

**STREET LIGHTING ENERGY EFFICIENCY – ALTERNATIVE FUNDING OPTION
(PBB OPTION ENV027)**

1 SUMMARY

- 1.1 In June 2013 the Environment & Housing Committee received a report which highlighted the increasing street lighting energy costs from £588k in 2011/12 to £865k in 2013/14 along with an ageing profile of steel lighting columns requiring replacement. The report recommended the implementation of a programme of investment aimed at reducing energy and maintenance costs along with carbon emissions which incur a carbon tax.
- 1.2 The Council Priority Based Budget (PBB) process in 2014 was the structure identified to determine the level of Council investment required to install energy efficient LED lanterns and new columns to reduce energy, carbon tax and maintenance costs to deliver £0.324m of savings. PBB option ENV027 was approved by Stirling Council on 20 February 2015 which began a programme of Council investment in street lighting infrastructure.
- 1.3 The purpose of this report is to present alternative funding options following a detailed business case to replace the majority of our street lights with new energy efficient LED lights along with upgrading a number of ageing lighting columns to make them compatible with the new lanterns. The funding proposals within this report would begin financial year 2015/16.
- 1.4 The funding options being considered would secure a viable long term loan either with the Green Investment Bank (GIB) or alternatively by Prudentially Borrowing via the Public Works Loan Board (PWLb).
- 1.5 Savings from energy, carbon reduction and maintenance budgets will allow the Council to fully fund loan repayments and meet the PBB ENV027 savings target of £0.324m over 4 years from either the GIB or PWLB funding option.
- 1.6 Borrowing the whole investment cost of £9.882m (plus £0.200m interest free Salix loan already approved) either from GIB or Prudential Borrowing, would release £2m of capital funding already earmarked against street lighting within the Council's core capital programme over the next 4 years, to invest in other capital projects which would otherwise have had to be shelved or delayed to a later time.

- 1.7 The key outcome figures from the proposed investment are presented in Appendix 1.

2 OFFICER RECOMMENDATION (S)

The Council agrees:-

- 2.1 to delegate authority to the Chief Finance Officer and Director of Housing & Environment to finalise and accept the loan offer from the Green Investment Bank to borrow £9.882m to invest in energy improvements to the street lighting infrastructure over the next 4 financial years (starting 2015/16);

OR

- 2.2 to conclude negotiations with GIB and fund the investment programme entirely from Prudential Borrowing over the next 33 years.

3 CONSIDERATIONS

- 3.1 The 2014 Priority Based Budget (PBB) process originally approved street lighting savings of £0.324m after 5 years from upgrading our existing lighting stock with energy efficient LED lanterns along with replacing our oldest lighting columns, 25 years and over. Savings would be generated from a reduction in energy costs, maintenance costs and carbon tax reduction.
- 3.2 The approved General Services Capital Programme for 2014/15 agreed to fund investment in low energy street lighting to the value of £8.475m over 5 years. Of this sum £2.800m was earmarked against the core capital programme, the remainder from borrowing. This sum was less than the £14.243m that was originally requested to convert all street lights to LEDs under the PBB option identified in paragraph 3.1. This lower sum would have resulted in significantly fewer lights being upgraded to new LEDs.
- 3.3 Work began on street lighting replacement in 2014/15 and £0.800m of the £2.800m earmarked in the capital programme was used in that year. This leaves a balance of £2m not yet applied. With tight financial settlements expected over the next few years, funding the street lighting project through borrowing will free up this £2m greatly assisting delivery of other priority capital investment projects, perhaps delivering other additional revenue savings themselves that may otherwise have been foregone.
- 3.4 Since the original business case was worked up, officers have been pursuing other funding options with the Green Investment Bank (GIB) to circumvent Prudential Borrowing with more advantageous funding opportunities and allow the majority of lights to be replaced with LEDs. Detailed discussions and financial modelling are at an advanced stage with GIB to fund the investment from debt sculpted around the timing of the savings.
- 3.5 In addition, a £0.200m interest free loan with Salix Finance Ltd repayable up to 8 years has been secured. The Salix funding has to be used to replace the sodium lights with energy efficient lights, and the funding will be used to offset any other borrowing.

