

To: Australian Government Department of Climate Change, Energy, the Environment and Water

From: The Clean Lighting Coalition

Date: 15 March 2023

Subject: Comments on Australia's Proposals for Lighting MEPS Updates

Thank you for this opportunity to provide comments on the [public consultation](#) concerning proposed lighting regulations in Australia. The Clean Lighting Coalition strongly supports the Department's proposal as our review of lighting markets around the world has clearly shown that where governments have established well drafted policy measures like your proposal, products have improved and consumers / businesses in those markets benefit. Responsible lighting suppliers pay attention to these policy measures and Australia will experience an improvement in the quality and efficiency of lighting products placed in your market. Other countries where we have been working that have not set product policy regulations typically suffer from having old or outdated lighting products dumped in their markets. This leads to end-users having to endure a lot of problems associated with poor quality, including for example unsafe products or product performance not matching claims on the packaging.

Our one major concern with your lighting regulation is the omission of fluorescent lamps – both compact fluorescent and linear fluorescent lamps. As you will be aware, there are many governments around the world who are adopting policy measures to phase-out fluorescent lighting – we provide a brief summary of those in Annex A to these comments – including the EU-27, the countries in the European Economic Area, the East African Community, the Southern African Development Community, the states of California and Vermont in the USA, and many more initiatives and programmes. Part of the motivation behind governments taking this action is due to (1) the energy and financial savings associated with upgrading from fluorescent to LED and (2) the goal of removing toxic mercury from the municipal waste stream.

The Clean Lighting Coalition recommends that the Australian government consider bringing compact fluorescent and linear fluorescent lamps within the scope of this lighting regulation. If that is not possible due to regulatory schedules, then we would recommend initiating a policy-making process to specifically look at energy-efficient (mercury-free) alternatives to fluorescent lighting as soon as possible. Our research team has established that it is both technologically feasible and economically justified to phase-out fluorescent lamps globally in 2025. There are literally tens of thousands of direct drop-in replacement LED retrofit lamps that for virtually all fluorescent lamp applications, and by installing an LED retrofit into a fluorescent fixture, the end-user enjoys the same illumination in their living space while benefitting from mercury-free lighting, 50% savings on their lighting electricity bill and 2-3 times longer lifetime.

We conducted a very simple check on just how attractive the economics are for upgrading today in Australia. Figure 1 below presents the findings of a comparison of a 1200mm T8 fluorescent tube and a direct drop-in replacement lamp that is designed to operate on a fluorescent magnetic ballast. This calculation is based on current on-line pricing at www.bunnings.com and using AUD \$0.347/kWh and 10 hours of use per day. The product prices from this on-line retailer are shown in the figure below. And given these inputs, retrofit with an LED T8 tube offers a **2.6 month payback** in Australia, and then goes on to last for 8 years **saving that end-user AUD\$208 (net present value, 2023 dollars) over its**

lifetime – and the bulb costs AUD\$11.33, meaning the lamp will pay for itself 18 times over in electricity savings. And this payback period is not including the financial savings to commercial users that would accrue from not needing to change the light bulbs as often – the LED tube is rated to last 3 times longer.

