ENVIRONMENT AND SUSTAINABILITY SCRUTINY COMMITTEE – 25TH OCTOBER 2022

SUBJECT: **STREET LIGHTING REVIEW**

REPORT BY: **CORPORATE DIRECTOR FOR ECONOMY AND ENVIRONMENT**

1. PURPOSE OF REPORT

1.1 To update the Scrutiny Committee on a high level review of street lighting undertaken in lieu of the employment of LED and Part Night Lighting which was fully introduced across the County Borough in February 2021 and the Climate Emergency that has been declared by the Council.

1.2 To seek the Scrutiny Committee views on the officer recommendations prior to consideration of the review by Cabinet.

2. SUMMARY

2.1 To meet the challenges of carbon reduction commitments and rising energy costs in May 2018, the Regeneration & Environment Scrutiny Committee recommended a programme to Cabinet for the installation of LED lighting and implementation of a part night-lighting (PNL) strategy. This programme was subsequently agreed by Cabinet and was rolled out across the County Borough over a 20 month period between April 2019 and February 2021. The system has been operational since with full LED infrastructure and PNL between the hours of midnight and 5.30am.

2.2 The Council has declared a climate emergency, so the reduction in carbon emissions is a commitment to the prevention of the long-term threat of climate change to which energy reduction plays a key role. Whilst other activities affect climate change more than lighting, it is still a very strong contribution from a single industry sector. Experts agree that we will not meet our goals for mitigating climate change without reducing the amount of Carbon being emitted into the atmosphere. Something must be done to restore the resilience of our planet to off-set the changes in our environment.

2.3 In addition to the experiences of climate change which are now evident across the world, Caerphilly County Borough Council's resources are inevitably finite both operationally and financially. This, combined with rising energy costs reinforced the need for a proportionate response in terms of street lighting service provision.

2.4 The strategy that was supported by Scrutiny and Cabinet has resulted in carbon

savings of circa 2836 tonnes per annum as well as significant financial/future cost avoidance savings which are outlined in the Financial Implications at section 8 below.

2.5 The highways infrastructure provides local access to all road users be that for education, leisure, business or wider authority and regional connectivity. It shapes the character of an area adding to the social, well-being and quality of life in a community.

2.6 The total number of street lights across the Authority has increased over the last 5 years and now stands at 27,373. This increase in the street lighting asset has coincided with a period of MTFP savings, increasing energy costs and the very real threat of climate change being felt by our communities.

2.7 Following the implementation of the LED and Part Night Lighting Policy approved in 2018, CCBC has 22,344 street lights that are switched off at midnight for five and a half hours, 2684 illuminated signs and 711 flexible bollards. Signs continue to remain lit through all hours of darkness and bollards are no longer illuminated.

2.8 This report sets out the parameters of a high level review undertaken by officers which considered a number of alternative options and examined the resultant carbon and financials of each.

3. RECOMMENDATIONS

Members of the scrutiny committee are asked to consider the officer recommendations below and offer their views on this and any alternative approaches they wish to be considered by the Cabinet.

Officer recommendations are that: -

3.1 The existing street lighting policy is maintained.

3.2 Officers continue to work with their colleagues in Gwent Police in accordance with the existing, agreed protocol relating to crime.

3.3 Issues relating to fear of crime are recognised by the Authority and where these issues are considered to be serious, taking account of the vulnerability of the complainant then an individual response is offered through the Community Safety Partnership which will include a number of wider interventions, such as security advice and guidance.

4. REASONS FOR THE RECOMMENDATIONS

4.1 To ensure the Council continues to reduce its impact on the climate through maintaining its commitment to reduce carbon emissions.

4.2 To ensure the impacts of rising energy costs are managed effectively as part of the overall financial strategy for the Authority.

5. THE REPORT

5.1 To meet the challenges of Carbon reduction commitments and rising energy costs

within Highways street-lighting, the Regeneration & Environment Scrutiny Committee and Cabinet endorsed a programme to implement LED installation and part night lighting between the hours of midnight and 5.30am, to all lighting, except at junctions and in major town centres. This followed on from a 2010 initiative where the street lights on inter-urban routes connecting towns and villages were previously altered to part-night lighting from midnight to 5.30am. This inter-urban routes PNL initiative therefore operated seamlessly for a period of10 years prior to the latest LED/PNL initiative.

