ELECTRICITY STREET LIGHTING

REPORT BY DIRECTOR OF INFRASTRUCTURE SERVICES

ABSTRACT
This report notes changes in the measurement of electricity consumption for street lighting, forecast future budget implications and current in year savings as a result of a change in the procurement model, with proposals made to utilise these savings on a spend-to-save basis.

1 RECOMMENDATION

1.1 It is recommended that the committee:

i) notes the changes in electricity charges for street lighting;
ii) notes the resulting projected in year budget savings;
iii) approves the proposed spend to save lantern conversions to UK LED lights;
iv) agrees the requirement for future developments to include energy efficient lighting.

2 BACKGROUND

2.1 The council’s electricity supply for street lighting (including all road infrastructure such as traffic signs, traffic signals) is provided via a national contract arranged by Procurement Scotland. Procurement Scotland purchase electricity on the commodity market and seek the most economical price for the 32 councils but the price is subject to market fluctuations, and as members are aware electricity prices continue to fluctuate noting recent announcement of 15-19% increases in domestic tariffs. The tariff for street lighting has increased by 8.8% from 1 July 2011.

2.2 There are nationally agreed “burning hours” for street lights which are determined from the hours of darkness over a twelve month period over which street lights operate. These hours were 3912 hours per annum but have recently been revised nationally as 4130 hours per annum, a 5.6 % increase.

2.3 Against this increase, the Roads division have sought to move from the existing unmetered supply to “passive half hourly” supply. Street lighting infrastructure does not include electricity meters at the supply points which are the normal arrangement in housing/building supplies. Rather the electricity is fed direct to the infrastructure and a calculation is made for electricity consumption based on “burning hours”. By utilising a consultancy service which calculates the electricity consumption based on half hourly intervals using actual daily sunrise/sunset times, there is a saving compared to using unmetered supply as the price of electricity supplied on this basis is charged at a cheaper rate.

2.4 The consultancy service costs are circa £3,200 per annum and a company, Power Data Associates, has been appointed under delegated powers.

2.5 The differences in the charges between passive half hour and non metered supply is circa a 25% reduction and this will offset both the increase in burning hours and this year’s electricity price increase, resulting in a saving circa £120,000 on the Roads street lighting 2011/2012 energy budget (£900,000).

2.6 These savings will be made in this financial year 2011/12 and future savings will be dependent on the longer term commodity price for electricity and will be considered in future years’ budget allocations.
2.7 It is noted that these savings are purely financial and are brought about by the rates charged for different types of electricity (tariff) rather than a physical reduction in the electricity consumption and associated carbon footprint.

2.8 The in-year savings can potentially be used on a spend to save basis to further reduce the electricity cost for street lighting, reduce the carbon usage associated with street lighting thereby contributing to the council’s need to reduce its carbon footprint and seek to protect the council against future price rises.

3 **PROPOSAL TO USE LED LIGHTS**

3.1 Report 186/09 presented to Committee in March 2009 noted the potential to reduce energy consumption by the use of light emitting diodes (LED) lamps but that technology was not at that time sufficiently developed and that advances in technology would be monitored.

3.2 The performance and reliability of LEDs have now improved and the capital costs, whilst still approximately 150% of the cost of non LED equivalent have reduced.

3.3 LED lights have the potential to reduce further maintenance costs as they have a longer life but also reduce electricity consumption and associated carbon footprint with approximately 60% energy consumption for the same output in comparison to non-LED units.

3.4 As part of our annual lantern conversion programme a number of small trials of LED from various manufacturers have now been undertaken and found to be suitable in service.

