

Climate Change Action Committee

Meeting Date: Thursday, 06 April, 2017
Location: Jervis Bay Rooms, City Administrative Centre, Bridge Road, Nowra
Time: 4.00pm

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Agenda

1. **Apologies**
2. **Confirmation of Minutes**
Nil
3. **Declarations of Interest**
4. **Reports**
 - CC17.1 Streetlight LED project1
 - CC17.2 Planning and Development Services - Sustainability Status Report14
5. **General Business**

Membership

Mayor
All Councillors
General Manager

Quorum – Five (5)

Purpose

1. To make recommendations to improve Councils response to potential impacts of climate change.
2. To improve sustainability within the Shoalhaven Local Government area.
3. Develop a Prioritised Action Plan that will empower the Shoalhaven Community to be more sustainable and improve the sustainability of Council operations and activities.
4. Identify and action funding opportunities which will improve Council's sustainability and its understanding and readiness of potential impacts of climate change.
5. Identify ways to educate the community about sustainability and the potential impacts of climate change.
6. Display strong leadership to the community by recommending sustainability and resilience building actions to Council for consideration.

CC17.1 Streetlight LED project

HPERM Ref: D17/98852

Group: Assets & Works Group

Attachments: 1. Public Lighting Energy Efficiency Proposal - Endeavour Energy [↓](#)

Purpose / Summary

This report outlines advice from Endeavour Energy on an opportunity to implement a large scale roll out of LED street lighting.

Recommendation (Item to be determined under delegated authority)

That Council prepare a business case which includes the following:

1. Detailed comparisons of proposed technologies (including lifespan of the technologies);
2. Consideration of projected increases in energy and service costs;
3. Options for program roll-out, including timeframe comparisons, and the estimated costs, savings, and payback periods;
4. Data related to expected carbon reduction levels for the options presented;
5. An outline of the next steps for Council, including a summary of procurement options;
6. Comparison of the bulk change compared with other projects such as the purchase of Green Power, and
7. Summary and recommendations about external funding opportunities

Options

1. As recommended prepare a business case

Implications: The LED lighting project business case will be further developed and only external funding options considered initially. Resources need to be identified to progress.

2. Propose an alternative

Implications: To be advised

Background

In early 2017 Endeavour Energy approached Shoalhaven City Council to consider the implementation of a large-scale LED street lighting conversion, transitioning existing street lighting service in the city to a high-efficiency, environmentally friendly, low cost and superior light.

The Shoalhaven City objectives would be to:

Install LED street lighting technology to improve the energy efficiency of existing street lighting. Reduce current carbon emissions and increase Council's energy efficiency.

Expected outcomes through the implementation of this Project are:

- Reduced energy usage and generate savings in the future
- Reduced carbon emissions
- Reduced maintenance requirements

According to the Australian Street Lighting Strategy, street lighting is the single largest source of greenhouse gas emissions from local government. Nationally, the energy costs of public lighting in Australia exceeds \$125 million and the greenhouse gas emissions account for between 30-60% of local government's greenhouse gas emissions see following link;

http://energyrating.gov.au/sites/new.energyrating/files/documents/Draft-streetlight-Strategy_0.pdf

If supported the Shoalhaven City LED (Light Emitting Diode) Street Lighting Project has the ability to convert up to 6,200 traditional street lights (mercury vapour) into energy efficient LED technology. This represents approximately \$240,000 in savings per annum after the initial pay-back period of approximately 8 years, based on current lighting costs. Changing the street lighting fleet will result in reducing energy consumption and less carbon emissions being released into the atmosphere.

Council staff may undertake further investigation and report back on the opportunities of alternative suppliers, future tariffs, pay-back periods and potential funding options for the capital program.

Community Engagement

The community will benefit in the long term with reduced costs for the City and improved lighting, no consultation has been undertaken to date.

Financial Implications

This project represents approximately \$240,000 in savings per annum after the initial pay-back period of approximately 8 years, based on current lighting costs. A business case would detail this further. The initial planning resource needs to be considered.



Public Lighting Energy Efficiency Proposal

Background

- In 2015/2016 Endeavour Energy installed 14,950 LED streetlights on behalf of 9 Western Sydney councils in the 'Light Years Ahead' project, co-ordinated by WSROC.
- It is estimated the project will deliver \$21 million of savings and 74,000 tonnes of CO2 emissions over 20 years.
- The project has improved reliability through reduced spot failures, resulting in better public lighting and community safety.
- Community feedback has been positive, with improved lighting levels and better uniformity making residents feel safer.



Changes since ‘Light Years Ahead’

- Now 2 products approved for the program
 - Gerard StreetLED 14W (17W system load)
 - GE P4/P5 Evolve 25W (25W system load)
- NNSW supply contracts generated lower purchase pricing.
- Some further efficiencies in project delivery.