5.2 In late 2021/22 the then Leader of Council gave a commitment that the street lighting strategy would be reviewed after the revised service had been operational for at least 12 months.

5.3 In undertaking any review, the following factors have been taken into consideration:-

- National data & reports on the links between removal of night lighting and crime.
- Complaints data.
- Gwent Police crime data and outcomes of regular meetings between Gwent Police and Highways Infrastructure staff.
- Data on joint work with Gwent Police in relation to the restoration of street lighting to support CCTV roll-out or temporary investigations of crime.
- Carbon & financial savings data for various alternative delivery options.

5.4 It is also important for the Scrutiny Committee to note that even though the Authority purchases all of its energy from renewable sources, carbon savings can only be accounted for against the Authority's Carbon reduction targets when there is an actual saving made (in street lighting terms the combination of LED and PNL has achieved this). Removing PNL would therefore result in additional carbon being emitted and would be detrimental to the Authority's carbon targets.

5.5 **Complaints**

In undertaking any review the number of "complaints" received by the Authority needs to be taken into consideration.

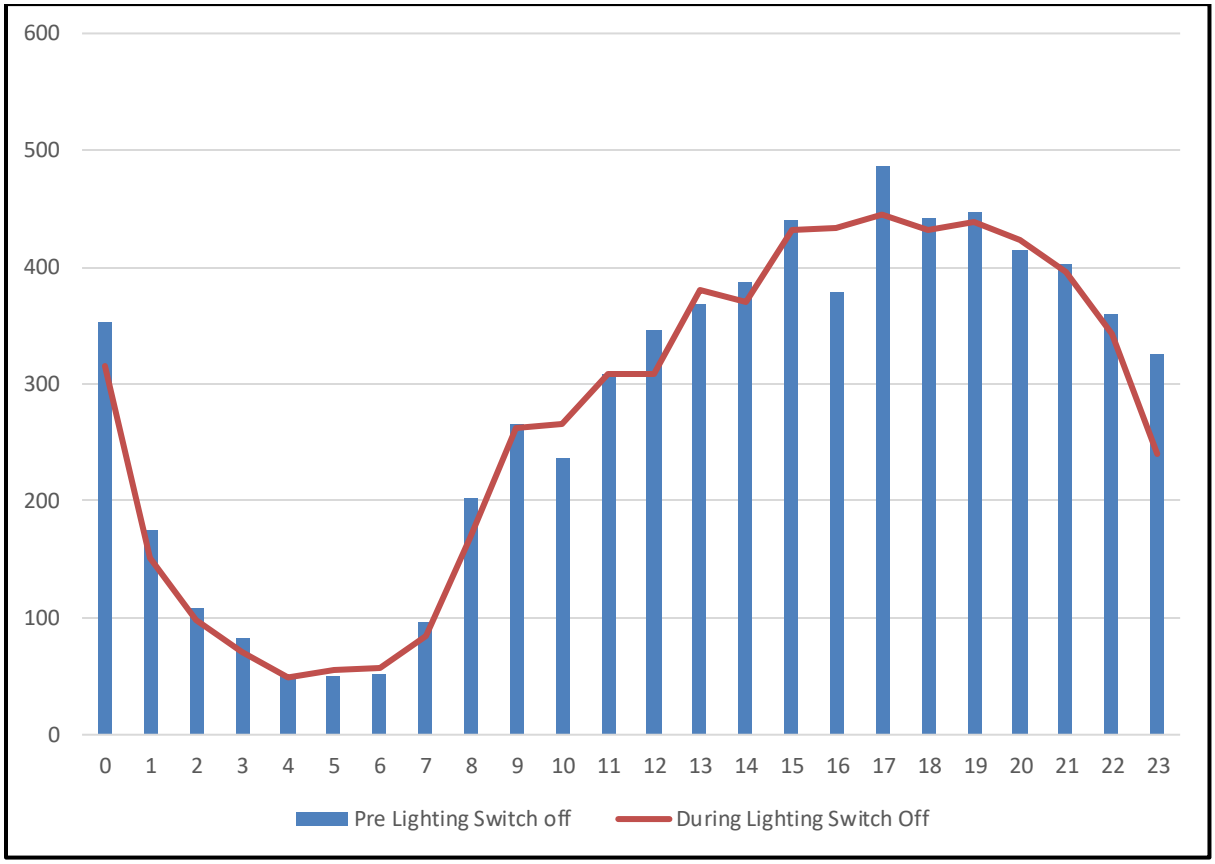
Following the implementation of the change to LED street lights and the reduction in street lighting operating hours policy, a total of 316 complaints from CCBC residents have been received (this equates to 0.18% of residents) and are itemised below:

- 147 directly against the policy.
- 86 that the LED lighting is over bright.
- 56 that the LED lighting does not provide enough illumination
- 22 that the times of operation are problematic and
- 5 following last years well publicised attack on Sarah Everard.

5.6 Scheduled meetings are in place between Highways Managers and Senior officers from Heddlu Gwent Police to review crime statistics for the hours of reduced street lighting operation. These meetings provide an effective collaboration method where the police can request temporary night time switch on where crime investigations are underway (a recent example has been the Pengam ward where a hate crime investigation was underway) or where new CCTV infrastructure is being introduced which requires permanent night lighting (a recent example of this is Rhymney).

To date there is no associated link that has been established between the occurrence of crime and the reduction in street lighting operating hours policy. The graph below provides an indication of crimes by hour of day for the period July 2020 to June 2021 (i.e.: pre, during and for 4 months post PNL introduction).

Crimes by hour of day – July 2020 to June 2021



5.7 In undertaking the review, officers have considered 4 potential options in addition to the status quo (i.e. lights switched off in residential areas and inter urban routes between midnight and 5.30am) prevailing. All of these additional options involve the employment of "dimming" technology (in the form of a central management system or CMS) to centrally control LUX levels.

5.8 **Central Management System (CMS) and Dimming**

A CMS allows for the unlimited control of the street lighting equipment from a central point via a computer. In general, all CMS's allow for the collection of data from individual lamps giving the switch times, energy use and operating status. Variable levels of dimming would also be possible on lanterns equipped with electronic gear. No energy or carbon dioxide savings would result directly from the installation of remote monitoring but increases in energy use and emissions would be dependent on the control settings selected.

5.9 If a CMS was supported for introduction, all street lights would require the installation of a CMS node. Although 4989 lanterns already have older CMS capability, to implement dimming of all LED lanterns these nodes would also require upgrading with a supply, installation and set up cost of **£1,640,000.**

5.10 To enable the 2684 illuminated signs to operate via CMS would cost an additional **£129,000.**

There are 7,400 lanterns with LED gear trays installed in around 2010 that are not compatible with CMS dimming and these would also require upgrading at a cost of **£1,645,000.**

The purchase and installation of additional base stations would be required to ensure full radio coverage across the borough. The service provider – (Telensa) would be required to undertake a feasibility study of the actual number, but indications suggest at minimum an additional 32 base stations would be required at a cost to supply and install of **£112,000.**

An annual maintenance fee of **£39,640.00** would also be applicable.

5.11 **In summary the installation of a CMS would be circa £3.5m.**

5.12 Following installation of a CMS, it is assumed that the 4941 lanterns located at junctions, conflict areas and roundabouts will remain on at full output, as will the 2684 illuminated traffic signs and that the 5,368 street lights located on inter urban routes could be altered to allow for dimming regimes.

5.13 For the street lighting system to remain within compliance of BS5489 Requirements for road lighting, the lantern output can be reduced subject to highway use and primarily the vehicular traffic flows. As such data indicates that it would be possible to reduce the classification of street lighting subject to the following operating periods:

- 100% of lantern light output (lumens) dusk to 19.00.
- 75% of lantern light output (lumens) 19.00 to 21.00
- 50% of lantern light output (lumens) 21.00 to 00.00
- 25% of lantern light output (lumens) 00.00 to 05.30

5.14 The options examined by officers resulted in various carbon and financial impacts and are outlined in the table below.

