

CET/24/66

Corporate Infrastructure and Regulatory Services Scrutiny Committee  
25<sup>th</sup> September 2024

# Street Lighting Trial Update and Future Policy Considerations

Report of the Director of Climate Change, Environment and Transport

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Please note that the following recommendations are subject to consideration and determination by the Committee before taking effect.

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## 1) Recommendation

That the Committee be asked to:

(a) consider the proposals on Devon County Council's streetlighting dimming policy and advise Cabinet of any comments

## 2) Introduction

This report outlines the findings from Devon County Council's (DCC) recent streetlighting trial which ran from 9<sup>th</sup> April - 21<sup>st</sup> May 2024. During the trial, earlier switch off times and further dimming were applied to street lighting in Abbotskerswell, Holcombe Rogus, Kingskerswell and Sidmouth. The report will then make a recommendation on how this learning could be applied to DCC's policies in future.

## 3) Background

DCC's current street lighting policy was approved by Cabinet on 9<sup>th</sup> January 2019 where it was agreed to maintain the current regime of part-night lighting and lowering light levels during the night. DCC currently operates two dimming regimes:

### 1) Main Roads

Dusk to 21:30 = 100% output  
21:30 to 00:00 = 75%  
00:00 to 05:00 = 50%  
05:00 to 06:00 = 75%  
06:00 to Dawn = 100%

### 2) Residential Part Night Lighting

Dusk to 00:30 = 100% output  
00:30 – 05:30 = 0% (i.e. lights off)  
05:30 – Dawn = 100%

Over the last decade, DCC's streetlighting team has focussed on reducing energy usage whilst continuing to deliver day-to-day functions such as keeping the public safe. The LED roll-out programme, along with the introduction of part-night lighting and a stepped dimming regime, have achieved substantial reductions in both the County Council's carbon footprint and, DCC's revenue expenditure.

In 2015/16 DCC's street lighting asset used circa 31million kWh of electricity, by 2023/24 this figure had been reduced to just 12million kWh. Given the current energy price of £0.33 per kWh, this equates to an annual revenue saving in excess of £6m.

This report does not propose any change to DCC's main road lighting regime. This work has kept DCC ahead of many other local authorities and if approved by Cabinet, the proposed policy change detailed in this report would continue this trend.

#### **4) Recent Trial and Subsequent Proposal**

DCC has been upgrading the street lighting asset to a Central Management System (CMS), which allows adjustments to lighting to be made remotely. Using the CMS, the community-led trial aimed to reduce carbon emissions and costs, whilst responding to local needs for lighting.

Prior to introducing changes, an Equality Impact Assessment was completed, and key parties consulted, including:

- Devon and Cornwall Police
- DCC's Road Safety Team
- DCC's Ecology Team
- DCC's Legal Team
- DCC's Transport & Engineering Professional Services partner (WSP)
- Cabinet Member for Highways
- The local Elected Members and the respective Parish and Town Councils

Additionally, research was undertaken into the lighting regimes of other similar highway authorities through the South West Highways Alliance Group. Other highway authorities, such as [Hampshire County Council](#), [Leicestershire County Council](#), [Lincolnshire County Council](#) and [Somerset Council](#) are reducing their street lighting costs through extending the time that streetlights are turned off at night and reducing their brightness at certain times.

In the trial, lighting initially changed to 50% output (instead of 100%) from 21:30 at each location, with switch-off beginning at 00:00, instead of 00:30. This reduction was enhanced over six weeks, e.g., week 1-2: dim at 21:30 to 50%, off at 00:00, week 3-4: dim at 21:00, off at 23:30 etc. as per Table 1.

	Pre-Trial	Weeks 1-2	Weeks 3-4	Week 5-6
Dim %	0%	50%	60%	70%
Lighting output %	100%	50%	40%	30%
Dim timing	NA	21:30	21:00	20:30
Switch off timing	00:30	00:00	23:30	23:00

**TABLE 1: LIGHTING REGIMES DURING RECENT TRIAL**

To avoid bias, whilst the stakeholders listed above were aware, the trial was not actively promoted, anticipating that feedback would therefore be a truer reflection of community observations and feelings. Following completion of the trial, an online form was used to capture feedback with the results being summarised in section 6.0 of this report.

Based on the findings of the trial, the feedback received and comparison with the approach taken by other local authorities, this report proposes that DCC's Part-Night Lighting Policy is updated as follows in Table 2:

	Existing	Proposed
Dim %	0	60%
Lighting output %	100%	40%
Dim timing	N/A	21:30 – 00:30 and 05:30 – 06:30
Switch off timing	00:30 – 05:30	No change

**TABLE 2: PROPOSED PART-NIGHT LIGHTING POLICY CHANGES**

As with the previous trial, it is proposed that any future policy change would require officers, working with the Road Safety Team, to identify 'conflict zones' (e.g. pedestrian crossings etc.) and not change the lighting at these locations unless deemed safe. Equally, as with current practice and the previous trial, if the police highlight a safety concern, the lighting levels would be reviewed and can be altered via the CMS.

