



Submission Template

Emissions Reduction Fund draft determination

Commercial and Public Lighting Methodology Determination 2015

Overview

This submission template should be used to provide comments on a draft Emissions Reduction Fund determination

Contact Details

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| Date: | 20/04/2015 |

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- Department of the Environment;
- Emissions Reduction Assurance Committee; and
- Clean Energy Regulator.

If any part of the submission should be treated as confidential then please provide two versions of the submission, one with the confidential information removed for publication.

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Do you want this submission to be treated as confidential? Yes No

Submission Instructions

Submissions should be made by **close of business** on the day the public consultation period closes for the determination. This date will be specified on the website. The Department reserves the right not to consider late submissions.

Where possible, submissions should be lodged electronically, preferably in Microsoft Word or other text based formats, via the email address – EmissionsReductionSubmissions@environment.gov.au
Submissions may alternatively be sent to the postal address below to arrive by the due date.

ERF Governance, ERF Division
Department of the Environment
GPO Box 787
CANBERRA ACT 2601

Name of draft determination: Commercial and Public Lighting Methodology Determination

General/overall comments

Please see the attached submission.

Do you consider that this determination may have any adverse environmental, economic or social impacts? What existing frameworks are in place to address any adverse impacts?

Please see the attached submission.

Specific comments – please insert your specific comments below, listed against the part of the draft determination to which they apply

| Determination reference: <i>[insert name of relevant part of determination]</i> | Comments: Please see the attached submission |
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Lighting Council Australia Submission

in response to the

Exposure Draft Carbon Credits (Carbon Farming Initiative - Commercial and Public Lighting) Methodology Determination 2015

April 2015

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EXECUTIVE SUMMARY

Lighting Council Australia (Lighting Council) welcomes the opportunity to comment on the *Exposure Draft Carbon Credits (Carbon Farming Initiative - Commercial and Public Lighting) Methodology Determination 2015 (Draft Lighting Method)*.

Lighting Council's response to the *Draft Lighting Method* is based on substantial consultation with Lighting Council members through our Lamp and Solid State Lighting Sub-Industry Groups.

Lighting Council welcomes the development and publication of the *Draft Lighting Method* as we believe that lighting upgrade projects could provide a relatively quick and easy method to reduce energy consumption and emissions. Lighting Council supports the objectives of the *ERF Commercial and Public Lighting Method* to provide a vehicle for improving the efficiency of installed commercial and public lighting systems in Australia.

It is essential that outcomes from the making of this Determination strike the right balance between requirements resulting in suitable, safe, conforming lighting installations and overly burdensome prescriptive requirements.

Lighting Council supports:

- The current overall deemed approach of the *Draft Lighting Method* and further alignment (currently the *Draft Lighting Method* contains only limited alignment) with the current state white certificate schemes.

Lighting Council suggests:

- Requirements be included to ensure appropriate lighting levels are a required outcome of ERF Lighting upgrade projects;
- Installation of equipment be undertaken by competent persons;
- Manufacturer's specifications and declarations will not be sufficient in ensuring the installation of quality lighting equipment. Product conformance information aligned with the NSW Energy Savings Scheme (ESS) lighting equipment requirements should be required unless equipment is already registered under one of the state schemes or the Lighting Council's Solid State Lighting (SSL) Quality Scheme;
- Mutual recognition of equipment already registered with the current state white certificate schemes and the Lighting Council's SSL Quality Scheme.
- Revising the *Draft Lighting Method* definitions and schedules to differentiate between lamps and luminaires and make certain that all lamps within luminaires will be included within power calculations.

Lighting Council Australia's comments on the Exposure Draft Commercial and Public Lighting Method (*Lighting Method*) under the Emissions Reduction Fund

The 'deemed' approach of the *Draft Lighting Method* without question will result in energy efficiency improvements. However, Lighting Council is concerned that the current draft will allow for:

- Poor outcomes in terms of lighting designs and lighting levels;
- Low quality and potentially non-conforming equipment that does not deliver promised carbon abatement;
- Overly burdensome administration requirements; and
- A restriction of certain new technology products.

We suggest that more work on the current *Draft Lighting Method* is required in the following areas:

1. The *Draft Lighting Method* currently sets no minimum standards in terms of project lighting levels or lighting quality. Lighting Council believes this will result in poor outcomes for installation owners and tenants that will need to be resolved by tribunals, courts, etc. The NSW Energy Savings Scheme saw unsatisfactory project outcomes in its early days of operation due to aggressive project proponents and a lack of project lighting requirements. This situation was only remedied with rule changes requiring agreement to a proposed lighting design by a third party lighting design professional.

Under the current Draft Lighting Method, final lighting arrangements would only be determined by contracts, with the final contract inclusions relying on educated installation owners. Currently there is a lack of understanding amongst the general public (including business owners) about the inter-relationship of energy savings and the specifics of lighting, colour, quality and the impact poor lighting can have on productivity and consumer behaviour.