Review Options Compared to Status Quo

Option	Description	Carbon Impact	Financial Impact/Payback
1.	• Normal Lighting to 7pm • 7pm to 9pm dim to 75% • 9pm to midnight dim to 50% • Midnight to 5.30am dim to 25%	Emission of additional 154tpa of carbon	• Additional energy cost of £53,000pa. • No payback on £3.5m CMS investment.
2.	As option 1 but lights switched off between 2am & 4am.	Emission of additional 33tpa of carbon	• Additional energy cost of £11,000pa. • No payback on £3.5m CMS investment.
3.	As option 2 + inter-urban routes switched off between midnight & 5.30am.	Further reduction in carbon	• Further savings in energy costs of £72,000pa.

		emissions of 210tpa.	• 48 year payback on £3.5m CMS investment.
4.	• 7pm to 9pm dim to 75% • 9pm to midnight dim to 50% • Midnight to 5.30am switch off (as status quo)	Further reduction in carbon emissions of 233tpa	• Further savings in energy costs of £80,000pa. • 44 year payback on £3.5m CMS investment.

5.15 Although fear of crime "complaints" linked to street lighting are minimal, it is recognised that there may be vulnerable residents for whom this is a potential issue.

5.16 Where fear of crime issues are linked to night time lighting switch then options involving collaboration between the Authority's Community Safety Team and Gwent Police can be considered to include advice relating to the purchase and installation of a home burglary pack and ring doorbell combined with a home visit to review security and provide reassurance to the resident.

6. ASSUMPTIONS

6.1 The financial implications (both in terms of savings and costs) are based on confirmed energy prices at 2021/22 rates. It is assumed that energy prices will at least double throughout the remainder of 2022/23 and into 2023/24

7. SUMMARY OF INTEGRATED IMPACT ASSESSMENT

7.1 As this report is a review of an existing policy which recommends the status quo, a new IAA has not been required. However, the existing IAA will be reviewed and updated in light of any new developments/recommendations as noted in this report.

8. FINANCIAL IMPLICATIONS

8.1 The switch to LED and PNL (the status quo) has resulted in cost savings of £1,160,000 at current prices. However, when considering the feedback from the public sector energy procuring organisation (Crown Commercial Services) it is likely that this saving will be circa £2,000,000 as a result of their energy price rise predictions as we move into the second half of the 2022/23 and the 2023/24 financial year (where the predictions are for price rises of circa 170%).

The table below illustrates the effect of the current strategy on street lighting energy costs:

Cost (at current prices) prior to PNL/LED	£1,710,00
Cost (at current prices) post PNL/LED	£550,000
SAVING	£1,160,000

<u>Street lighting energy price rises are predicted to increase all of the above figures by 170%</u>

9. PERSONNEL IMPLICATIONS

9.1 There are no personnel implications associated with this report.

10. CONSULTATIONS

10.1 The report reflects the views of the listed consultees.

11. STATUTORY POWER

11.1 Local Government Acts

11.2 Highways Act 1980 and associated Codes of practice/British Standards.

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Councillor Tudor Davies, Chair of Environment and Sustainability Scrutiny Committee
Councillor Adrian Hussey, Vice Chair of Environment and Sustainability Scrutiny Committee
Stephen Harris, Head of Financial Services and S151 Officer
Rob Tranter, Head of Legal Services and Monitoring Officer
Marcus Lloyd, Head of Infrastructure
Tom Llewellyn, Senior Engineer
Lynne Donovan, Head of People Services
Anwen Cullinane, Senior Policy Officer - Equalities, Welsh Language & Consultation
Ryan Francis, Heddlu Gwent Police

Background Papers:

Link to Regeneration and Environment Scrutiny Committee Report – 15th May 2018 – Future Lighting and Energy Saving Proposals

Link to Cabinet Report - Future Lighting and Energy Saving Proposals – 28th November 2018