- 3.6 Unlike Salix funding, the GIB loan can be used both for energy efficient lights and replacement lighting columns, but to be a viable spend to save option, the bulk of the spend would need to be on replacing the inefficient sodium lights as this is where the bulk of the savings will be achieved.
- 3.7 Loan capital of £9.882m (plus £0.200m interest free Salix loan already approved) will allow replacement of around 12,000 lanterns to new energy efficient LED lights (approx. 87% of our stock) and up to 4,000 columns which are 25 plus years old or most at risk of failure (approx. 85% of the stock).
- 3.8 The advantages of using the GIB loan are:-
- Flexibility around loan repayments, including an option to defer all loan repayments until after the 4 year investment programme to replace street lights has been completed. Note however, the interest deferred in the first 4 years of borrowing would still be rolled up and added to the sum to be repaid from year 5 (2019/20), the first year repayments begin. Under Prudential Borrowing, principal loan repayments must begin the year after borrowing (interest only in the drawdown year).
 - The interest rate applicable to the debt is fixed throughout the loan period. The final rate will be set at time of financial close. Where interest rates are subject to fluctuations or forecast to rise in the medium term, this will be a benefit. However, where rates are stable or forecast to fall, it is less attractive. With Prudential Borrowing, the PWLB rate will be lower at any defined point than GIB rates – approx. 0.65% lower, but it cannot be fixed. This means, within a 4 year investment timescale, the rates applicable now will not necessarily be the same as rates applicable to sums borrowed in year 4, they may be higher or lower. Expert guidance is that rates are likely to increase in the medium term.
- 3.9 Should the Council approve borrowing from GIB, they will be required to pay a one off Arrangement Fee and Commitment Fee c £0.130m. This can be paid either up front or deferred and rolled into the overall loan sum to be repaid over the term of the loan. In addition, there will be an annual £3k Monitoring Fee due. Again this can be rolled up into the loan. These fees have been accounted for in the GIB figures presented within this report.

4 FUNDING OPTIONS CONSIDERED

- 4.1 Different funding options put forward by GIB have been considered and 2 have been presented in the report to compare against the Council funded Prudential Borrowing using the PWLB option:
- Scenario 2, sculpted debt - Interest paid during installation, fees capitalised.
 - Annuity over 33 Years - Interest paid during installation, fees capitalised.
- 4.2 In determining the most advantageous funding option between Council Prudential Borrowing or GIB loan debt, both organisations used the same savings data pulled out from the Scottish Futures Trust (SFT) modelling toolkit. The Council entered into the toolkit all its existing street lanterns along

with energy efficient replacements and the phasing of the changes over the next 4 years. The toolkit applies future price inflation increases over the life of the assets and calculates the predicted energy and carbon reduction savings.

- 4.3 The options have been tested against 2 criteria: firstly, financial viability, ie savings must have a positive Net Present Value (NPV) after including both annual debt repayments and deliver £0.324m agreed PBB savings; secondly, future on-going budgets, after loan debt and PBB savings, must be sufficient to cover future on-going costs and not cause any in-year shortfalls.
- 4.4 All funding options when modelled deliver a positive NPV, ie savings generated more than exceed the annual debt repayments. The street lighting business case therefore indicates that this is a financially viable investment project where savings exceed the cost of funding. The model also indicates that the GIB options return slightly higher NPV returns over the loan term. See Appendix 2 and Appendix 3.
- 4.5 The payback is 23 years for GIB Annuity over 33 years and 24 years for the other options identified in paragraph 4.1.
- 4.6 The second criteria of being self-financing each year after paying loan debt and delivering PBB savings is only achievable under the options: Council funded PWLB and GIB Annuity over 33 years.
- 4.7 However, all the options require reductions to the street lighting maintenance budget in future years to ensure enough budget to cover energy and carbon tax costs, to a point where the maintenance budget will require additional resources. This will be a budget issue that will require addressing at some point, but should not invalidate the financial benefits of the business case. Some additional budget provision would require to be reintroduced from around year 5 onwards on a phased basis.
- 4.8 Under the terms of the GIB loan, should the Council fail to invest in energy efficient street lighting that achieves a minimum level of Carbon Reduction Commitment, eg if more funding had to go into replacing street light columns than anticipated, then GIB will have the right to withdraw the terms of the loan. However it should not be a problem achieving this minimum based on the number of lights earmarked for replacement.
- 4.9 There is a direct link with the recommendation in this report to a report presented to Stirling Council on 8 October 2015 in relation to the installation of a 5MW Solar Photo Voltaic Farm at Lower Polmaise which is also using GIB funding. If both the street lighting and PV Farm projects are funded by GIB, there is scope to negotiate a better deal over the fees identified in paragraph 3.9.
- 4.10 A summary comparing the financial options is presented in paragraphs 5.5 & 5.6 below.

5 POLICY/RESOURCE IMPLICATIONS AND CONSULTATIONS

| | |
|---|----------|
| Policy Implications | |
| Equality Impact Assessment | No |
| Strategic Environmental Assessment | No |
| Single Outcome Agreement | Yes |
| Diversity (age, disability, gender, race, religion, sexual orientation) | No |
| Sustainability (community, economic, environmental) | Yes |
| Effect on Council's green house gas emissions | Decrease |
| Strategic/Service Plan | Yes |
| Existing Policy or Strategy | Yes |
| Risk | Yes |
| Resource Implications | |
| Financial | Yes |
| People | Yes |
| Land and Property or IT Systems | No |
| Consultations | |
| Internal or External Consultations | Yes |

Equality Impact Assessment

- 5.1 The contents of this report were assessed using the EqIA Relevance Assessment Form. It was determined that an Equality Impact Assessment was not required as this is a technical report identifying funding options for this project.