Lighting Council suggests the *Draft Lighting Method* be amended to include the following requirements:

- Roads and public spaces lighting upgrade projects:
 - Project lighting should be required to meet the relevant requirements in AS/NZS 1158 *Lighting for roads and public spaces* series of standards; or
 - Project lighting should be required to provide equivalent or higher lighting levels than the baseline lighting system (this inclusion is for the situation where it is not possible for a road or public space lighting upgrade project to meet the requirements of AS/NZS 1158).
- Commercial building lighting upgrade projects: Project lighting should be required to meet the higher of the following:
 - The relevant requirements in AS/NZS 1680 *Interior and Workplace Lighting* series of standards; or
 - The lighting levels of the baseline lighting system.

The following are suggested mandatory conformance aspects relevant to the above requirements:

- For **new luminaires**, the *Lighting Method* should include a requirement placed on the project proponent to demonstrate proof of proposed design compliance to AS/NZS 1158 or AS/NZS 1680 (as appropriate) by producing modelling of the proposed lighting design (e.g. using commercially or freely available software such as AGI-32; DIALUX; RELUX or other suitable methods of modelling) and for such modelling to be agreed (signed off) by a person who can demonstrate competence in assessing lighting designs. (Illuminating Engineering Society (IES) Members with the MIES qualification have demonstrated

such competence). A similar requirement (lighting design and MIES sign off) is currently included as a requirement of NSW ESS commercial lighting upgrade projects.

- For **re-lamping of existing luminaires**, the *Lighting Method* should include:
 - A requirement placed on the project proponent to demonstrate proof of proposed design compliance to AS/NZS 1680 by producing modelling of the proposed lighting design (e.g. using commercially or freely available software such as AGI-32; DIALUX; RELUX or other suitable methods of modelling) and for such modelling to be agreed (signed off) by a person who can demonstrate competence in assessing lighting designs (Illuminating Engineering Society (IES) Members with the MIES qualification have demonstrated such competence); or
 - A mandatory pre and post project assessment against the lighting design requirements (i.e. the higher lighting levels of AS/NZS 1680 or the baseline installation) by a competent lighting design professional of an agreed example space within the installation (The “example space” is a physical area agreed by the installation owner and project proponent and the lighting outcome in the agreed example space is agreed between the installation owner and project proponent).

2. In regard to the installation of project lighting, Lighting Council’s views are aligned with the code of conduct for managing electrical risks in the workplace produced by Safe Work Australia¹.

Safe Work Australia defines electrical work as:

- Disconnection or connection of supply wiring and electrical equipment; or
- Installing, removing, adding, testing, replacing, repairing, altering or maintaining electrical equipment or an electrical installation.

Safe Work Australia requires that electrical work be undertaken by appropriately licensed or registered electrical workers².

Where lighting upgrade projects require the connection of electrical equipment by means of a flexible cord plug and socket outlet or replacing light bulbs, then this is not defined as electrical work and Lighting Council suggests this work should be undertaken by persons having appropriate training and competence in such tasks. Such work should only be conducted according to a work procedure that identifies / mitigates all risks and includes procedures for dealing with all possible variations involved in this type of work.

3. Regarding the conformance and quality of project lighting equipment, Schedule 8 of the *Draft Lighting Method* currently requires information on only nominal lamp power of each lamp or luminaire. The record keeping requirement can be satisfied by evidence including the manufacturer’s product specifications or the manufacturer’s declaration.

Lighting Council’s experience is that the above evidence allowances will certainly lead to low quality lighting equipment being installed and illegitimate compliance information being supplied under the record keeping requirements. Many LED products in the Australian market place do not meet electrical safety requirements, do

¹ Safe Work Australia – Managing electrical risks in the workplace code of practice, July 2014. [managing electrical risks at the workplace code of practice](#)

² Safe Work Australia – Managing electrical risks in the workplace code of practice, July 2014. Refer p 26 Risk controls – Working de-energised.

not meet electromagnetic compatibility requirements, have poor or no photometric information supplied and have poor lifetime outcomes³. The NSW ESS and VEET schemes now require a complete package of product conformance evidence before equipment may be registered. The same evidence should be required by the ERF *Lighting Method* record keeping requirements or, alternatively, the ERF *Lighting Method* should mutually recognise equipment registrations under the NSW ESS and VEET schemes (and include screen shots of product registrations in compliance records). Additionally, Lighting Council Australia conducts a third party certification scheme that assesses, publicly lists and labels qualifying solid state lighting (SSL or LED lighting). This certification scheme is the Lighting Council's SSL Quality Scheme and we propose that Lighting Council's SSL Quality Scheme registered equipment be also mutually recognised under the ERF *Lighting Method*. Screen shots of product registrations could be contained in project records as suitable evidence.

