Attachment 8.01

Revisions to the public lighting proposal

January 2015

Ausgrid revised regulatory proposal attachment

Contents

Document and Amendment History

Issue No.	Date	Approved By	Summary of Changes
1.0	Jan 2015		Final

Revisions to the public lighting proposal

About this document

This document is a supporting document to Ausgrid's response to the Australian Energy Regulator's 2014-19 draft decision.

It provides justification and explanation of a specific issues raised in the draft decision that significantly impact on revenue.

This document should be read in conjunction with all substantive submission documents, particularly those relevant to public lighting.

1 Outline of our submission

The draft determination outlines a number of key issues the AER has considered in handing down its public lighting decisions. Ausgrid agrees with many of these decisions however believe that others need further consideration. Key points in the draft determination are summarised below:

- Public lighting form of control
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Our response to the draft determination indicates where we accept or reject the AER's draft decisions and the reasons for our position.

2 Public lighting form of control

Ausgrid agree with classification of public lighting as an alternative control service and the form of price control as per the AER's stage 1 framework and approach paper.

3 Contestability

Ausgrid accept the AER's views on contestability for the installation and maintenance of public lighting assets as per section 16.7 of the draft determination.

4 Ausgrid's confidentiality claims and impact on the draft determination

Ausgrid notes that the AER consider the draft decision a place holder due to Ausgrid's confidentiality claims. Ausgrid's concerns over disclosing confidential information such as suppliers and service providers pricing were made clear in our submission to the AER on 12 August 2014. Ausgrid believes that the AER's stated objectives in its initial disclosure notice dated 15 July 2014 can be achieved without the disclosure of such information. Ausgrid has structured its regulatory proposal, to the extent possible, to provide as much information on a non-confidential basis. We have published working pricing models on our website at (http://www.ausgrid.com.au/Common/About-us/Newsroom/News-gallery/Network-maintenance/Street-lighting.aspx) and all underlying assumptions that do not include any third party commercial in confidence information. A customer would be able to use these models and apply input prices that they think are efficient to calculate the public lighting charges. This increases their engagement and ability to make effective submissions to the AER.

Since Ausgrid's submission on the initial disclosure notice the AER is yet to make a decision on whether to disclose this information or not. The AER stated that "Ausgrid has refused to publically release crucial information to councils" and that this is "hindering the ability of stakeholders to make informed submissions". On that basis the AER has indicated that the draft determination is a place holder determination based only on the public information submitted. Ausgrid submits that we have followed the confidentiality guidelines set by the AER and that the decision to disclose this information or not rests with the AER.

5 Public lighting operational charge pricing inputs

Ausgrid has reviewed the AER's findings on operational expenditure and has revised its proposed operating expenditure pricing models where necessary to address matters raised.

We have highlighted all changes made to our cost build up assumptions in this submission. The key points raised in our revised proposal are:

- We accept in part the AER's benchmarked lamp failure rates. However we note that there is no allowance in the AER's revised model for the recovery of costs associated with failures of other public lighting components (i.e. non lamp related failures).
- The AER's finding that a bulk lamp replacement (BLR) of 4 years is considered efficient does not take into account Ausgrid's current population of luminaires nor the lighting compliance issues that were set out in Ausgrid's proposal. Ausgrid's submission is that a 3 year BLR is the most appropriate for our network to maintain compliance with the Australian Standard for public lighting and particularly the specified light output.
- Ausgrid notes that the AER made no reference to our time and motion study when rejecting our spot repair time of 45.4 minutes. The 31.7 minutes that the AER consider efficient was based on a report by EMS from the 2009-14 determination which Ausgrid refuted.
- Ausgrid accepts the labour escalators proposed by the AER.
- It is unclear why CPI figures were removed from the OPEX pricing model as this was not documented. The pricing model has been amended with updated CPI figures.

5.1 Bulk Lamp Replacement Cycles

The AER's draft determination states that Ausgrid should move to a four year BLR for all lamp types. In making its conclusions the AER noted that a three year BLR is not considered efficient "given the expected life of lamps and technological advancements that are improving lamps life". The AER also noted that "different bulk lamp replacement cycles could increase the costs due to a reduction in economy of scale having to work different cycle times within the same geographical area.

