

## AGENDA ITEM 7

### RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL

#### CABINET

21st JANUARY 2016

**SERVICE CHANGE PROPOSALS: - OPTIONS FOR REDUCING STREETLIGHTING ENERGY COSTS BY CONVERTING EXISTING LIGHTING UNITS TO LIGHT EMITTING DIODE (LED) UNITS.**

**REPORT OF GROUP DIRECTOR, CORPORATE AND FRONTLINE SERVICES IN DISCUSSIONS WITH THE RELEVANT PORTFOLIO HOLDER, CLLR A MORGAN, LEADER OF THE COUNCIL.**

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#### **1. PURPOSE OF THE REPORT**

- 1.1 The purpose of the report is to provide service change options for reducing revenue costs for street lighting by converting existing lighting units to more efficient light emitting diode (LED) energy saving units.

#### **2. RECOMMENDATIONS**

It is recommended that the Cabinet:

- 2.1 Considers the options set out in the report and agrees the implementation of the package of energy saving measures identified in options 1 and 2, delivering net annual savings of £254k (full year).
- 2.2 In light of the ongoing potential to reduce energy and carbon costs by investing in further packages of LED replacement lighting, Cabinet agrees that savings achieved through the replacement programme can be ringfenced and reinvested in any future replacement programmes that are required.
- 2.3 Endorse the principle that LED technology will be utilised wherever practicable for routine lighting replacement where faults occur.

### **3 REASONS FOR RECOMMENDATIONS**

- 3.1 The Council operates a system of street lighting across the county borough comprised of 28,600 street lights. These installations require regular maintenance, consume energy and attract carbon taxation.
- 3.2 LED lighting offers benefits over conventional lighting by delivering reduced maintenance costs due to the extra longevity of the units. LED units also consume less energy and therefore attract lower carbon taxation costs.
- 3.3 The cost of LED lighting units has fallen sharply in recent years; it is therefore now particularly cost effective to replace existing traditional lighting units with LED units. This builds on previous and ongoing packages of investment in new street lighting technology.
- 3.4 On the basis that it is no longer financially or environmentally prudent to replace failed or faulty lighting with traditional forms of street lights, the default approach going forward should involve LED replacements wherever practicable.

### **4. BACKGROUND**

- 4.1 The Council has already begun a programme of street lighting investment to support the delivery of energy, maintenance and carbon tax savings:
  - Cabinet on the 27<sup>th</sup> August 2015 agreed to invest £642k in LED technology to deliver estimated total savings of £170k per annum.
  - Cabinet on the 10<sup>th</sup> November 2015 further agreed to invest an additional £401k in LED technology to deliver estimated savings of £109k per annum.
- 4.2 The investment noted above is currently being implemented and will yield in-year savings by the end of the financial year and these will be reported through our quarterly performance reports.
- 4.3 As part of the Cabinet decision on the 10<sup>th</sup> November 2015, it was agreed that a further report be presented in 2015/16 setting out options for further investment this year and into 2016/17.

4.4 There is now an opportunity for further in-year investment as identified in the options detailed below:

Options		LED Cost £'000	Additional Investment Required £'000	Energy and Maintenance Savings £'000	Payback Period Years
<b>1</b>	<p><b>Replace all routine street light failures with LED equipment.</b>            Replace existing equipment in 5,532 lighting units with LEDs (the number of maintenance renewals are based on the number of 2014/15 faults). <i>(Note: option 1 requires a lower value of additional investment as funding already exists within existing budgets for replacement costs based on traditional lighting units).</i></p>	1,267	797	196	4.07
<b>2</b>	<p><b>Replace 1,515 residential street lights with LED equipment</b>            Replace existing equipment in 1,515 lighting units with LEDs on Housing Estates</p>	333	333	58	5.7

**Notes:**

- i. Options 1 and 2 are standalone options which can both be implemented individually or with the other option.
- ii. Option 1 is based on historic levels of routine failures, actual failures in 16/17 may vary.
- iii. Actual costs of replacements will be determined by Street Lighting Term Maintenance Contract which is currently at tender stage and due to be implemented from April 2016.

- 4.5 Details of the cost reduction calculations are included at Appendices A and B.

## **5 EQUALITY AND DIVERSITY IMPLICATIONS**

- 5.1 An Equality Impact Assessment (EqIA) screening form has been prepared for the purpose of this report. It has been found that a full report is not required at this time. The screening form can be accessed by contacting the author of the report or the Cabinet Business officer.

## **6 CONSULTATION**

- 6.1 Consultation was undertaken prior to implementing service change proposals related to part-night lighting. Whilst some issues were raised through the process, the overall feed back was broadly positive. These proposals do not involve turning off or part night lighting and therefore do not constitute a reduction or detriment to existing service provision. The reduction in costs arise from reduced maintenance, energy and carbon costs and represent a more effective and efficient use of public resources without service reduction. Consequently further consultation is not considered appropriate.

## **7 FINANCIAL IMPLICATION(S)**

- 7.1 The table at 4.4 indicates the investment costs associated with each option. Individually option 1 and 2 will require £797k and £333k respectively or if both agreed £1.130M.
- 7.2 The Council is currently projecting an overall revenue underspend for 2015/16. As at Quarter 2, reported to Cabinet on the 24<sup>th</sup> November 2015, the projected underspend amounted to £2.352M.
- 7.3 Implementation of a replacement programme for street lights will deliver ongoing revenue savings, arising from reduced energy, maintenance and carbon tax costs.
- 7.4 If Cabinet agree to both options presented in this report it is recommended that this is funded through one off investment made available by using a proportion of the overall council underspend and that this is factored into the Quarter 3 Revenue update that will be reported to Cabinet shortly.