If equipment is not already registered under the NSW ESS, VEET scheme or Lighting Council SSL Quality Scheme then project records containing product conformance information, aligning with the NSW ESS requirements⁴, should be kept and checked during audits. Such information includes electrical safety conformance, electromagnetic compatibility conformance, ERAC registration, lamp circuit power and lifetime test reports.

4. Lighting Council highlights that the administration requirements of the various state white certificate schemes as well as the communication and information exchange requirements when dealing with various project proponents are burdensome and one way to minimise this burden is by mutual recognition of the equipment already registered under state schemes and equipment registered under the SSL Quality Scheme.
5. Lighting Council is not aware of any types of lighting technologies or systems installed in buildings that would be upgraded within a seven year ERF project in a business-as-usual scenario (and not replaced with like equipment).

Anecdotally, some (particularly high profile) commercial retail outlets, some shopping centres and some service stations, tend to upgrade lighting systems more regularly than seven years. However it is not possible to generalise, as there exists a wide variation in practices.

The ERF may need to accommodate change of site ownership, tenant and lighting updates that take place within seven years of an ERF lighting update project.

6. Section 5, Definitions - We suggest altering the definition of "lamp circuit power" as the current inclusion of the words "or luminaire" may allow project proponents to consider only the best case for their project. Consider altering the definition of **lamp circuit power** to:

"lamp circuit power means the electrical power drawn by a single lamp and its associated control gear (Note: A luminaire may contain more than one lamp so there is a need to include all lamp power and the associated control gear when considering luminaires)."

³ See report "[The quest for a level playing field, The non-conforming building products dilemma](#)", [The Australian Industry Group, November 2013](#).

⁴ "[Lighting Equipment Requirements LED Lighting, Induction Lamps and Emerging Technologies, Energy Savings Scheme, August 2014](#)" and the Table in Appendix A

7. Section 5, Definitions - We suggest altering the definition of “nominal lamp power (NLP)” as the current inclusion of the words “or luminaire” may cause confusion and allow project proponents to consider only the best case for their project. Consider altering the definition of **nominal lamp power** to:

“**nominal lamp power (NLP)** means the electrical power drawn by a lamp.”

8. Section 5, Definitions: For induction luminaires, LED luminaires and OLED luminaires consider the need for a new definition of “Luminaire Circuit Power” including both built-in and external power supplies. See point 14 below.
9. Lighting Council suggests that Schedule 1 should be split into separate schedules for lamps and luminaire types so that it is easier to read and allow for future product type additions.
10. The definitions in the current Schedules 1 and 2 are based mostly on the performance standards for the various categories of lighting products and components. Lighting Council suggests that a more universal method of defining such products would be to refer to the internationally agreed i.e. IEC (or AS/NZS where these exist) safety standards for lamps, control gear types and luminaires. For example, the base standard in Australia for luminaires is the AS/NZS 60598 series of standards.
11. The definition of “LED power supply” (AS/NZS IEC 61347.2.13:2013 *Lamp controlgear - Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules (IEC 61347-2-13, Ed.1.0 (2006) MOD)*) should be added to the current Schedule 2.
12. The standard referenced against the definition of ELV LED lamp (Item 17 of Schedule 1) is not correct. There are draft standards currently being developed for ELV LED lamps but they will not be completed in time to include in a determination made by April – May 2015.
13. The street, traffic light and emergency luminaire class (see items 14 &15 of Schedule 1) requires improved definitions by referencing the relevant standards.
14. The current schedule 1 should add definitions for LED luminaire and OLED luminaire. Currently no separate standard exists for either product class. These are considered a luminaire covered by AS/NZS 60598. Proposed definition of “**LED luminaire**: The combination of a LED module or a LED light engine combined with control gear (either built-in or external), optical system and heat sink to form a lighting system compliant to the AS/NZS 60598 series of standards.
15. The current Schedule 3 should add LED luminaire and OLED luminaire so that both types of these luminaires can be accommodated in power calculations.
16. Schedule 3: Regarding the Lamp circuit power (Watts) calculation for induction luminaires (existing Item 35), LED luminaire (new Item proposed) and OLED luminaire (new item proposed), including both built in and external power supplies - Consider referring to the suggested new definition for luminaire circuit power instead of the current reference to “NLP”. The luminaire circuit power should include the total power used by the luminaire including all power used by 1 or multiple lamps, LEDs and associated control gear (e.g. LED(s), lamp(s) and driver(s) whether both built in or external) power consumed.

ABOUT LIGHTING COUNCIL AUSTRALIA

Lighting Council Australia is the peak body for Australia's lighting industry. Its members include manufacturers and suppliers of luminaires, lighting control devices, lamps, solid state lighting and associated technologies. Lighting Council's goal is to encourage the use of environmentally appropriate, energy efficient, quality lighting systems.

In response to the *Product Profile*, Lighting Council conducted industry consultations with members of our Lamp Suppliers and Solid State Lighting Sub-Industry Groups.