3.5 It is therefore proposed to utilise the in year savings on electricity costs to extend the annual conversion programme to include a larger number of LED Lanterns. These conversions assist in reducing the electricity cost and carbon usage associated with street lighting and extending the LED trial will reduce these even further. However due to the higher capital costs it is not viable at this moment in time to wholly undertake all conversions with LEDs. It is anticipated that on the basis of a maximum budget saving of £160,000 funding, 320 lanterns can be changed providing a possible electricity saving of £3,800 per annum in future years (albeit the actual savings are dependent on electricity prices). Maintenance savings will be nominal in the first instance due to the limited amount of LED lights being used (320 out of over 21,000 lights) but will become more significant in future years. With the extra capital cost of £200 per unit the pay back period for the lanterns is anticipated to be six years (six years reduced electricity costs of £12 per year plus savings on future maintenance of £20 per year). The LED lights are suitable for dimming in line with the strategy for dimming which the council has previously agreed.

3.6 The Committee are asked to approve these proposals and it is anticipated that LEDs will be used in the following areas:

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<thead>
<tr>
<th>Auchterhouse</th>
<th>Craigo</th>
<th>Dykehead</th>
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<tr>
<td>East Haven (under bridge)</td>
<td>Grahamston Cottages</td>
<td>Inchbare</td>
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<td>Kirkton of Kingoldrum</td>
<td>Kirktom of Kinnettles</td>
<td>Kirkton of Kinnettles</td>
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<td>Leysmill</td>
<td>Menmuir</td>
<td>Letham Grange</td>
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<td>Whigstreet</td>
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4 **NEW DEVELOPMENTS**

4.1 One of the ongoing challenges in reducing electricity consumption and the associated carbon footprint is that at the same time as energy savings are implemented on the existing lighting stock, the stock continues to grow due to commercial or residential developments adopted for maintenance purposes by the council. In order to mitigate the impact of these developments on the quantum of lighting stock owned by the council into the future it is proposed to standardise the requirement for LED lights in all new developments and the Committee are asked to endorse these proposals.
5 RISK

5.1 The risk of failing to meet carbon reduction commitment has been identified on the Roads division’s risk register and has a factor of 8, just below the tolerance line. The above proposals will assist in managing this risk and in delivering the required carbon reductions. There is a risk that the projected in-year saving may not be fully achieved depending on the applied tariff for the purchase of electrical energy once determined by Procurement Scotland.

6 FINANCIAL IMPLICATIONS

6.1 This report details the potential 2011/2012 savings to the Roads Revenue street lighting energy budget due to changes in the method of measuring street lighting electricity use. The final amount of these savings is dependent on the actual rates for electricity secured by Procurement Scotland in the current financial year.

6.2 It is proposed to use these savings on a spend to save basis to reduce future years’ electricity consumption and the associated carbon footprint. Future years’ financial savings will be addressed through the annual budget setting process.

7 HUMAN RIGHTS IMPLICATIONS

7.1 There are no human rights implications as a result of this report.

8 EQUALITIES IMPLICATIONS

8.1 The issues dealt with in this report have been determined as exempt from requiring an equalities assessment.

9 ANGUS COMMUNITY PLAN AND SINGLE OUTCOME AGREEMENT

9.1 This report contributes to the following local outcomes contained within the Angus Community Plan and Single Outcome Agreement 2011 – 2014:

- Our communities are developed in a sustainable manner
- Our natural and built environment is protected and enjoyed
- Our carbon footprint is reduced

10 CONSULTATION

10.1 The Chief Executive, Head of Law and Administration and Head of Finance have been consulted in the preparation of this report.

11 CONCLUSION

11.1 A change in the procurement model for the purchase of electrical power for street lighting in Angus has given rise to the prospect of a significant financial saving in financial year 2011/12. It is proposed that the in-year saving be used on a spend-to-save basis to replace a proportion of life expiring street light units with light emitting diode units thereby reducing both the council’s energy consumption associated with this service and the energy cost of providing same.

ERIC S LOWSON
DIRECTOR OF INFRASTRUCTURE SERVICES
NOTE:

The background papers, as defined by Section 50D of the Local Government (Scotland) Act 1973 (other than any containing confidential or exempt information) which were relied on to any material extent in preparing the above report are:


Roads/JG/IAC