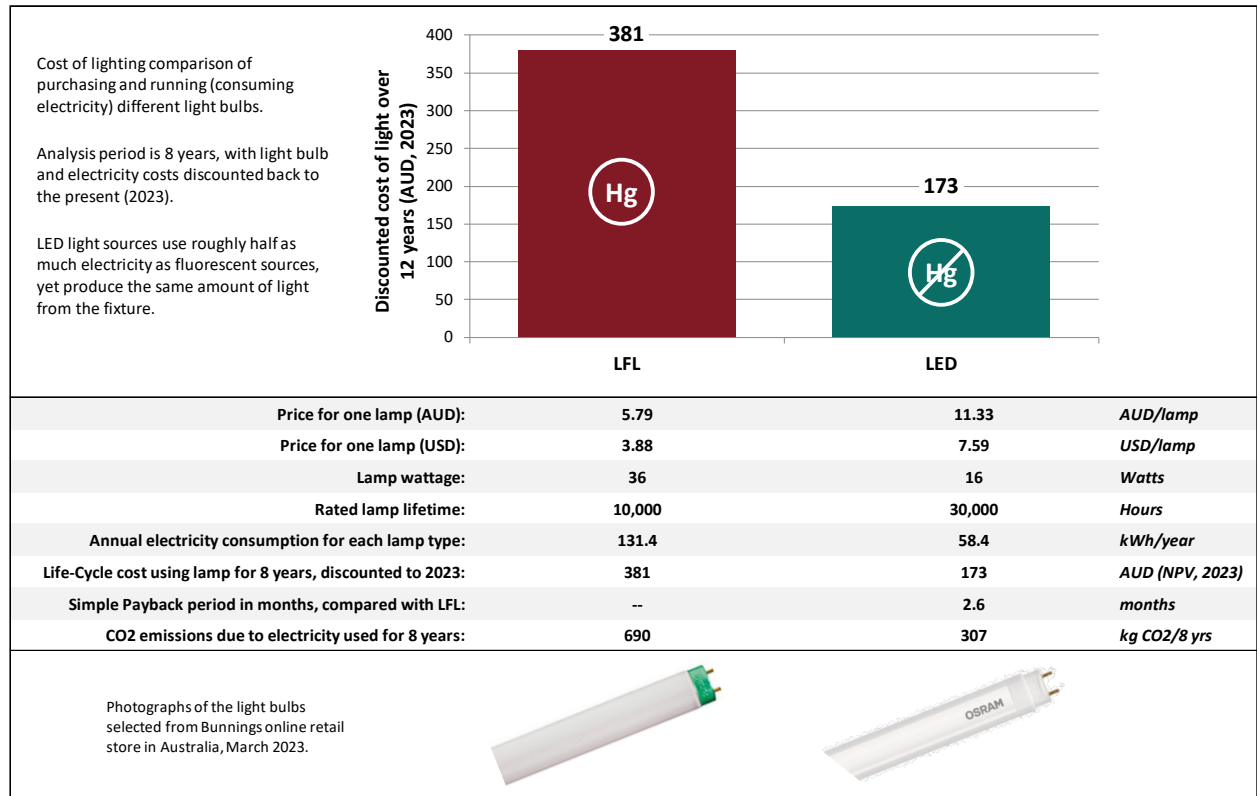


Figure 1. Cost-effectiveness comparison of retrofitting LED T8 Lamps in Australia

One other point we would like to call to your attention are some of the comments that end-users in Australia have posted on the website for Bunnings.com for the [OSRAM T8 LED product](#) – which is designed to be installed and operated on a magnetic (line-frequency) ballast. The start rating for this lamp and the feedback are important to understand the market readiness to move forward with policies that save energy and have a co-benefit of removing mercury.

