

Case Study #2 – Regional Action on Sustainable Public Lighting

Western Australia Sustainable Public Lighting Trial

Summary

Public lighting in Australia consumes large amounts of energy and financial resources, and many councils have formed regional sustainable public lighting action groups, pooling resources and acting as a single entity to engage in effective partnerships with stakeholders.

Many local councils in Western Australia have been working towards sustainable public lighting (SPL) outcomes for over four years. The councils have formed the South East Regional Energy Group (SEREG) and manage sustainability initiatives across a range of areas under the 'switch your thinking!' brand and work on SPL as an area of high priority. To progress SPL, SEREG has developed a close working relationship with the Western Australian Local Government Association (WALGA) to facilitate their engagement and collaboration with key stakeholders.

This case study outlines the work of the Sustainable Public Lighting Trial lead by SEREG. Together with WALGA, SEREG have engaged Western Power, the key energy distribution business of the region, as well as Synergy, the energy retailer. They have successfully undertaken a strategic planning and relationship building process that has led to technology trials of energy efficient public lighting and additional outcomes that support the transition to sustainable public lighting in the region.



The Suburban Eco luminaire fitted with a compact fluorescent lamp. Courtesy of Sylvania Lighting Australasia.

Group Overview

NAME	South East Regional Energy Group (SEREG)
Drivers for formation	<ul style="list-style-type: none"> Financial - Public lighting equates to approximately 50% of council's annual energy expenditure Emissions - Public lighting produces approximately 50% of council's associated annual corporate greenhouse gas emissions
Participating councils	<ul style="list-style-type: none"> City of Armadale – <i>lead council</i> Serpentine Jarrahdale Shire City of Gosnells
Other stakeholder involvement	<p><i>Signatory Stakeholders in the Sustainable Public Lighting Trial:</i></p> <ul style="list-style-type: none"> Western Power (electricity distribution business) Synergy (energy retailer) <p><i>Partners in the trial (non-signatories):</i></p> <ul style="list-style-type: none"> Western Australia Local Government Association (WALGA) Sylvania Lighting (manufacturer)
Key activity areas	<ul style="list-style-type: none"> Planning and relationship building Technology trials
Governance	<ul style="list-style-type: none"> <i>Current project initiated:</i> July 2008, at signing of Memorandum of Understanding <i>Terms of Reference for Public Lighting Group:</i> agreed December 2004 <i>Secretariat function:</i> SEREG Regional Greenhouse Coordinator, Jason Menzies, acting on behalf of all three member councils <i>Meetings:</i> Public Lighting Project group hold meetings six times per year <i>Project management:</i> Regional Greenhouse Coordinator (co-funded by participating councils) who reports back to all group members
Resources/ funding	<ul style="list-style-type: none"> Direct funding from City of Armadale In-kind support from SEREG - for Regional Greenhouse Coordinator

Key Activities

- **Understanding shared objectives, challenges and plans**

As part of a 2005-06 CCP Australia 'Sustainable Public Lighting Advancing Action Project', the three SEREG councils made an inventory of their public lighting stock and developed council action plans. Beyond actions that councils could take individually, this process identified a range of common challenges faced by the councils in relation to availability of alternative technologies and relationships with external stakeholders, in particular the distribution businesses and retailers. The need to collaborate regionally was ultimately recognised and SEREG undertook to progress sustainable public lighting as a high priority area.

- **Identifying the need for and objectives of a regional technology trial**

With member council support, SEREG liaised with WALGA to assist in engaging Western Power (the distribution business) and Synergy (the energy retailer). WALGA had managed an earlier two-year sustainable public lighting trial that led to a report which found that energy consumption from street lighting in WA could be halved whilst improving the service to meet Australian Standards (1158) and maintaining performance levels (Sage, 2007). However, as the trial used non-conventional or decorative poles, and did not trial high-pressure sodium technology, the need for an additional regional trial was confirmed. This report also served as a guide for the group's decision-making. The proposed trial would seek to replicate conventional minor road lighting conditions as much as possible, and assess technologies that might be suitable for large scale roll-out following the trial.

