

12 June 2020

Director, Climate Change and Energy Savings Policy
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Energy Mad – Energy Security Target and Safeguard 2020

Thank you for the opportunity to submit feedback on the NSW Government's Energy Security Target and Safeguard Consultation Paper.

Energy Mad congratulates the NSW Government and the Energy Savings Scheme (ESS) team on the huge success of the scheme to date that is delivering \$5.6 billion of bill savings and has helped avoid 12.8 Million megatonnes of emissions.

This Submission was:

1. **Made** by Energy Mad (Ecobulb) and Primsal who collectively have supplied **38 Million energy** saving lamps into Australasian energy efficiency schemes; and is
2. **Supported** by **eight** Home Energy Efficiency Retrofits (HEER) Registered Accredited Certificate Providers (ACPs) who collectively have created a combined total of **20.7 Million** residential and commercial NSW Energy Savings Scheme ESCs and Victorian Energy Upgrades VEECs to date. These ACPs are listed in Section 4 of this Submission.

Our Submission proposes:

1. The **“Residential Building Lifetime” for the six HEER Schedule E Lighting Activities be harmonized to 15 years**. This would result in the Activity Definition E11 Residential Building Activity Energy Savings formula being amended to the Deemed Activity Electricity Savings equals:

$$LCP \text{ of new Lamp} \times (\text{luminous efficacy of new Lamp} / 33.9 - 1) \times 1260 \times 10 / 10^6$$
2. **Replacing the licensed plumber implementation requirement for Activity E6 with an amended implementation requirement for Activity E6 allowing electricians to change showerheads** when they are doing other HEER Schedule E Lighting installations.

We calculate this would:

1. Generate sufficient financial incentives for ACPs to deliver HEER residential Schedule E Low Cost Activities.
2. As a result, deliver **\$3.5 billion of bill savings** for NSW residential households (**\$337 per household per year**) and **13.3 Million megatonnes** of avoided emissions over the lifetime of these Activities.
3. Deliver a net economic benefit of **\$1,322 Million** and a benefit to cost ratio of **4.8**.
4. Deliver a peak demand load reduction of **352MW**.

We thank the NSW Government and the NSW Department of Planning, Industry and Environment for the positive engagement with stakeholders that is demonstrated by this consultation process.

We would be happy to provide further information as required to clarify any information contained in our Submission.

If you have any further questions about our Submission, please contact Chris Mardon (Founder, Energy Mad) at:

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Kind Regards



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1. Question 12. What issues should the NSW Government consider when setting targets to 2030? At what rate should the targets be increased to reach 13% by 2030?

1.1 We believe the rate of increase in the targets, as specified in the Consultation Paper, are appropriate.

2. Question 13. What are the most promising opportunities once commercial lighting reaches market maturity? What is the likely size and cost of these opportunities?

2.1 We note that commercial lighting had created 22.791 million certificates to date.

2.2 However, commercial lighting is nearing market maturity.

2.3 In contrast, the HEER sub-method had only created 0.328 million certificates to date.

2.4 Relative to commercial lighting, we therefore note that the ESS has yet to deliver a comparative benefit to the 2.6 million NSW residential homes, with very few of these yet to benefit from the ESS.

2.5 The most promising ESS opportunities come from unlocking the residential potential through the HEER Schedule E Low Cost Activities.

2.6 The limited ESS HEER residential activity to date has been due to the financial incentives for the HEER residential lighting activities providing insufficient financial incentives for ACPs to undertake these activities in any volume.

2.7 This has restricted the HEER residential activity to halogen downlight replacements through HEER Activity Definition E1, and predominantly from only one ACP.

2.8 This is because the financial incentives just from halogen downlight replacements make this a marginal or non-viable activity for other ACPs, who are choosing to dedicate their resources to other more financially viable activities such as NSW ESS commercial lighting activities or Victorian Energy Upgrades activities.

2.9 The greatest HEER residential energy savings potential comes from General Lighting Purpose inefficient lamp replacements through HEER Activity Definition E11.

2.10 However, the financial incentives created by General Lighting Purpose inefficient lamp replacements through HEER Activity Definition E11 has been insufficient for ACPs to generate significant savings in this activity to date.

2.11 We note a *“Residential Building Lifetime”* for the HEER Schedule E Lighting Activities of:

1. 15 years for Activity Definitions E1 (halogen downlight replacements) and E5 (luminaire replacements with LED luminaires); versus just
2. 10 years for the other Schedule E Lighting Activities (including E11 for general lighting purpose lamp replacements).

2.12 We therefore propose the ***“Residential Building Lifetime”* for the six HEER Schedule E Lighting Activities be harmonized to 15 years.**

2.13 This would result in the Activity Definition E11 Residential Building Activity Energy Savings formula being amended from Deemed Activity Electricity Savings equals:

$$LCP \text{ of new Lamp} \times (\text{luminous efficacy of new Lamp} / 33.9 - 1) \times 840 \times 10 / 10^6$$

To the new formula of:

$$LCP \text{ of new Lamp} \times (\text{luminous efficacy of new Lamp} / 33.9 - 1) \times 1260 \times 10 / 10^6$$