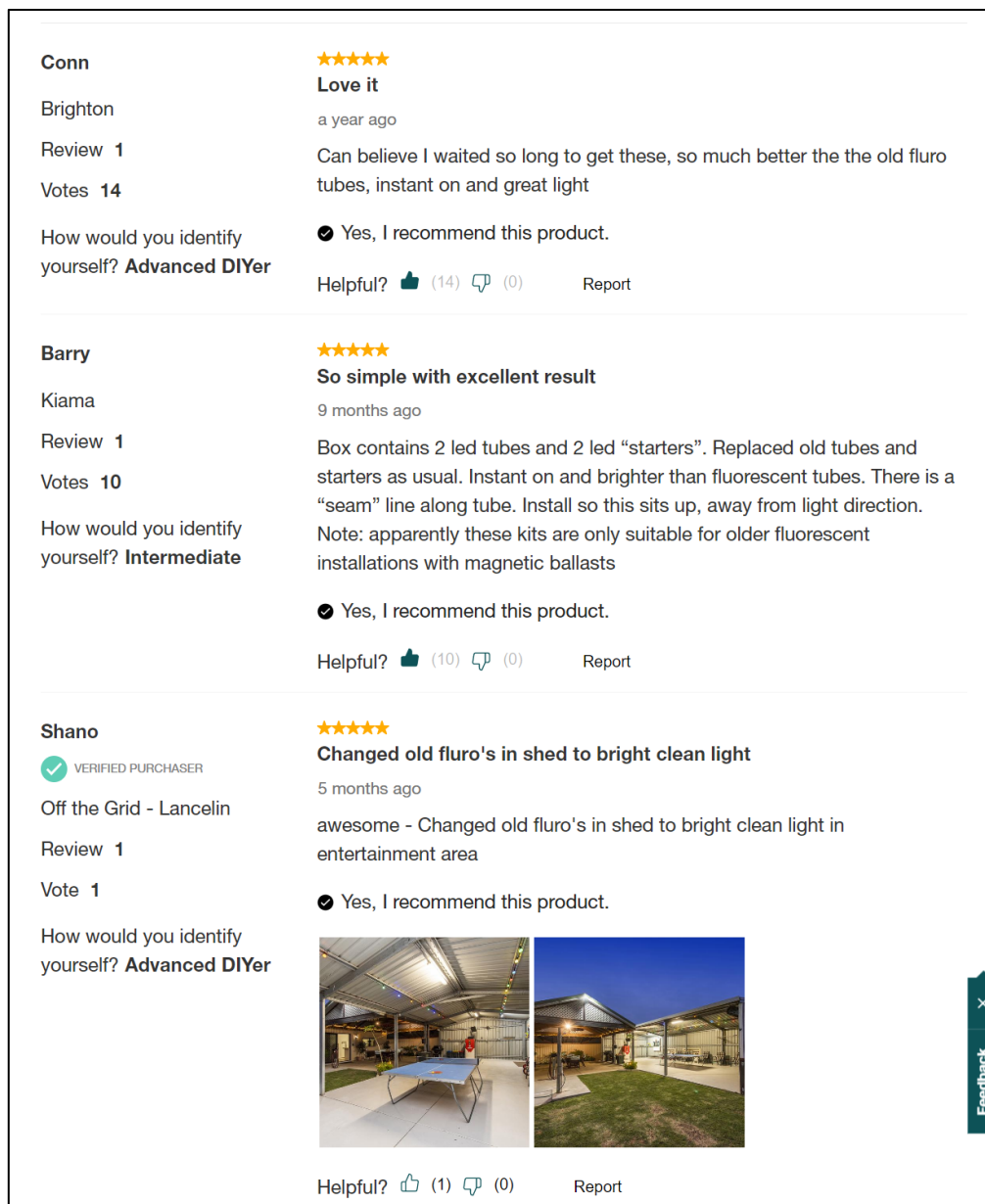


Figure 2. Sample of comments on Bunnings.com about OSRAM LED T8 Retrofit Lamp

The Clean Lighting Coalition would be happy to share our data and analysis on the phasing out of fluorescent lighting of this single lamp comparison as well as our larger data set and policy tracking research with the Australian government. Please feel free to contact us directly for more information on the opportunity to phase-out fluorescent lamps in your market and globally.

Regarding your questions contained in the public consultation document, we have one remark to make in response to the voltage ranges used in the scope of coverage. We have observed in the past where unscrupulous suppliers will try and circumvent regulation through labelling or limited redesign through which to claim their products are outside of scope of general purpose lighting, and yet they continue to be sold in the market as a general purpose bulb. An example of this can be seen in this photo below from a supermarket in London where this supplier had labelled their product “Not for Household Use” and yet placed these incandescent bulbs in the supermarket where consumers purchased them. This required a revision to the regulation to close that loophole.



Figure 3. Example of an unscrupulous supplier circumventing EC No 244/2009 regulations

We have two specific responses to your questions in the public consultation:

Q1) Are there any bulb or cap types that are not categorised by the Determination that you think should be?

The scope as defined in section 14.1 seems to broadly cover the right socket types, however we have two concerns about the definition of voltage:

- 1) We are concerned that the reference to “between 11V and 13V ac” might cause you difficulty if an unscrupulous supplier were to label a product 12V dc and then claim exemption from the regulation. Given that incandescent lamps are not concerned whether the voltage supplied is ac or dc, perhaps it would be better to simply remove the “ac”.
- 2) We would suggest that rather than use the phrase “are determined by rated voltage as follows” to be something like “are capable of operating at either of the following voltages:” This would protect your market against a risk that a supplier may rate bulbs at voltages to circumvent the regulation.

Q5) Are there any additional EU regulation or international standards that you think Australia should adhere to?

We would ask that you consider extending the scope of coverage – including bulb lengths and any additional base types - to include all LED retrofit tubes that are intended to replace fluorescent lamps. This will prepare your supply chain for a policy-driven, cost-effective phase-out of mercury-containing fluorescent lamps.

Annex A. A sample of some of the Policy measures phasing-out Fluorescent Lamps around the world

This Annex presents a global summary of the policies around the world that are phasing out fluorescent lighting. In addition to these, there are other lighting regulatory efforts in their early stages, but those will not be reported until they are made public by their respective policymakers.