## 5) Options / Alternatives

In addition to the recommended policy change, the following options were considered:

### a) Do Nothing

Not utilising the newly installed CMS technology to adapt street lighting regimes would represent a missed opportunity to achieve long-term carbon and financial savings. It would

also fail to deliver potential ecological benefits and equally would not respond to requests from some communities to change the policy.

**b) Continued and Expanded Trials**

Following the conclusion of the recent trial, the feedback obtained from residents was analysed (detailed in section 6) and although some areas made representations, this was largely in relation to the earlier switch-off times. Of the 193 respondents, only six commented on the increased dimming. Further trials could explore the option of dimming further without the amendments to switch-off times. However, as there was limited reference to this in the original trial feedback it may be unnecessary, whilst also delaying the benefits realisation. With the dynamic nature of the Central Management System, future changes could also be implemented at short notice if desired.

**c) Dim Further**

DCC could dim further than the proposal in this report. This could take the form of an earlier dimming start time and/or dimming to a lower output (e.g. dim 70%, 30% output). This would accelerate the carbon, cost and sustainability benefits.

**d) Urban/Rural Lighting Options.**

A further option would be to offer two different dimming regimes, possibly on the basis of an urban/rural split. In the feedback from this trial, and previous requests to the Streetlighting Team, it is noted that generally it has been rural communities, such as Holcombe Rogus for example, that have welcomed the earlier switch-off times and increased dimming to enable darker skies. In contrast, urban or sub-urban communities generally raised greater concern over crime and safety.

**6) Representations**

A feedback form was circulated within the geographic trial areas after the trial finished on 21<sup>st</sup> May. This was shared through local Town and Parish Councils and the Cabinet Member for Highways. A total of 193 responses were received.

The feedback form asked participants which date they observed changes to streetlighting (if they noticed any change). Only 28% of responses noting lighting adjustments gave a date that fell within the trial period of 9<sup>th</sup> April – 21<sup>st</sup> May 2024.

- 55 respondents reported noticing a change within the trial period
- 45 respondents reported noticing a change outside the trial period (when no change had been made)
- 93 respondents did not supply a date for observing a change

Of the 193 responses, over 70% were from the Abbotskerswell/ Kingskerswell areas.

Area	Responses	Support for wider adoption			
		Agree	Neutral	Disagree	No indication

Abbotskerswell	44	10	3	8	23
Holcombe Rogus	8	2	0	0	6
Kingskerswell	139	18	5	78	38
Sidmouth	2	1	0	0	1

**TABLE 3: SUMMARY FEEDBACK REGARDING SUPPORT FOR WIDER ADOPTION OF REDUCED LIGHTING**

From the feedback, it is notable that:

- The earlier switch-off and/or lack of lighting was referenced most often i.e. 119 times (as stated above though not all observed dates were within the trial period).
- The increased dimming of lighting was noted in only six responses.

This strength of feeling around not extending the switch off time, coupled with the relatively few comments regarding additional dimming is noted and the proposal detailed in Section 4 (Table 2) is a direct reflection of this feedback.

Over recent years the Streetlighting Team has received multiple requests, generally from rural communities to further dim and/or switch off street lights completely. This is in contrast to places like Exeter where the same team has helped expand lighting provision as part of the Safer Streets Fund. The above proposal aims to balance these requests with the trial feedback and wider considerations such as carbon reduction.

The feedback form included a free text box to provide opportunity for other factors to be considered. While it's difficult to quantify free text, responses included a range of considerations. For example, comments were received around the environment/ecological benefits. Equally, comments were included around feeling unsafe, feeling unheard in their concerns, and the impact on shift workers of reduced lighting.

During the final phase of the trial, concerns were raised regarding the earlier switch-off in some areas. Following agreement with local Members, the team used the CMS to revert to a later switch-off in these areas.

## 7) Strategic Plan

By looking to harness new technology and be more dynamic in the approach to street lighting, the recommended policy change will align well to several Strategic Plan priorities.

Table 4 summarises how the proposals would impact achievement of relevant Strategic Plan actions according to a seven-point scale, whereby -3 represents a large negative impact and +3 represents a large positive impact.

It is noted that for some Strategic Plan actions there will be neutral impact. No negative impacts are foreseen.

