

Case Study: Light Years Ahead

COUNCIL NAME

Collective of councils:
Blacktown, Blue
Mountians, Holroyd,
Fairfield, Hawkesbury,
The Hills, Liverpool,
Parramatta, Penrith

WEB ADDRESS

<http://lightyearsahead.com.au/>

SIZE

5760 square
kilometres

POPULATION

1.6 Million

(9 Councils combined)

Overview

The Light Years Ahead project, a collaborative approach between WSROC and nine councils, was one of the largest ever energy reduction projects in western Sydney, replacing 14,491 high emission 80 Watt mercury vapour street lights with energy efficient LED lighting. The project was supported by a range of communication and engagement activities.

Background

Public street lighting is a major cost to local government, accounting for about 55% of WSROC councils' energy costs and around 5% of total budget. WSROC councils had been investigating options for a street lighting bulk change but high up-front cost and long payback times were barriers for viability. The Federal Government's Community Energy Efficiency Project funding provided an opportunity to tackle the cost barriers.

Mercury Vapour (MV) lights, in place in western Sydney since the 1970s, are costly to run and maintain. Technology of street lights is changing to energy efficient LED. LED lighting has only recently been approved for public lighting by energy providers but are much more energy efficient compared with MV lighting, saving councils 77% in energy usage.

The Light Years Ahead project objectives were to:

- Deliver energy efficiency improvements to western Sydney councils' public street lighting which lead to carbon emission reduction and cost saving.
- Develop and implement educational and engagement tools and materials to ensure that key stakeholders and the western Sydney community benefit and learn from the project activities during the project and beyond.
- Showcase the western Sydney region as a front-runner on energy efficiency, and set an example to residents to change to low emission light bulbs.
- Advocate on behalf of councils to ensure they have some control over their public lighting energy usage.

The project aimed to deliver the following outcomes:

- Replacement of 12,770 obsolete, end of economic life street lights with retrofitted energy efficient types which consume up to 60% less electricity in nine western Sydney Local Government Areas and reduce energy consumption by 66%.
- Reducing western Sydney's greenhouse gas emissions by almost 70,000 tonnes of CO₂-e over the life of the asset (20 years).
- Reduce energy costs to the western Sydney community by over \$20 million over the life of the asset (20 years) at current electricity prices.
- Improved community knowledge of energy efficiency, climate change and community support for sustainable street lighting and other energy efficiency practices.
- Improved energy management practices by councils, business and communities.

Implementation

A WSROC project team coordinated the project: their role was to liaise between councils and Endeavour Energy, prepare grant reports and communicate the project to councils, the community and others.

Representatives from participating councils formed a multi-disciplinary reference group made up of 17 members, which included asset managers, environmental sustainability officers, infrastructure managers and engineers. The reference group provided advice to the project team and communicated council decisions about budget and the selection of lights to be upgraded. The reference group was also the first point of contact for public inquiries.

The project further liaised with a range of stakeholders, including General Managers, WSROC Board, other ROCs, MPs, environmental educators, media, western Sydney community, energy providers, State Government agencies and lighting suppliers.

Timeframes:

- 2012-2013: Project scoped, Business case prepared and funding application.
- 2013: Funding received.
- 2014: Project plan developed, project teams formed, negotiations with energy provider, mapping of light changeover.
- 2015: Brand developed, project launched, start of light replacements, start communications activities.
- 2016: Completion of LED light installation (May 2015 - May 2016).



The total budget was \$8 million, comprised of Australian Government funding of \$5.2 million, and a \$2.8 million contribution from participating western Sydney councils and WSROC.

Outcomes

Independent consultants evaluated project achievements and the following savings:

- 4.4 million kWh per year energy reduction.
- 77% reduction in electricity costs.
- \$19.4 million estimated in energy savings for the 9 councils over 20 years (life of the light).
- 91,000 tonnes estimated reduction in emissions over 20 years (life of the light).
- Diversion of 5,040 tonnes of waste from landfill to recycling.

A mix of event surveys, semi structured interviews and online research surveys were used to evaluate the communications activities.

- There was significant media interest in the program with 82 print articles written and included in over 20 publications
- 3,000 residents were engaged via the Light Years Ahead event booth at nine community events across western Sydney.

- There was strong community support for the program. 21% of western Sydney residents were aware and 81% supported the project.
- The collective of councils ensured a stronger negotiation position with the energy provider and ensured greater financial and resource efficiencies. Councils developed more confidence in their ability to negotiate with the energy distributor.
- The project has helped to develop support for sustainability initiatives within councils.
- The project has allowed staff within councils to work more closely with their colleagues in other sections, and to work collaboratively with their peers in other councils. Stronger working relationships and more information sharing has resulted.
- Other councils were looking to WSROC and the Light Years Ahead project as a model of good practice and were eager to emulate it in their own LGA or region.
- Stakeholder requests throughout the project showed Light Years Ahead as an example of good practice in driving energy efficiency in local communities.

Key Learnings

Street lighting is a complex issue. Utilities own most of the streetlights (the assets), select light types and service them. Councils are responsible for providing street lighting, reporting any problems to the energy provider and paying electricity bills. Councils have limited grounds to challenge levels of service, negotiate pricing and question charges. There is no clear governance, no binding service contracts or regulations and a voluntary NSW Public Lighting Code (due for review in 2016). This makes negotiations with energy providers challenging.

The collective of councils enhanced negotiation strength. The energy provider accelerated laboratory and field testing of the more energy efficient 18 watt light to replace the already approved 25 watt light. The 18 watt light approved was able to exceed energy saving targets.

The clear and measurable financial benefit achieved has led to greater council support and quicker approval for other sustainability initiatives. The business case developed for the Light Years Ahead project resulted in a greater understanding of the commercial dynamics involved with public lighting which can be used as a model for future projects in the region.

WSROC is currently working with councils on a Stage 2 Light Years Ahead program to replace an additional 34,000 lights across the region and an extended energy efficiency program to collaboratively tackle energy savings of councils' assets. Approximately \$20 million in energy efficiency projects will be implemented in the next couple of years.

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This project was a joint winner of the 2016 Climate Change Action Award at the LGNSW Excellence in the Environment Awards