Strategic Environmental Assessment

- 5.2 This report does not relate to a Plan, Policy, Programme or Strategy therefore a Strategic Environmental Assessment does not apply.

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- 5.3 The proposals set out in this report are consistent with the following key priority: -

- Adopt a pragmatic approach to sustainability that protects and enhances the local environment.

Single Outcome Agreement

- 5.4 Not applicable.

Other Policy Implications

- 5.5 Following consideration of the policy implications of this report, no further relevant issues have been identified.

Resource Implications

Financial

- 5.6 The table below compares the Council versus Green Investment Bank investment options and potential savings.

Table 1: Comparison of Funding Options

| Option Results | Funding Option | | |
|--|-------------------------------|---|---------------------------|
| | Council PWLB – 33 Years | GIB – Scenario 2 Sculpted Debt – 29 Yrs | GIB – Annuity 33 Years |
| Payback Year | 24 | 24 | 23 |
| NPV @ 5.5% - £'000 (Treasury + Inflat'n) | 6,951 | 7,313 | 7,259 |
| Is it Self- financing (future budget > future costs) | Yes | No, exceeds available budget by Year 24 | Yes |
| Cumulative Saving £'000 after Loan Debt by 2020/21 (but before PBB saving) – Appendix 2 | 169 | 354 | 189 |

- 5.7 Table 2 projects potential in-year budget surplus, **after** loan debt and agreed PBB savings ie budget exceeds likely costs, for first 5 years should the programme of work run to schedule. However, it should be noted that **any surplus made in year should not result in a formal budget reduction** as this will have a knock on impact on future budget availability to cover future costs.

Table 2: Projected In Year Budget Surplus – Years 1 -5

| In Year Net Budget Surplus: | Council PWLB – 33 Years £'000 | GIB – Scenario 2 Sculpted Debt – 29 Yrs £'000 | GIB – Annuity 33 Years £'000 |
|-----------------------------|--|--|------------------------------------|
| Year 1 | 150 | 166 | 166 |
| Year 2 | 279 | 313 | 313 |
| Year 3 | 290 | 371 | 372 |
| Year 4 | 121 | 255 | 256 |
| Year 5 | 0 | 183 | 0 |

- 5.8 The 3 options all have individual merits, the GIB Scenario 2 sculpted debt - interest paid during installation, has the greatest potential to deliver higher financial returns in the next 5 years when austerity cuts are likely to be at their highest, but it is also the only option where there would be a budget gap by year 24. Option, GIB – Annuity 33 years delivers higher budget savings than Council funded Prudential Borrowing without going into budget deficit. All options will put pressure on future street lighting maintenance budgets to

varying degrees as stated in paragraph 4.7, but it is expected that this can be planned and managed through strategic budget planning.

- 5.9 It should be noted that the Tables above reference savings per modelling outcomes for comparison purposes, but actual savings will be predicated on different factors including actual interest rates, timescale for installing LED lanterns, cost of new LED lanterns, number of lanterns installed etc and therefore may be less.

Consultations

- 5.10 The Finance service has been in negotiations with representatives of the Green Investment Bank, assisted by the Roads Service.

| | Tick (✓) to confirm |
|---|---------------------|
| The appropriate Convener(s)/Vice Convener(s), Portfolio Holder and Depute Portfolio Holder have been consulted on this report | DG ✓ NB ✓ |
| The Chief Executive or Director has been consulted on this report | GOS ✓ RS ✓ |

6 BACKGROUND PAPERS

- 6.1 Preparing for a Street Lighting Energy Reduction Strategy, Environment & Housing Committee, 6 June 2013.
- 6.2 Revenue Budget and Determination of Council Tax 2014/15, Stirling Council, 20 February 2014.
- 6.3 General Services Capital Programme 2014/15 to 2018/19, Stirling Council, 20 February 2014.
- 6.4 Installation of a 5MW Solar Photovoltaic Farm at Lower Polmaise, Stirling Council, 8 October 2015.



7 APPENDICES

- 7.1 Appendix 1 - Key Figures from Proposed Investment.
- 7.2 Appendix 2 - Council & GIB Option Comparison – Cumulative Savings / (Cost Avoidance) Mapped Against Borrowing
- 7.3 Appendix 3 - Comparison Cumulative NPV Figures over Loan Term (Inflation at 2%)
- 7.4 Appendix 4 – EqIA Relevance Assessment Form.

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Date 1 December 2015

Service Reference _____