Commercial Buildings - SRG Meeting Feedback March 2019	
1. Is there anything missing from the summary of policy options for improving existing commercial buildings?	## Government incentive schemes for lighting upgrades are no longer relevant There are five existing Government incentive schemes that include lighting upgrades: o The NSW Energy Savings Scheme o The Victorian Energy Upgrade Scheme o The SA Retailer Energy Efficiency Scheme o The ACT Energy Efficiency Improvement Scheme o The Commonwealth Government Emissions Reduction Fund Lighting Council Australia highlights that the above Government incentive schemes for lighting are now funding upgrades that would have occurred regardless of these schemes. Due to the now well-established LED market, the widespread availability of quality LED products, the limited lifetime of traditional lighting products and the limited availability of traditional lighting products there is no longer a need for government incentives in the lighting market. LEDs are now business as usual. Traditional technology products such as halogen lamps have relatively short life (in the order of 1500 - 2000 hours or one to two years when used for 3 hours per day). Halogen products will naturally fail and need to be replaced soon after they are banned (A ban on the most widely used halogen lighting products is slated to occur in 2021). Compact fluorescent lamps (CFLs) have a longer lifetime and much improved efficiency (compared with halogen). The market share of CFLs has been in sharp decline since 2014 due to the establishment and advantages of LEDs. It is expected that CFLs will be removed from the market by market forces over the coming few years. The current state incentive schemes include relatively high compliance costs due to different compliance requirements. The benefits in regard to the funding of lighting upgrades are now questionable. Further, the nature of the schemes can incentivise the use of low-quality products, poor installations and rorting of the schemes. Also, the current high administration costs of the schemes and duplication do not maximise the energy reduction potential. It must also be acknowledged that these schemes increase the cost of electricity for consumers so they must be delivered as efficiently as possible and especially without paying for upgrades that would have occurred regardless.

2. What policy options do you think present the greatest opportunities to improve the energy performance of existing commercial buildings, and what do you think the order of priority, or suite of options, should be?	## Market education Lighting Council Australia supports initiatives that are low cost on the economy and can achieve relatively high energy-efficiency, health and productivity benefits. Education of the market regarding the benefits of LEDs should be a priority (i.e. Your Home Guide; Point of sale material; Energy Bill information, etc.). Education of the construction industry (i.e. developers, builders, electricians, architects, designers, building owners, commercial tenants etc.) when buildings are refurbished / renovated/ upgraded should be a priority. Education messages should be kept simple (i.e. use LEDs, seek compliant products from reputable companies, Lighting Council Australia has information on selecting appropriate products and avoiding non-compliant products). Widespread market education initiatives including suggested priorities for upgrading buildings with the lowest cost and highest benefit potential should be undertaken. Case studies and information sheets on the various upgrade options (e.g. upgrading to LED lighting) should be developed and widely promoted. Lighting Council Australia can assist to develop such guidance material (e.g. case studies and information sheets) as it is important to include information that will guide the market towards quality and improved lighting outcomes (i.e. low glare, high colour rendering, correct illumination levels etc.). Further, this work presents an opportunity to improve lighting outcomes, improve lighting comfort and increase productivity if undertaken correctly. Education and training of the market could be undertaken by peak industry organisations in combination with Governments. ## Promotion of certain lighting upgrades Technology and product improvements exist now that should be widely promoted. For example, sensor (i.e. motion sensor) technology has improved, become miniaturised and is reducing in cost. Motion sensors were traditionally separate products that were linked to multiple luminaires. Increasingly motion sensors are being incorporated into individual luminaires and this market trend has the potential to provide increased energy savings particularly in commercial buildings and residential common areas. Policy levers such as Minimum Energy Performance Standards are decreasingly relevant to lighting products due to the difficulties of regulating products with many different degrees of variability model to model and short market life (i.e. such is the continuing rapid pace of LED technology development that LED products are often only on the market for six months before being upgraded to more efficient technology). The transition to LED technology has created markets where energy efficiency is already a driving factor for consumers, and hence the opportunity to reduce energy usage is moving to the use of lighting controls to ensure that lighting equipment is used only when and where it is needed. Motion sensors, dimming and daylight harvesting are all examples of how energy usage can be further reduced by promoting sensor technologies.