- 2.14** The other large high potential HEER Schedule E residential activity involves replacing existing showerheads with ultra-low flow showerheads (Activity E6).
- 2.15** Activity E6 has yet to create any residential certificates.
- 2.16** This is because the costs involved with the licensed plumber implementation requirement of this activity creates insufficient financial incentive for ACPs to undertake this E6 showerhead activity.
- 2.17** We note that no plumbing work is required to change showerheads.
- 2.18** We therefore propose the **removal of the licensed plumber implementation requirement for Activity E6**, with an **amended implementation requirement for Activity E6 that allows electricians to change showerheads** when they are doing other HEER Schedule E Lighting installations.
- 2.19** Harmonizing the “Residential Building Lifetime” for the six HEER Schedule E Lighting Activities to 15 years, as outlined in 2.12 and 2.13 above, would create significant financial incentives for ACPs to undertake General Lighting Purpose inefficient lamp replacements through HEER Activity Definition E11.
- 2.20** Removing the licensed plumber implementation requirement for Activity E6 and allowing electricians to change showerheads, as outlined in 2.18 above, would also create sufficient financial incentives for ACPs to undertake residential showerhead replacements through HEER Activity Definition E6 at the same time they undertake HEER Schedule E Lighting Activities.
- 2.21** We therefore forecast these two amendments would result in significant HEER Schedule E residential lighting and showerhead replacement activities.
- 2.22** We calculate the average participating **NSW residential household would save \$337 per year** on their residential energy bills from these Schedule E activities.
- 2.23** Table 1 summarizes the costs and benefits to the ESS we calculate from the HEER Schedule E residential and showerhead lighting activities that would result from our two proposed amendments.
- 2.24** **We calculate our proposal would deliver:**
1. **\$3.5 billion¹ of bill savings** for NSW residential households (**\$337 per** household per year);
 2. **13.3 Million² megatonnes** of avoided emissions;
 3. A net economic benefit of **\$1,322 Million**;
 4. A benefit to cost ratio of **4.8**; and a
 5. Peak demand load reduction of **352MW**.
- 2.25** We are happy to provide this detailed modelling to the NSW Government upon request.

¹ Over the HEER rated residential lifetimes of the energy savings products.

² Over the HEER rated residential lifetimes of the energy savings products.

Table 1 Summary of costs and benefits from our two proposed amendments

Present value of incremental costs and benefits over the Products Lifetimes	
Scheme costs	
Government costs (\$m)	\$13
Regulatory costs (\$m)	\$332
Total costs (\$m)	\$345
Scheme benefits	
Reduced wholesale purchase costs (\$m)	\$877
Avoided network investment (\$m)	\$704
Avoided cost of greenhouse gas emissions (\$m)	\$66
Avoided health cost of air pollution (\$m)	\$20
Total benefits (\$m)	\$1,667
Net economic benefit (\$m)	\$1,322
Benefit-cost ratio	4.8

- 2.26** Table 2 summarizes how our two proposed amendments would assist the NSW Government aims from extending the scheme and increasing the energy savings target.

Table 2 How our proposed amendments would assist the NSW Government Aims

NSW Government Aim	How this is delivered by our proposal
Improve energy affordability and reliability for both households and businesses	By saving the average participating NSW home \$337 per year on their energy bills
Make emissions abatement available at low cost while making the transition to net zero emissions by 2050 cheaper and easier.	Emissions from these HEER residential activities would deliver mass emissions abatement from a certificate price above \$25 per ESC

- 2.27** A significant number of jobs in small-to-medium sized enterprises and regional areas would be created from the HEER Schedule E residential and showerhead lighting activities that would result from our two proposed amendments.
- 2.28** We calculate this would **create between 881 and 1,071 jobs³**.

³ Based on an equivalent level of residential activity, and hence employment, to the current Victorian Energy Upgrades residential activity. More detail about this can be found in the 24 January 2020 Submission "Proposed Extension Part 21 Activities - Manufacturer and AP Submission on VEU Lighting Activities Issues Paper" to the Victorian Energy Upgrades (VEU) Lighting Activities Issues Paper.

3. Question 14. What would prevent the uptake of new opportunities? What support (including new standards and calculation methods) does industry need to transition to new opportunities?

3.1 As outlined in our response to Question 13 in this Submission, the insufficient financial incentives for ACPs to undertake HEER residential lighting and showerhead replacement activities currently prevents the uptake of the HEER residential activities to small volumes.

3.2 As outlined in our response to Question 13 in this Submission, we proposed:

1. That the **“Residential Building Lifetime” for the six HEER Schedule E Lighting Activities be harmonized to 15 years**. This would result in the Activity Definition E11 Residential Building Activity Energy Savings formula being amended to the Deemed Activity Electricity Savings equals:

$$LCP \text{ of new Lamp} \times (\text{luminous efficacy of new Lamp} / 33.9 - 1) \times 1260 \times 10 / 10^6$$

2. The **removal of the licensed plumber implementation requirement for Activity E6**, and instead create an **amended implementation requirement for Activity E6 that allows electricians to change showerheads** when they are doing other HEER Schedule E Lighting installations.
- 3.3 These two amendments would create sufficient financial incentives for ACPs to undertake significant HEER Schedule E residential lighting and showerhead replacement activities.
- 3.4 We would expect to see significant residential HEER Schedule E lighting and showerhead activities just four months⁴ after our proposed harmonization of the HEER Schedule E lighting residential building lifetimes to 15 years took effect.

4. About the Manufacturers and Accredited Persons represented by this Submission

This Submission was:

1. **Made** by Energy Mad (Ecobulb) and Primsal who collectively have supplied **38 Million energy** saving lamps into the VEU and other energy efficiency schemes; and is
2. **Supported** by the following **eight** HEER Registered ACPs who collectively have created a combined total of **20.7 Million** residential and commercial NSW Energy Savings Scheme ESCs and Victorian Energy Upgrades VEECs to date:
 - a. Auspro
 - b. Aussie Greenmarks
 - c. Cyanergy
 - d. Easy Being Green
 - e. Energy Makeovers
 - f. Green Home Green Planet
 - g. LED Saves
 - h. Lifestyle Technologies

⁴ Four months is required for the relevant product approvals and stock manufacturing.