This has resulted in:

- Opportunity to generate greater savings in greenhouse emissions
- a reduction in price of 20-35% per LED installed, depending on product selected.
- shorter payback periods, typically 7-9 years.



Project pricing – How it works

Capital cost:

1. Two prices are supplied per product, one offering a bulk lamp replacement (BLR) discount where the LED installation occurs in lieu of a BLR service.
2. Customer pays the one-off capital charge to Endeavour for the installation of new LED's, which is inclusive of any residual capital value (TC5) of the removed asset, where applicable.
3. Energy savings certificates are eligible for creation under the project. The full value of certificates created will belong to the customer.

Project pricing – How it works (continued)

Annual cost:

1. Change in Street Light Use Of System (SLUOS) charges. Each LED installed will migrate to TC4 (gifted annuity) maintenance rate. For most assets that provide shortest payback, the rate *increases* by around \$11-\$12 per annum.
2. Energy savings generated – depending on product chosen and average energy price over the product's life, energy saving per LED is estimated at \$45-\$50* per annum.

Note the estimated net result is a reduction in annual costs per LED installed of \$33-\$39 per annum.

*Based on assumed \$0.15c average energy price over life of product. Customer to confirm their own energy charges and annual savings.

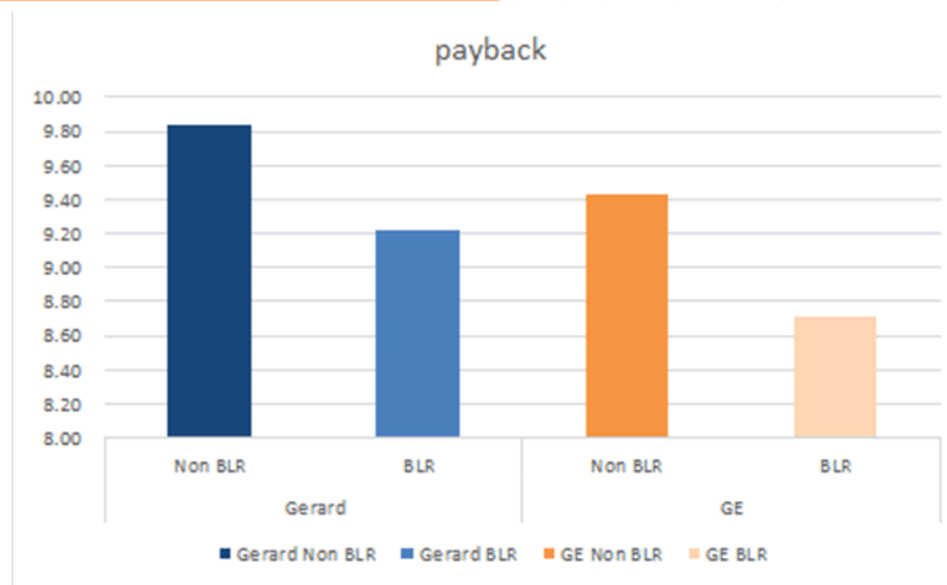
Example: 80W mercury vapour replacement - (TC1 legacy) ex GST

Approved Product	Gerard StreetLED 14W (17W system load)	GE P4/P5 Evolve 25W (25W system load)
Capital BLR charge (discounted)	\$367.49	\$296.25
Capital Non-BLR charge	\$391.15	\$319.91
Residual capital value (TC5)	\$27.00	\$27.00
Estimated energy certificates value (assume \$20/certificate)	\$67.00	\$60.00
Change in SLUOS	+\$10.27	+\$10.27
Watts saved per hour	78.8W	70.8W
Estimated energy saving/annum (4306 hrs/annum@\$0.15c)	\$50.90	\$45.73

Estimated Payback

Example council: Capital cost (ESC's included) and annual saving

Payback					
		capital	annual saving	payback	
Gerard	Non BLR	\$ 2,323,052	\$ 236,045	9.84	
	BLR	\$ 2,176,171	\$ 236,045	9.22	
GE	Non BLR	\$ 1,923,137	\$ 203,967	9.43	
	BLR	\$ 1,776,256	\$ 203,967	8.71	



Benefits

Financial:

- 10 year warranty period on LED's to minimise the risk of early failure.
- Payback period less than warranty period, and expected minimum life of 12 years. Continued testing and monitoring suggests fittings may last longer.
- After payback, estimated saving per light of \$33-\$39 per annum.

Environmental:

- The existing high intensity discharge (HID) technology lamps all contain mercury. LED's contain no mercury, and there are no lamps to replace every 3-4 years.
- Energy consumption is reduced by approximately 80%, reducing greenhouse gas emissions, helping customers to meet their sustainability targets.