3. What are the key considerations that need to be taken into account with the policy options identified?	## Lighting market context The LED lighting market has been developing now for ten years is well established quickly maturing and is now regarded as business as usual. LED product efficiency is still increasing and product costs are decreasing. Commodity LED products (i.e. LED lamps and LED downlights) are becoming comparable in price to old technology products (i.e. halogen and compact fluorescent) with LEDs having significantly longer lifetimes and payback periods in the order of six months[1]. The new build market is predominantly LED. There is no further development underway in historical lighting technology products. LED products now dominate retail shelf space. Halogen and fluorescent products are declining quickly in market share. LED lamp Minimum Energy Performance Standards will likely be introduced in Australia in September 2021. Halogen lamps may be phased out at this time. Traditional products such as halogen lamps have a limited lifetime in the order of 1500-2000 operating hours or 18 months to two-years when used for three hours per day. LED products are becoming widely accepted in the market and will naturally replace traditional products in the coming few years. ## Quality lighting outcomes, health benefits and energy productivity should be considered as part of this project. Any activity that is undertaken through this project should aim to not only save energy but also improve lighting outcomes, health benefits and maximise energy productivity through lighting upgrades. All are possible to achieve. Lighting Council Australia proposes this project includes quality lighting outcomes as a minimum requirement. Also, there are research projects underway that may point to the health, well-being and productivity benefits of 'human centric lighting' and the use of higher illuminance levels for certain tasks. This project should not simply aim to maintain health and productivity when using less energy. However, it should look at maximising human health and productivity even if this means that the energy savings are slightly reduced. The main or at least equal aim of this project should be maximising energy productivity and not just maximising energy savings. This project should also not compromise the ability of the lighting market to improve human health, comfort and well-being if current research efforts reveal that there are benefits in using particular types of lighting that may not maximise energy savings. For example, the use of indirect lighting is not as efficient to deliver compared with direct lighting. However, there are certainly benefits including reduced glare, increased comfort, warmth and attractiveness. Commercial retailers see these benefits as increased foot traffic and sales. 'Tuneable' lighting has the potential to improve human health outcomes (i.e. improved sleep) through alignment with circadian rhythms (i.e. higher lighting levels and higher correlated colour temperature lighting in the morning and lower lighting levels and lower colour temperatures in the evening). This project should not compromise the ability of the lighting industry to deliver quality lighting outcomes that improve the health, comfort and productivity of Australians. In fact, the project should be aiming to maximise the health, comfort, well-being and energy productivity of Australia. The project should not be restrictive to only focus on energy savings.

	Modelling • Any modelling of building lighting should reflect and include the wide range of lighting types used and not be overly simplistic (i.e. not simply only include downlights). • Market trends should be accommodated – i.e. the trend towards the use of more indirect lighting and architectural lighting and a greater number of lighting points being utilised should be included.
4. What research might assist in progressing this work?	A literature review of current research outcomes regarding the health, well-being, and energy productivity benefits of certain types of lighting would maximise the potential benefits of the lighting component of this project.
5. Would you be interested in attending a workshop in person at some point during June/July/August? If so, what jurisdiction/s would be your preferences?	Yes, Sydney or Melbourne.
6. Do you have any other comments or suggestions?	
List any research or data sources that is relevant to informing these questions or the project. •	

Please return your responses to these questions by no later than **Wednesday 17 April 2019** to NEPPSecretariat@environment.gov.au.

Residential Buildings –SRG Meeting Feedback March 2019	
1. Is there anything missing from the summary of policy options for improving existing homes?	Lighting Council Australia comments regarding commercial buildings are relevant here.

[1] Lighting Council Australia LED Buyers Guide - https://www.lightingcouncil.com.au/wp-content/uploads/2018/12/Lighting-Council-Australia-LED-Buyers-Guide.pdf

2. What policy options do you think present the greatest opportunities to improve the energy performance of existing homes, and what do you think the order of priority, or suite of options, should be?	The comments made by Lighting Council Australia in the commercial buildings section above are relevant here. Further, the comment below mainly relates to residential buildings. Promotion of certain lighting upgrades There have been technology and product improvements that should be widely promoted. Recessed luminaires were traditionally a fire hazard if covered in thermal insulation. The avoidance of recessed luminaires by insulation installers and electricians causes 'holes' and inefficiency in the building insulation system. Recessed luminaires (rated 'IC-4') are now available that can be covered in insulation. The widespread replacement of old recessed luminaires with 'IC-4' luminaires and coverage of IC-4 luminaires with insulation has the potential to improve the efficiency of building thermal insulation and should be widely advertised.
3. What are the key considerations that need to be taken into account with the policy options identified?	The comments made by Lighting Council Australia in regard to commercial buildings are relevant here.
4. What research might assist in progressing this work?	The comments made by Lighting Council Australia in regard to commercial buildings are relevant here
5. Would you be interested in attending a workshop in person at some point during June/July/August? If so, what jurisdiction/s would be your preferences?	Yes, Sydney or Melbourne
6. Do you have any other comments or suggestions?	Updating regulations that define the relationship between landlords and renters will be a key consideration in driving upgrades to lighting equipment in domestic settings. The change in paradigm of household lighting from replaceable lamps to integrated-long life fittings and connect means that renters need clear guidelines on their rights.
List any research or data sources that is relevant to informing these questions or the project. •	

Please return your responses to these questions by no later than **Wednesday 17 April 2019** to NEPPSecretariat@environment.gov.au.