lighting Toolkit in March 2013 to allow other local authorities to test the feasibility and better understand the potential impact of an energy efficiency investment within their street lighting estate.

Two years later SFT expanded and further developed a more enhanced Toolkit, with the added impact of its potential to be used further afield.

Street lighting consumes an unmetered supply of electricity. For an electricity provider to accurately charge for electricity consumed the council submits a copy of its street lighting inventory, expressed as a combination of what are known as 'charge' codes, 'regime' codes and associated number of lanterns.

The charge code is a unique code assigned

to specific lantern types and is used to calculate the volume of electricity consumed. The regime code (a number that is specific to regions across the UK) determines the number of hours that the equipment operates for.

Importantly both these codes are provided independently by Elexon, a Government organisation that tests, verifies and validates these codes. The Toolkit has been created so that a council can 'drop' its inventory into the Toolkit which in turn uses the Elexon data to calculate what the council's annual electricity consumption is precisely, and the annual cost projection.

By using this inventory and operating data supplied by Scotland's councils to electricity providers the Toolkit was able to establish an accurate pan Scotland annual baseline figure for street lighting electricity consumption of 385M kWh, at a cost of £40M, and CO₂ emissions of 205,000t, as at 1 April 2014.

Following SFT's earlier 'spend-to-save' study SFT reviewed the level of investment required which has reduced considerably to £250M to deliver £1.3Bn of avoided costs over a 25 year period.

SFT's Street Lighting Toolkit is the first guide of its kind in the world that provides end users with visibility, clarity and understanding of the benefits of undertaking a street lighting replacement or renewable lantern programme of investment.

Uniquely the Toolkit combines technical, commercial and financial requirements for any capital investment programme helping ensure a successful outcome.

Unlike any other guidance previously provided the Toolkit takes the user from the initial feasibility study and the development of a robust business case, through to implementation and post project completion monitoring.

20%



of global electricity consumption is from lighting; in the UK street lighting accounts for a fifth of an individual local authority's energy bill

£332M

is the annual UK spend on energy for street lighting (£40M Scotland)

50-70%



is the energy savings that could be made from switching to LEDs

890,820

street lights illuminate Scotland; 5% are currently LEDs (40,000 as of April 2015), about double the percentage of other parts of the UK. There are 7.4M UK street lights

1,638,000t

is the annual carbon emission figure for the UK. Reduction of CO₂ to meet EU and UK/Scottish targets is one of the main political drivers of the project

The Toolkit is specifically designed to be driven from publicly held and independent information. This increases the robustness and integrity of the Toolkit and provides confidence in Toolkit outputs, reducing project risk and significantly increasing the likelihood for project success.

Local Partnerships (owned by UK Government) has adopted the Street Lighting Toolkit for its own use and is also carrying out regional workshops across England and Wales. In Northern Ireland, SFT is providing similar support.

The toolkit was highly commended for the CIHT/Costain Sustainability Award in June this year. Across the UK cumulative energy cost savings will amount to £13Bn and save 30Mt of CO₂ over the next 25 years.

Around the world grid based electric lighting is thought to consume 19% of total global electricity production. After the launch of the Toolkit, SFT has received over 120 enquiries for its use from all across Europe and further afield including Australia, New Zealand, Mexico, USA and Singapore.

For further details about the toolkit please visit www.scottishfuturestrust.org.uk