Community:

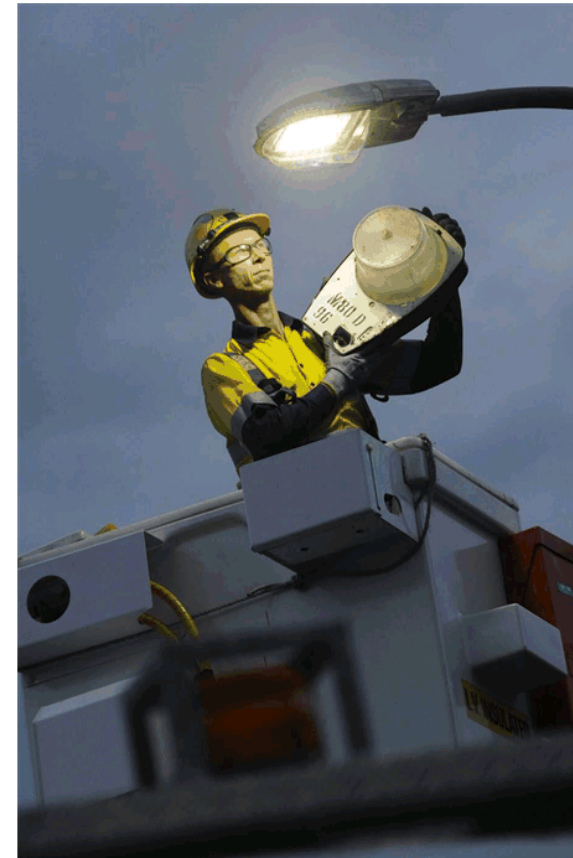
- Improved uniformity of lighting and reduced failures, meaning residents feel safer at night

What will happen if customers do not wish to proceed?

- If customers do not wish to proceed, Endeavour Energy will continue to maintain existing lanterns until they reach the end of their serviceable life.
- At that time, LED lanterns will be installed by Endeavour Energy to replace existing technology, with new LED's being migrated to TC3 (annuity) capital and maintenance rate.

Next steps

- Evaluate program and prepare business case for approval
- Contact an accredited certificate provider (ACP) for confirmation of energy savings, estimated value of ESC's to be created, and volume of greenhouse emissions to be saved. This information will support your business case.
- Advise Endeavour Energy of intention to proceed, and we will work with you to build a rollout based on timeframes, budget, and preferred geographical areas.



Questions?



CC17.2 Planning and Development Services - Sustainability Status Report

HPERM Ref: D17/24647

Group: Planning Environment & Development Group
Section: Environmental Services

Purpose / Summary

To outline the sustainability and climate change adaptation initiatives that are currently active or have occurred in the recent past led by the Planning and Development Services Group.

Recommendation (Item to be determined under delegated authority)

That the Committee accept the sustainability status report for information.

Options

1. That Council accept the sustainability status report from the Planning and Development Services Group for information.

Implications: This report provides Councillors with a baseline of what the organisation is currently doing with regards to sustainability. It provides an accurate picture of what is possible within the current budgetary constraints.

2. Council request more detailed information on specific sustainability activities.
3. Council propose an alternative recommendation.

Background

Sustainability is essentially development that doesn't compromise the ability of future generations to meet their own needs. Sustainability can increase revenue, reduce energy expenses, reduce waste expenses, reduce materials and water expenses, increase employee productivity, reduce hiring and attrition expenses, and reduce strategic and operational risks

Council has a lot of information on sustainability on its webpage at <http://shoalhaven.nsw.gov.au/Environment/Sustainability>. This details many of the projects and initiatives the organisation has undertaken and offers guidance to residents. In 2011-2015 Council developed and implemented a Sustainability Action Plan which listed prioritised activities for investment. These activities were funded through a Waste Levy which is no longer available. Examples of the types of initiatives the Group manages in the absence of this funding stream are listed below.

Jellybean Park Misting Sculpture

Grant Funding provided via the NSW Environmental Trust enabled Council to design an evaporative cooling feature that could be incorporated into the urban revitalisation of Egan's Lane park.

The goal was to address urban heat effects as it is predicted that Nowra will experience an additional 1-5 hot days per year in the near future and 5-10 extra hot days by 2070.

Water quality monitoring

Council has a new online web site called Aqua Data which has been designed to improve the communication of water quality monitoring results to the community as well as assist consideration of water quality data within the catchment planning and catchment management decision making process.

Aqua Data displays water quality test results within just a couple of days of the completed laboratory analysis. Users are able to navigate to any monitoring site using an interactive map, view result tables and graphs on-screen and even download or print reports showing results from the present to several years ago.