The determination of efficient BLR replacement cycles is dependent upon numerous company and area specific factors. It is efficient and expected that each of the NSW DNSPs have a different approach to achieve efficient public lighting maintenance costs. The following factors have a significant effect on determining the efficient BLR cycles; BLR unit costs, spot replacement cost and population of lamp types.

Ausgrid agree that there have been significant advancements in lamp technology, particularly over the 2009 to 2014 regulatory period. Ausgrid has moved to long life lamps as a standard lamp replacement where this technology is available. Ausgrid has installed long life lamps in 190,000 luminaires since 2011, however there still remain three lamps types that are predominant on Ausgrid's network, namely 250W Mercury Vapour, 400W Mercury Vapour and twin 20W (18W) tubular fluorescent that have not made significant technological advancements and which are not technically suitable for a four year BLR. The technical reasons for this were detailed in Ausgrid's initial proposal in attachment 8.12, Appendix B. However, quite simply, these lamps will not produce enough light in the fourth year of the BLR cycle to remain compliant to Australian Standard lighting levels.

Ausgrid has approximately 41,000 of these luminaires remaining on our network that need complete replacement before a four year BLR would be technically and financially viable. Ausgrid has programs in place to achieve this, however they have stalled somewhat as more customers are requesting LED street lights to be used. At this point our customers have not requested accelerated replacements for category V roads using High Pressure Sodium (HPS) technology as they wish to wait for LED street lights. This view was reinforced at our recent Networks NSW joint venture tender consultation meetings with councils. Ausgrid have rolled out approximately 10,500 category P LED street lights, many of which have replaced twin 20W (18W) tubular fluorescent luminaires. This is the largest roll out in Australia and we are currently in the process of sourcing a suitable category V LED street light which, if economically and technically viable may then be used to replace the necessary luminaires to move to a four year BLR program.

Further to this remains the question of liability regarding non-conforming lighting installations. Moving to a four year BLR will cause many of our lighting installations to be non-compliant in the fourth year due to the lumen levels dropping below those specified in AS1158.1.1 and AS1158.3.1. This has the potential to put Ausgrid at financial risk from litigation.

Ausgrid submits that the AER has not considered our proposed three year BLR cycle based on our current population of street lights and relied solely on benchmarking that is not appropriate for Ausgrid's network. This will lead to an increase in costs to the customer and lead to unacceptable level of compliance and subsequent risk with respect to safety and reliability.

Until Ausgrid is in a position to move to a four year BLR program where equivalent efficiencies via economies of scale can be leveraged and whilst the AER agrees with Ausgrid that a hybrid BLR cycle for different lamp types is inefficient, the cost associated with a three year lamp replacement program is the most efficient approach currently available. Ausgrid therefore resubmits its operational expenditure model based on a three year BLR.

5.2 Failure rates

The draft determination table 166-23 lists a number of lamp failure rates that are considered by the AER to be efficient. The AER amended Ausgrid's public lighting opex model to reflect these efficient failure rates however have remained silent on the recovery of costs associated with failure modes of other street lighting components (i.e. not lamp related). Table 1 lists the groups in which public lighting failures are recorded.

Table 1 - Failure groups

Failure Groups
Choke
Fuse
Insulated Spigot
Lamp
Light bracket
Luminaire
Other
PE cell
Service wire
Shade
SL wiring (excluding mains)
Starter
Visor

The AER notes that Endeavour Energy "has achieved and is again proposing for the 2015-19 regulatory control period lower failure rates across its lamps of 4.46 per cent" and that "Victorian distribution businesses are also achieving the lower failure rates in line with those proposed by Endeavour Energy". Ausgrid has confirmed with Endeavour Energy that the rates provided in their submission are failure rates of lamps in isolation and do not include failures of other components. This was also clarified by Endeavour to the AER (inquiry ref 27).

