

BRIGHT SPARKS



THE SUSTAINABLE PUBLIC LIGHTING BULLETIN >>>

VOLUME 2, ISSUE 2, OCTOBER 2007

Welcome to Issue 2 of Bright Sparks Volume 2. The Northern Alliance for Greenhouse Action (NAGA) will be collating the first four issues of Volume 2, so please forward news and information to NAGA: judy@mefl.com.au

To add your name to the Bright Sparks Mailing List, please forward your contact details to publiclighting-anz@iclei.org

National Sustainable Public Lighting Toolbox website

ICLEI Oceania and the Australian Greenhouse Office have launched the Sustainable Public Lighting Toolbox to accelerate the uptake of sustainable public lighting. The new national Toolbox is a 'one-stop-shop' for local governments across Australia to:

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- > access guides, tools, case studies and technical information;
- > share information with other councils and regions;
- > find state-specific information about regulations and energy markets. Information specifically related to Victoria can be found at <http://www.iclei.org/index.php?id=6487>
- > understand the national context;
- > keep up-to-date with new developments;
- > download papers, publications and other information.

The Toolbox replaces the former Sustainable Public Lighting Information Hub and can be found at <http://www.iclei.org/ccp-au/publiclighting>

Victorian Sustainable Public Lighting Action Group

Technical Approval: The VSPLAG Technical Group has been working hard to collate information on the 42W compact fluorescent (CFL) and T5s (2x14W and 2x24W). Once this process has been completed, a decision on technical approval will be made. For more details on the process and timing, contact: Mark Butson, SP AusNet, (03) 9695 6176.

Load Table listing: A significant step has been made to enable some Victorian Councils to use energy efficient lighting. The National Electricity Market Management Company (NEMMCO) has given interim approval (until 31 Dec 08) for listing on the load table of the T5 (2x14W and 2x24W) and the 42W CFL. This means that in SP AusNet's area, the technical approval is now the only significant issue to be resolved before councils can install these technologies. For more information see: <http://www.nemmco.com.au/meteringandretail/640-0138.htm>

other Victorian news

NAGA Accord Funding Stage 2

NAGA has received further funding from the Local Government Sustainability Accord to develop a strategic state-wide business case for changeovers to more energy efficient lighting; and to expand testing of innovative control systems.

Victorian Sustainable Public Lighting Roadmap

Despite substantial effort over the past 4 years to prepare for wide-scale installation of more energy efficient public lighting, in an effort to address the major contribution that public lighting makes to local government sector's greenhouse gas emissions, a number of barriers remain.

To assist in strategically addressing barriers, and facilitating continued, targeted action, NAGA is preparing a background report and briefing paper to document work to date, and identify critical strategic needs including:

- consolidation of technical data, final reports on trials
- costing/finance models
- risk management framework/assessment
- strategies for fostering Distribution Businesses' support and involvement

Results will inform continued work at VSPLAG and in other forums.

Trial report – NAGA/AGL Project

A report has been prepared by Ray Simms and Kevin Poulton on the NAGA/AGL Lighting Demonstration trials that were carried out in Melbourne's northern region from 2004-07.

In 2004, NAGA and AGL received funding for a public lighting trial from the Victorian Government. The program installed 120 trial lights across five NAGA local governments: Banyule, Darebin, Hume, Moreland and Whittlesea; as well as Maribyrnong City Council.

The trials were aimed at testing the field performance of energy efficient lights that can replace the existing 80W Mercury Vapour (MV) technology. The trial lights were:

- > Pierlite Greenstreet 2x14W T5
- > Sylvania Suburban 42W CFL
- > Sylvania Urban 50W High Pressure Sodium (HPS)

The results of these trials indicate that the T5 can be installed as a standard direct replacement for the 80W MV. Benefits include better uniformity of light across and along the street, better colour rendering and visibility, best current technology in terms of energy performance, less lumen depreciation and lamp failure rate.



T5 installation as part of NAGA/AGL trials

The 42W CFL is recommended as a direct replacement for the 80W MV only where T5 cannot be used (e.g. some decorative streetlights).

The use of 50W HPS as a replacement for MV was not recommended because of the reduced colour rendition and poor visibility caused by the distinctly yellow-orange light.

The report includes results on comparisons of energy and greenhouse savings, maintenance issues and spacing required to meet Australian Standards. The report is available at: <http://www.naga.org.au/naga/project/152/>

Opportunities for installing Sustainable Public Lighting ... NOW!

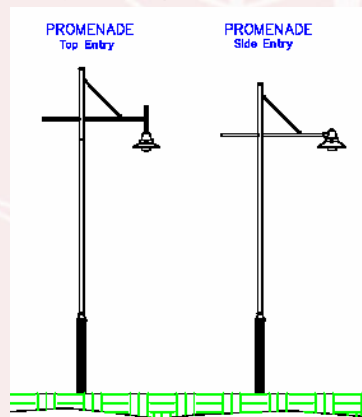
Nillumbik and Hume Councils have submitted information on actions they have already been able to take to improve lighting sustainability in their municipalities. If you have other ideas that could be included in future issues of Bright Sparks, email your tips to judy@mefl.com.au

Nillumbik Shire Council's initiatives

The following two tips have been implemented at Nillumbik Shire Council for all new residential developments.