1. Global – Minamata Convention on Mercury

At the Minamata Convention on Mercury's Fourth Conference of Parties (COP4), 137 governments [adopted amendments](#) to phase out compact fluorescent lamps (CFLs) by the end of 2025. The governments also agreed to phase out cold cathode fluorescent lamps and external electrode fluorescent lamp (CCFL/EEFL) in 2025. The amendments are shown in the grey shaded rows in the table below:

MERCURY-CONTAINING PRODUCTS	PHASEOUT DATE ¹
Compact fluorescent lamps (CFLs) for general lighting purposes that are < 30 W with a mercury content > 5 mg per lamp burner	2020
Compact fluorescent lamps with an integrated ballast (CFL.i) for general lighting purposes that are 30 W with a mercury content ≤ 5 mg per lamp burner	2025
Linear fluorescent lamps (LFLs) for general lighting purposes: (a) Triband phosphor < 60 watts with a mercury content > 5 mg per lamp; (b) Halophosphate phosphor < 40 W with a mercury content > 10 mg per lamp	2020
High pressure mercury vapor lamps (HPMV) for general lighting purposes	2020
Mercury in cold cathode fluorescent lamps (CCFL) and external electrode fluorescent lamps (EEFL) for electronic displays: (a) short length (< 500 mm) with mercury content > 3.5 mg per lamp (b) medium length (> 500 mm and < 1500 mm) with mercury content > 5 mg per lamp (c) long length (> 1500 mm) with mercury content > 13 mg per lamp	2020
CCFLs and EEFLs of all lengths for electronic displays, not included in the listing directly above	2025

¹ Date after which the manufacture, import or export of the product shall not be allowed

The Clean Lighting Coalition calculated the cumulative benefits (2025–2050) from phasing out CFL.i in 2025:

- Mercury: 34.8 metric tonnes avoided
- Financial: \$105.6 billion USD saved on energy bills²
- Energy: 754 TWh saved
- CO₂: 263 million metric tonnes avoided

The cumulative benefits of CCFLs and EEFLs being phased out in 2025 is assumed to be zero because this technology has already been eclipsed by LED alternatives.

At COP4, the Parties decided to discuss LFLs at [Minamata COP5](#) (30 October–3 November 2023), when they will agree on a phaseout date. The table showing what is under consideration at COP5 is presented below:

MERCURY-CONTAINING PRODUCTS	PHASEOUT DATE ³
LFLs for general lighting purposes: (a) Halophosphate phosphor ≤ 40 watts with a mercury content ≤ 10 mg per lamp (b) Halophosphate phosphor > 40 watts	[2025] [2027] [2030]
LFLs for general lighting purposes: (a) Triband phosphor < 60 watts with a mercury content ≤ 5 mg/lamp	[2027] [2030]

2. United States / North America

California: The U.S. state of California adopted [AB 2208](#), a law that bans the sale of all LFLs and all non-integrally ballasted CFLs starting 1 January 2025. This law was influenced by [research](#) that supported a fluorescent lamp phaseout due to their mercury content. AB 2208 establishes a sales ban on all CFL.i starting on 1 January 2024. The California law is actively being referenced by other states.

Vermont: The U.S. state of Vermont adopted two laws which address some of the same products covered in the California legislation. The clause [10 V.S.A. §7152\(A\)\(6\)](#) phases out all screw-based CFLs, effective 17 February 2023. Vermont also adopted [H.500](#) which bans all four-foot LFLs (all diameters) effective 1 January 2024.

Rhode Island: The U.S. state of Rhode Island drafted a bill modelled after the California bill to phase out all CFLs and LFLs. [This draft bill](#) was introduced into the state legislature in March 2022. It did not complete the legislative process before the end of that term, but they are considering introducing it again in early 2023. CLASP will provide updates accordingly.

Canada: Canada is considering a phaseout of lamps with mercury (CFLs and LFLs) after a public consultation on their [proposal](#). CLASP was informed by the Canadian Ministry of the Environment and

² Assumes US\$0.14/kWh as a global average electricity price (March 2022) [Global Petrol Prices](#).

³ Date after which the manufacture, import or export of the product shall not be allowed

Natural Resources that they expect to publish their updated draft regulation for comment before the end of 2022.