- **Building support and relationships for the trial project**

The SEREG councils co-fund Jason Menzies as SEREG's Regional Greenhouse Coordinator, and he has acted as project manager and secretariat throughout the development and implementation of the trial project. Jason worked closely with WALGA and leveraged their existing relationships with WA distribution businesses and retailers. Through a series of meetings and discussions, key stakeholders Western Power and Synergy became supportive of the trial's purpose and engaged as project partners. The foundation for the trial partnership was developed and refined through a Memorandum of Understanding (MOU) signed by the key stakeholders — the City of Armadale (representing SEREG), Western Power and Synergy. WALGA and Sylvania Lighting are partners in the trial, but not signatories to the MOU. Through the collaboration and negotiations leading to the MOU, all parties gained a better understanding of each other's requirements and priorities for public lighting management.

- **Scoping and defining the trial**

Defining and agreeing on the details of the trial involved many discussions of lighting technology options, trial sites, responsibilities and timeframes. Some of the specific activities by stakeholders included:

- SEREG gained agreement from lighting manufacturer Sylvania Lighting Australasia to provide some luminaires without charge and others at cost.
- Participant councils conducted assessments of the trial sites identified by Western Power – the final trial sites chosen had a high concentration of mercury vapour lamps and a mixture of commercial and residential zones
- Western Power reviewed its technical requirement of double insulation for public lighting and waived it for the purposes of the trial. This in turn provided Sylvania with the confidence to invest in future changes to their public lighting products.
- Parties agreed on two technologies to be trialled — 42 watt Compact Fluorescent Lamp (CFL) and a twin-arc high-pressure 50 watt sodium lamp (HPS).
- To reflect what parties considered standard lighting design principles, only street lighting with side entry style poles were chosen.
- SEREG conducted a pre-trial survey of residents' attitudes and opinions about public lighting services, including their perceptions of light spill, colour, safety and amenity. This survey provides the baseline against which the project team can track public perception of the trial lights throughout the implementation and monitoring phase.

- **Technology trials underway**

The two-year Sustainable Public Lighting trial, which commenced in October 2008, provides suitable time for technologies to be assessed and community feedback to be gathered without the technology becoming redundant. Western Power, as the asset owner, performed the lighting changeovers across the four trial sites within Armadale and Kelmscott. They replaced all old luminaires with Sylvania Lighting's new Suburban Eco luminaire then fitted approximately 50% of the new luminaires with 42 watt CFLs and the other 50% with 50 watt twin arc HPS lamps. All sites are active and will remain so for the duration of the trial.

The City of Armadale contracts a third party to regularly monitor light levels at the trial sites and has placed signage on the trial streets to provide a course of action for residents wishing to report faults or provide other feedback. Progress reporting is provided quarterly by the project coordinator to the project partners.

In a separate trial, but in close consultation with SEREG, the City of Gosnells is undertaking an investigation of new LED technology in one of its residential estates. The new LED luminaires are being trialled on lights owned and managed by the City of Gosnells.

Benefits and Outcomes

- **Improved relationships and communications between stakeholders**

Through its Regional Greenhouse Coordinator, SEREG has developed positive working relationships with Western Power and Synergy, moving past the traditional tense negotiation framework. This has led to the discovery of shared organisational objectives to assist in the operation of the trial. WALGA's advocacy has reasserted the value of the sustainable public lighting project to non-council stakeholders and prompted further commitments from Western Power.

- **Increased buy-in and commitment from distribution businesses, retailers and suppliers**

Western Power, prompted by WALGA's advocacy, SEREG's support and previous trial results, is moving beyond a business-as-usual framework. The distribution business has given in-principle support to phase out 80 watt mercury vapour lamps from Western Australia's public lighting stocks over the next 5-10 years, regardless of the outcomes of the trial. Having the involvement and advocacy of WALGA helps ensure benefits and results can be shared state-wide.