- 7.5 The Table at 4.4 indicates that annual revenue savings of £254k are projected and it is proposed that this saving (plus any consequential further maintenance savings) is ringfenced, along with the savings arising from the November report, within the service to establish an ongoing resource to fund further LED replacement programmes as required, during the next two financial years (that is, to the 31<sup>st</sup> March 2018). Details of further replacements will be incorporated into our quarterly performance reporting arrangements.

## **8 LEGAL IMPLICATIONS OR LEGISLATION CONSIDERED**

- 8.1 There is no statutory basis to the provision of street lighting, albeit once provided the council has a duty to maintain the infrastructure in a safe condition
- 8.2 The following legislation governs the Councils provision of street lighting:
- The Highways Act empowers local authorities to light roads but does not place a duty to do so;
  - The Council has a duty of care to road users and has an obligation to light obstructions on the highway;
  - The Council has a statutory duty under the Highways Act to ensure the safety of the highway and this includes any lighting equipment placed on the highway;
  - The Electricity at Work Regulations impose a duty on owners and operators of electrical equipment to ensure its safety.

## **9 LINKS TO THE COUNCILS CORPORATE PLAN / OTHER CORPORATE PRIORITIES/ SIP.**

- 9.1 This proposal reinforces the priorities set out in the Rhondda Cynon Taf Single Integrated Plan by maintaining/improving the highways infrastructure.

## 10 CONCLUSION

10.1 Following a review of savings opportunities and risks associated with implementation, the preferred option recommended to Cabinet for the street lighting replacement LEDs are as follows:

Options		Estimated Cost £'000	Estimated Saving £'000	Payback Period Years
1 & 2	Replace all routine street light failures with LED equipment and replace 1,515 residential lights with LED equipment	1,130	254	4.5

10.2 The preferred option is recommended on the basis that:

- The package can be implemented during 2016/17, yielding full year gross savings of £254k per year in 2017/18.
- A high percentage of the residential lights are on traffic routes, the reduction in maintenance would lead to less traffic management requirements and greater safety for the operatives. The quality of the light will also aid visibility in high risk areas.
- This package is affordable within available funding parameters.
- The option would reduce annual carbon emissions by 874.2 Tonnes, saving £15,736 in carbon tax at the current rate of £18 per Tonne.

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Appendix A – LED Maintenance Renewals

Wattage	LED No of units	Savings Per Unit		Total Savings			Existing Replacement Cost		LED Replacement Cost		Additional LED Investment
		£	£	£	£	£	£	£	£		
		Energy	Carbon	Energy	Carbon	Total	Lantern Per Unit	Total Cost	Lantern Per Unit	Total Cost	
55 watt	2,189	28.00	2.02	61,292	4,418	65,710	64.74	141,716	220	481,580	
55 watt part night	351	14.77	1.06	5,184	374	5,558	64.74	22,724	220	77,220	
70 watt	1,682	35.82	2.58	60,249	4,343	64,592	103.37	173,868	220	370,040	
70 watt part night	265	19.11	1.38	5,064	365	5,429	103.37	27,393	220	58,300	
90 watt	166	47.80	3.44	7,935	572	8,507	67.66	11,232	220	36,520	
90 watt part night	30	25.41	1.83	762	55	817	67.66	2,030	220	6,600	
100 watt	753	48.29	3.48	36,362	2,621	38,983	107.03	80,594	220	165,660	
100 watt part night	96	25.68	1.85	2,465	178	2,643	107.03	10,275	220	21,120	
<b>Total</b>	<b>5,532</b>			<b>179,313</b>	<b>12,926</b>	<b>192,239</b>		<b>469,831</b>		<b>1,217,040</b>	<b>747,209</b>
<b>Cost avoidance – energy inflation estimate at 2%</b>						<b>3,927</b>					
<b>Total annual energy savings including cost avoidance</b>						<b>196,166</b>					
<b>Additional Rewiring Costs</b>											<b>50,000</b>
<b>Total Additional Investment Required</b>											<b>797,209</b>

Notes

1. The number of lights from each wattage is estimated from 2014/15 renewals
2. Carbon reduction budget held Corporately in Misc Finance
3. Cost avoidance figures are based on an annualised estimated increase in energy costs for the next 10 years

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Appendix B – LED Housing Estates

Wattage	LED No of units	Savings Per Unit		Total Savings			Existing Replacement Cost	
		£		£			£	
		Energy	Carbon	Energy	Carbon	Total	Lantern Per Unit	Total Cost
55 watt	494	28.00	2.02	13,832	997	14,829	220.00	108,680
55 watt part night	487	14.77	1.06	7,193	518	7,711	220.00	107,140
70 watt	220	35.82	2.58	7,880	568	8,448	220.00	48,400
70 watt part night	110	19.11	1.38	2,102	152	2,254	220.00	24,200
90 watt	1	47.80	3.44	48	3	51	220.00	220
90 watt part night	2	25.41	1.83	51	4	55	220.00	440
100 watt	120	48.29	3.48	5,795	418	6,212	220.00	26,400
100 watt part night	81	25.68	1.85	2,080	150	2,230	220.00	17,820
<b>Total</b>	<b>1,515</b>			<b>38,981</b>	<b>2,810</b>	<b>41,791</b>		<b>333,300</b>
<b>Maintenance Savings</b>						<b>15,072</b>		
<b>Cost avoidance – energy inflation estimate at 2%</b>						<b>854</b>		
<b>Total annual energy savings including cost avoidance</b>						<b>57,717</b>		

Notes

1. Carbon reduction budget held Corporately in Misc Finance
2. Maintenance savings are based on units being replaced as part of this proposal with a 10 year life
3. Cost avoidance figures are based on an annualised estimated increase in energy costs for the next 10 years

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