3. Europe

European Union (EU-27): In December 2019, the EU adopted [EU No. 2019/2020](#) which covers all lamps and luminaires placed on the market. On 1 September 2021, the first requirements of that regulation took effect, phasing out CFL.i and T12 LFLs. The second phase, which will take effect on 1 September 2023, will phase out T8 Fluorescent lamps of 600 mm, 1000 mm & 1500 mm length.

In December 2021, the [European Commission made a decision](#) under the Restriction of Hazardous Substances (RoHS) Directive to ban the sales of nearly all [LFLs](#) and [CFLs](#) in 2023. Under this regulation, only T9 circular and certain U-bend fluorescent lamps received an extension.

European Economic Area (EEA): Iceland, Liechtenstein, and Norway, while not part of the European single market, are members of the European Economic Area and as such are required to conform to European regulations to maintain favourable trade status. These countries have therefore harmonised with EU No. 2019/2020 and the 2021 Amendments to the RoHS Directive (example: [Norway RoHS regulation](#)).

United Kingdom (UK): The UK recently left the European Union, but not before it adopted EU No. 2019/2020 – ([UK S.I. 2021 No. 1095](#)). Thus, CFL.i and T12 LFLs were phased out in the UK in 2021 and certain T8 LFLs will be phased out in 2023. The UK also proposed to adopt more ambitious lighting regulations ([BEIS Policy Paper](#), November 2021), setting efficacy levels that would phase out all fluorescent lighting (120 lumens/Watt). In addition to this policy development, the UK's Department for Environment, Food and Rural Affairs (DEFRA) is [currently considering harmonising](#) with the European Commission's amendments to the RoHS Directive.

4. Africa

Southern Africa Development Community (SADC): In June 2021, the sixteen (16) countries⁴ of SADC adopted regionally harmonised quality and performance standard [SADCSTAN HT-109](#). This standard sets a technology-neutral efficacy requirement that phases out fluorescent lamps and transitions to LEDs.

East African Community (EAC): In July 2022, the seven (7) countries⁵ adopted a regionally harmonised quality and performance standard, [EAS 1064-1:2022](#). The standard covers energy efficiency and functional performance requirements, sampling, and test methods for general service and tubular lamps. The requirements of the East African standard are aligned with the Southern African standard and will phase out fluorescent lamps in favour of LEDs.

⁴ The sixteen countries of the Southern African Development Community: Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, United Republic Tanzania, Zambia and Zimbabwe.

⁵ The seven countries of East African Community: Burundi, Democratic Republic of Congo, Kenya, South Sudan, Tanzania, Rwanda and Uganda.

5. Middle East

Sudan – Sudan developed an energy efficiency strategy that includes adopting UNEP United for Efficiency (U4E) lighting regulations that phase out CFLs in 2024 and LFLs in 2025. See page 96 of [Sudan's Energy Efficiency Strategy](#) (February 2022).

Tunisia – The National Agency for Energy Management of Tunisia is drafting lighting MEPS that will phase out all fluorescent lighting technologies by setting efficacy levels that only LED technology can achieve. See the [UNEP press release](#) on the 2022 workshop where the government and stakeholders met to agree the way forward.

6. Asia-Pacific

India – At the Minamata Convention COP4, India supported the phase-out of compact fluorescent lamps by 2025 and linear fluorescent lamps by 2027 to protect human health and the environment from the adverse effects of mercury. In 2021, India's lighting industry association, ELCOMA published [Vision 2024](#) which sets out a roadmap for India to be fully vertically integrated in LED product manufacturing by 2024 and establish itself as the second largest global exporter of LED lighting products and components.

Pakistan – The National Energy Efficiency & Conservation Authority developed the country's first ever [LED MEPS and labelling](#) regulations with the new policy specifically "aimed to enhance the best quality LED products, for a rapid phase-out of CFL lamps and incandescent bulbs."

7. Latin America and the Caribbean

Chile – the Ministry of Energy [published a resolution](#) in 2020 that will phase out CFLs by 2024 by setting mandatory efficacy requirements at a level only LED technology can achieve. In the resolution, the Ministry recognised that "a general change is required in conventional technologies from incandescent, halogen and fluorescent lighting to light-emitting diodes (LEDs)."

Dominican Republic – the Deputy Minister of Energy called for greater use of energy-efficient lighting and highlighted the problem of mercury toxicity from fluorescent tubes. News item is [published here](#).