The financial and in-principle support for the Sustainable Public Lighting Trial has prompted both Western Power and Synergy to positively reassess their environmental commitment and to evaluate the opportunities for rolling out sustainable street lighting options on a large scale. The data collected from this trial will be valuable to them in estimating an aggregate local government costing.

The culmination of past projects and advocacy has led to the appointment of a dedicated customer service team within Western Power. They respond to repair and maintenance requests of trial lights quickly and professionally ensuring the trial is efficient in its use of resources.

- **Evidence of technology performance under regional conditions**

The Sustainable Public Lighting Trial will allow the group to realistically assess the technologies in real life conditions and gauge the community response to the changes. The CFL and twin arc HPS are expected to use up to 33% less energy than traditional mercury vapour lights. The trial will verify performance of the two technologies in WA's unique environmental conditions and enable Western Power to assess the possibilities for retrofitting existing public lighting in the Perth metropolitan area. SEREG, with input from all trial stakeholder, will produce a report on the trial outlining the feedback of residents over the trial period, technical data collected from the lighting and recommendations for appropriate technologies and change over options for councils. The report will be shared with councils across the state to assist them in making decisions on sustainable public lighting.

"These luminaires will use mostly the same components and be similar to the current luminaires in terms of installation, maintenance and servicing requirements. This will allow a very smooth and unnoticeable change over to these lamp types".

Representative of Sylvania Lighting Australasia

Lessons Learnt

- **Advocacy achieves results**

Working with WALGA from the outset provided SEREG with the high level advocacy they needed to get this initiative underway. The process enabled WALGA and SEREG to develop a mutual understanding with Western Power and Synergy to drive the outcomes that are currently being achieved. SEREG has acknowledged that such advocacy as well as a united front by councils has been instrumental in achieving the commitment necessary to get the trial underway.

- **Shared resources, shared outcomes**

Managing the project under the '*switch your thinking!*' brand, with its well known inclusive partnership approach, and using the Regional Greenhouse Coordinator across all three member councils allows resources to be shared effectively and prevents the duplication of work.

"Perseverance is pivotal, as is a willingness to seek out and engage a variety of project partners to help spread the load. SEREG's decision to be the lead proponent in the trial was also a big factor, as this helps get around delays relating to lack of resources (e.g. staff time, money etc)".
Jason Menzies, Regional Greenhouse Coordinator, SEREG.

Further Information

For more information about the group or the technology trial contact:

Jason Menzies, Regional Greenhouse Coordinator for SEREG, jmenzies@armadale.wa.gov.au,
0432 370 671

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Resources

Other resources used or developed by the group are:

- Sage Consulting Engineers, 2007. *Improved Streetlighting Study for Greenhouse and Safety Benefits: Institutional and Technical Review*, [online]
http://www.iclei.org/fileadmin/user_upload/documents/ANZ/CCP/CCP-AU/EnergyToolbox/Events/SAGEreport07.pdf, commissioned by WALGA and the Sustainable Energy Development Office.
- SEREG, 2006, *South East Regional Energy Group Business Plan 2006/07 – 2008/09*, [online]
http://www.switchyourthinking.com/uploads/SEREG_BusinessPlan%20-%202006-09.pdf; and
- SEREG, 2008, *Public lighting page*, [online]
http://www.switchyourthinking.com/index.php/projects/sustainable_public_lighting
- Syneca, 2005, *Public Lighting in Australia, Energy Efficiency Challenges and Opportunities*, commissioned the Australian Greenhouse Office, not public
- WALGA, 2008, *Submission to Office of Energy Electricity Retail Market Review: Review of Electricity Tariff Arrangements Draft Recommendations Report*, May 2008, [online]
www.energy.wa.gov.au/cproot/1235/10764/WALGA%20Submission%2030May08.pdf