> Provide a minimum luminaire height of 6.5m. Increasing the luminaire height (the current height for new installations is usually 5.5m, or 7.5m when installed on transmission poles), allows the poles to be spaced apart further, reduces vandalism and ongoing maintenance costs as well as reducing numbers of streetlights, and saving energy.

> Pole design to allow for side entry luminaire installation, ensuring poles are compatible with all lighting types for future refits.



Top entry pole (left) and side entry pole (right)
Image courtesy Vicpole

Sustainable Public Lighting in NSW

There has been good progress in NSW in the sustainable public lighting arena.

Within the Integral Energy area, the majority of lights installed in new developments are 2x14W T5 (approximately 65%). In the past year around 5,000 units have been installed.

Energy Australia aims to report on its 3 year trial of T5s towards the end of this year, and has installed a further 200+ 42W CFLs early in 2007 as an extension of the trial.

Hume City Council's

Open Space & Security Lighting Upgrade

Hume Council is upgrading its open space and security lighting using the latest efficient street lighting technologies, saving up to 60% in energy costs and greenhouse gas emissions.

Whilst actively involved in developing Sustainable Street Lighting agreements with electricity retailers and distribution businesses, Council's Sustainable Resources Technical Officer has also been able to fast track the trialling and roll out of these new technologies by installing them at council owned facilities.

Being Council maintained assets with metered electricity, the facilities, which include depots, parks, community centres, playgrounds, walking tracks and sports reserves, are not subject to the agreements required with electricity retailers for provision of streetlighting. This allows for more flexibility in the choice of lighting and experimentation of the latest technologies, whilst still adhering to the requirements of the public lighting code.



T5 good, MV bad ...
Hume Council's electrical contractors replace public lighting.

The obvious target for efficiency upgrade is the 80W MV, which has been used extensively for residential street lighting in Australia for nearly 20 years. Emerging technologies are far more energy efficient and contain much less mercury, a major consideration for waste recovery and disposal. Hume has nearly 11,000 MV streetlights, and many hundreds more servicing council maintained facilities. The latter can easily be retrofitted in most cases by Council's electricians to the T5 or a range of 42W compact fluorescents. The performance of the new lights has been outstanding, with higher light quality and more efficient light dispersion.

Over 50 retrofits have been undertaken at Hume Council facilities to date, saving energy costs and approximately 20 tonnes of greenhouse gas emissions each year.

Tech update – Control systems

NAGA organised a seminar on 6 June 07 to present recent innovations in control systems for public lighting. Speakers included:

Peter Griffiths, Zodion UK.

Intelligent PE cells & controls including on, dimming and off systems.

With significantly higher energy costs in UK, and higher levels of regulation of hazardous substances and waste recycling in the European Union, there has been development of more sophisticated control systems, and of lighting times, including switching off lights between 1-5am. <http://www.zodiontd.eu.com/zodion.php>

Rob Alexander, GenesisNow.

Test results of standard and electronic PE cells for minor road lighting at Banyule Council's test rig



*Banyule City
Council's PE cell
test rig*

Results cover two periods, 1/2/06 – 29/9/06 and 1/1/07 – 30/4/07. (Data was incomplete for the missing months.)

Results show the average ON time for each PE cell in comparison with the standard dusk to dawn time (from Geoscience Australia), and indicate that some cell types show lower ON times than others.

Richard Dluzniak, Active Reactor.

Latest results of trials of this electronically controlled magnetic ballast that aims to save 20% of energy use in high wattage lighting (including for road lighting and floodlighting) <http://www.activereactor.com>

The operation of the device is *variable power, constant light*, as opposed to the *constant power, variable light* operation of a conventional ballast. This delivers substantial energy savings, greenhouse gas reductions and lamp life extension when used with High Intensity Discharge lamps.

The seminar was organised as part of NAGA's Sustainability Accord funded project. Seminar presentations can be downloaded from

<http://www.naga.org.au/naga/project/152/>

Trial update – Active Reactor

Active Reactors have been installed on Springvale Rd Forest Hill since 2004. The trial has now been in operation for over 30 months (10,000+ hours). According to Active Reactor's Managing Director Dr Richard Dluzniak, the results have been impressive, with no unit failures and 23% saving in energy. As a result it is anticipated that lamp life will be extended by 100% for the Active Reactor group compared to the Control Group based on the measurements taken; data collection is continuing.

Active Reactors have now been installed this year in the Latrobe Valley, and in Collins St in Melbourne's CBD – these installations will expand the data generated on their operation over time.



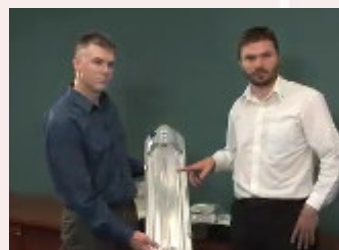
*The Active Reactor in Sylvania Roadster
250W HPS Fitting, installed in Springvale Rd*

Paper for Electrical Engineering Society of Australia Journal

Paul Brown (Ironbark Sustainability) has authored a paper on Sustainable Streetlighting for the Electrical Engineering Society of Australia Journal. The paper outlines national options for improving sustainability in streetlighting. Information includes current numbers of streetlights and the options to decrease energy usage in streetlighting by 50% whilst maintaining the same or improved performance.

The paper can be downloaded at:

<http://www.iclei.org/index.php?id=6468#c25915>



*Paul Brown (right)
with Darebin City
Council's Stuart
Nesbitt (left) and a T5
luminaire (centre)*