Water quality monitoring buoys have been installed into the Shoalhaven River at Shoalhaven Heads and in Broughton Creek. These buoys contain meters that monitor physiochemical parameters such as temperature, pH, salinity and oxygen levels in real time allowing us and the general public to know what is happening in the water at these locations. The results of this monitoring are streamed live to the Aqua Data portal for Council and the community to view.

Council also monitors the rivers, estuaries and lakes' water quality twice a year across all 22 catchments. This monitoring program has been consistently going since 1990's.

Over the summer months Beach Watch water quality monitoring is carried out at 15 selected beaches each week from Merry Beach in the south to Shoalhaven Heads in the north. The monitoring results are used to determine a water quality star rating, based on bacterial assessment categories used in the National Health and Medical Research Council (2008) Guidelines, for each beach.

Bushcare:

The Bushcare program encourages community stewardship of natural areas and supports residents to become actively involved in improving biodiversity conservation, controlling pest plants and animals and improving water quality. It provides a key social service by connecting communities to their environment. Currently there are 70 Bushcare Groups and a total of 663 volunteers operating across the Shoalhaven on Council owned or managed land. Since July 2005 Shoalhaven Bushcare Groups have contributed 96,229 hours of labour towards maintaining and restoring ecological function of the cities natural areas. This is an equivalent financial contribution of \$2,886,870.

Environmental education and mentoring

The Environmental Services Section responds to numerous requests for presentations and sessions for schools and community groups. For example, last year we ran sessions for 400 students from Trinity Grammar at their new field station in Woollamia. We also actively participate in mentoring of local high school students and host a number of work experience students from local schools and universities. We've been actively partnering with other organisations to deliver environmental education including Taronga Zoo and Keep Australia Beautiful campaign.

Environmental Services continues to develop partnerships with universities. One example is the ongoing partnership with Griffith University.

This has enabled Council to facilitate the development of a Strategic Action Plan for Sussex Inlet by the Sussex Inlet community, which aims to improve this coastal communities' resilience and adaptation to natural hazards through planning.

A partnership with Deakin University led to the development of a Carbon Management Framework. This was never implemented but remains a useful resource.

Staff host numerous tree planting days in partnership with local schools and community groups and run an annual Threatened Species Day competition with primary schools across the Shoalhaven LGA.

On-site sewage management program

This program ensures that systems are operated efficiently and in accordance with public health and environmental requirements. The program also ensures that effluent is treated and managed on each property and not released into the surrounding catchment.

Adaptation

In 2012 a Climate Change Adaptation Plan was endorsed by Council. This plan was linked to actions in the Community Strategic Plan and Delivery program. This is now outdated. Council will need to determine what goals they want to set for this area prior to drafting any new plans.

Noxious weeds

Implementing a process to control weeds on Council owned or managed land using the minimum amount of chemicals possible.

Natural area management

Current levels of tourism are challenging from an asset management perspective. The costs of managing the impacts of high levels of usage are becoming significant. For example, more maintenance, signage and rubbish collections are regularly required. While tourism is necessary for the area to prosper, the sustainability of managing our reserves needs to be factored in and considered.

A range of sustainability measures are being put in place to reduce the impacts of human use and changing weather patterns on our sensitive coastal environment. Examples include: consolidation of beach accesses, replacing rock gabions with innovative recycled alternatives that are more sympathetic to the terrain and bush regeneration activities.

BASIX

"The Building Sustainability Index (BASIX) has been in operation in New South Wales since 1 July 2004. The system aims to deliver a 40% reduction for water consumption and greenhouse gas emissions as well as minimum performance levels for the thermal comfort of the building.

BASIX's is implemented under the Environmental Planning and Assessment Act and applies to all residential dwelling types where the contract price is \$50,000 or more. It also relates to swimming pools or spas where the combined capacity is greater than 40,000 litres. BASIX's commitments are required for both development application assessments and complying development certificates.

In 2016, a total of 1940 applications were submitting in the Shoalhaven area (Note: - this includes Council issued development applications and all complying development certificates). Of this figure, a total of 985 applications required a BASIX certificate and this represents 51% of all applications. This is having a positive impact on reaching the targets.

Paper saving initiatives

Many standard procedures and services are now provided by email. For example: providing Section 149/dwelling entitlement certificates via email.

Conclusion:

A range of meaningful sustainability related community focused projects and measures are carried out by PDS. These are performed in an opportunistic ad hoc way as there is no formal resource to coordinate this effort. Without a dedicated budget it is difficult to expand this area without impacting on core operations.

Financial Implications

More intense efforts to increase Councils sustainability activities will require resourcing. For example, adaptation actions require planning and funding. Council needs to set its priorities and have these reflected in the Delivery Program.