Strategic Plan Priority	Strategic Plan Action	Alignment
Responding to the Climate Emergency	Support a green recovery from COVID -19	+3 (Large Positive)

	Ensure resources are used more efficiently	+3 (Large Positive)
	Help wildlife and landscapes to recover	+3 (Large Positive)
	Encourage sustainable lifestyles	+2 (Moderate Positive)
	Continue to reduce carbon emissions across all our services	+3 (Large Positive)
Being ambitious for children and young people	All	Neutral
Support sustainable economic recovery	Ensure financial resilience of the Council	+3 (Large Positive)
Tackle poverty and inequality	All	Neutral
Improve health and wellbeing	All	Neutral
Help communities be safe, connected and resilient	Engage directly with people in meaningful ways and encourage participation in decisions that affect them  Some post trial feedback indicated that members of the public felt unsafe with lower lighting levels	Neutral

**TABLE 4: ALIGNMENT WITH STRATEGIC PLAN**

n.b. Further reference to Equality implications is included in later sections of the report.

## **8) Financial Considerations**

During the recent trial, approximately 1600kwh of energy was saved when compared to current policy. At £0.33 per kWh, this equates to a financial saving of circa £530. Given this was from just 550 street lights over a six week period, scalable savings are clearly achievable (the streetlighting asset totals more than 80,000 units).

With regards to the equipment required, the LED upgrade programme is complete and the majority of lanterns in Devon are therefore LED. The programme to install a CMS across 80% of these lanterns is also progressing well, with circa 50% of street lights now upgraded (CMS is essential in enabling remote, pre-programmed dimming and/or switch-off).

As such, whilst there is officer time associated with assessing sites and implementing dimming, this proposal is expected to deliver a financial saving.

At current energy prices, this saving is forecast to be £200,000 per year (although this may increase if energy prices continue to rise)

## 9) Legal Considerations

There is no general legal duty placed on highway authorities to ensure that the highway is lit, including where streetlights are present (although existing streetlights need to be safely maintained). There are certain scenarios where DCC, as the highway authority, does have an active duty to provide lighting (e.g. for a selection of specified traffic calming features) and lighting will be maintained in these areas to ensure that DCC complies with its duties.

In making the decision not to light, DCC will consider the impact on highway users (particularly vulnerable users) in conjunction with DCC's public sector equality duty. Equality considerations are covered in more detail elsewhere in this report.

## 10) Environmental Impact Considerations (Including Climate Change, Sustainability and Socio-economic)

### Carbon savings:

During the recent trial it is calculated that circa 420kg of carbon emissions were saved. As with the financial calculation previously given, as this was from just 550 streetlights over a six week period, scalable reductions are clearly achievable.

If approved, it is calculated that this policy change would achieve a reduction of circa 150 tonnes of carbon per annum (although this may reduce over time as more energy is generated from greener sources)

### Ecological Support

The proposed changes to streetlighting levels have received support from Devon County Council's Natural Environment Team. The statement of support said 'The proposed plan to switch off streetlights earlier and/or dim them to a lower setting would have clear benefits to the wildlife' and 'In conclusion, there are clear ecological benefits to the reduction in artificial light at night, and DCC's Ecology Team fully support the trial to turn off/dim artificial lighting in locations across the county'. The statement of support also included:

- reduced disruption for nocturnal species, such as bats
- minimizing insects attracted to light sources, subsequent pollination impacts
- increased feeding opportunities for wildlife that avoids the light
- reduced human-wildlife conflict, such as roadkill

In addition, a recently published study also found that all-night streetlights can make leaves inedible to insects. [Frontiers | Artificial light at night decreases leaf herbivory in typical urban areas \(frontiersin.org\)](https://www.frontiersin.org/articles/10.3389/fenv.2022.882111/full)

### Socio-economic impact

Lighting changes have been requested from many communities throughout Devon, highlighting the desire to have more flexible programs. Considering wider adoption would enable the funds spent ordinarily on electricity costs to be directed elsewhere, providing a wider socio-economic impact from the project.

## 11) Equality Considerations

Prior to progressing the original trial, an Impact Assessment was prepared and is available on the Council's website at [Street Lighting Project - Central Management System - Impact Assessment \(devon.gov.uk\)](#)

Through completing the EIA, network use was considered so that the trial would be inclusive for all communities. Further, the police were consulted prior to, and liaised with throughout the trial enabling safety concerns to be raised. The trial proceeded on the basis that amendments to lighting could be made through CMS at short notice.

The trial aimed to foster good community relations, as it was community-led and initial locations were selected based on previous correspondence and requests.

## 12) Risk Management Considerations

The recent trial and subsequent proposal have been considered on the basis that if safety concerns are raised by the police, the lighting levels can be increased remotely, at short notice, using the CMS.

## 13) Summary

This report has detailed the recent streetlighting trial, summarised the findings and made a proposal on this basis. The proposal details an opportunity to reduce carbon emissions and costs, whilst responding to local needs for lighting.

### **Meg Booth**

Director for Climate Change, Environment and Transport

**Electoral Divisions:** All

Cabinet Member of Highway Management: Councillor Stuart Hughes

## **Local Government Act 1972: List of background papers**

Background Paper: Equality Impact Assessment for trial

Date: April 2024

File Reference: [Streetlighting Trial EIA](#)

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