Attachment 8.12, section 3.3 of Ausgrid's initial proposal details how Ausgrid's failure rate inputs to the opex pricing model were calculated. This section states "Ausgrid has not calculated failure rates for each individual component, what has been calculated are the number of times a particular lamp type has required some form of unscheduled maintenance…It should be noted that these results are not lamp failure rates". Ausgrid has segregated the lamp and attendance rates in this manner as using lamp failure rates in isolation to calculate unscheduled maintenance costs does not give an accurate representation of the costs required to maintain Ausgrid's specific public lighting assets, particularly given Ausgrid's cost build up model.

In response to the AER's draft determination Ausgrid has broken down the call out / attendance rates that were provided in our initial proposal to specifically highlight the lamp failure component of this total maintenance response. Ausgrid has used work records from 01/07/2011 to 30/06/2014. This may help enable a more like for like comparison of lamp failure rates across DNSPs to be made.

Ausgrid captures all defects that it must respond to for rectification; however the cause of the failure is not always captured at a granular enough level to enable detailed analysis. This is currently being changed to aid future public lighting failure analysis. For example, if a lamp and a PE cell are replaced there is no way of knowing which of these components caused the failure. In order to isolate lamp failure rates we can estimate best and worst case lamp failure scenarios. Completed maintenance tasks that only include a lamp replacement are obviously due to a lamp failure. This can be considered a best case scenario, and Ausgrid has calculated this value to be 29% of all maintenance tasks completed. The worst case scenario arises when we consider all maintenance tasks that include a lamp change amongst a number of other tasks. This scenario occurs in 56% of all maintenance tasks. Ausgrid estimates that the actual number of maintenance call outs due to lamp failure lies between the best and worst case scenarios, that is 42% this implies that the remaining 58% of maintenance tasks are not lamp related. Ausgrid also submits that if the BLR cycle is increased to four years then the total number of maintenance tasks due to lamps failing will also increase.

Table 2 summarises the call out rates that Ausgrid's submitted in its initial proposal and the estimated lamp failure rates given a 42% proportion of call outs being generated by a lamp failure.

Table 2 - Lamp failure rates and total call out rates

Lamp type	Estimated lamp failure rate	Estimated failure rate of other components	Total call out rate	Draft Decision Failure rates
MBF1x125	5.73%	7.84%	13.57%	4.00%
MBF1x250	5.00%	6.83%	11.83%	4.00%
MBF1x400	5.29%	7.24%	12.53%	4.00%
MBF1x42 (CFL)	6.51%	8.90%	15.41%	6.00%
MBF1x50	7.99%	10.92%	18.91%	4.00%
MBF1x80	3.49%	4.77%	8.26%	4.00%
SON1x100	5.68%	7.76%	13.44%	5.00%
SON1x150	5.31%	7.26%	12.57%	5.00%
SON1x250	5.54%	7.58%	13.12%	5.00%
SON1x400	6.08%	8.32%	14.40%	5.00%
SON1x70	5.11%	6.99%	12.10%	5.00%
TF1x40	6.70%	9.15%	15.85%	6.00%
TF2x20	4.35%	5.94%	10.29%	6.00%

Table 3 compares Ausgrid's call out rates to the AER's failure rates to calculate the difference in the overall quantum of maintenance tasks. The weighted average call out rate given our population of luminaire types is 11.98%. This represents approximately 28,463 unscheduled maintenance tasks per year. If the AER were to adopt their draft determination failure rates this would equate to approximately 11,367 maintenance tasks leaving a shortfall of 17,095. This is not feasible and would lead to a significant reduction in service availability of our street lighting network and have a severe impact on the safety of road users.

Table 3 - Quantum of work

Lamp type	Population	Total call out rate	Draft Decision Failure rates	Ausgrid calculated number of notifications	Calculated number of notifications given AER failure rates
MBF1x125	5514	13.57%	4.00%	748	221
MBF1x250	17334	11.83%	4.00%	2051	693
MBF1x400	6575	12.53%	4.00%	824	263
MBF1x42 (CFL)	50200	15.41%	6.00%	7736	3012
MBF1x50	11337	18.91%	4.00%	2144	453
MBF1x80	76969	8.26%	4.00%	6358	3079
SON1x100	1441	13.44%	5.00%	194	72
SON1x150	21013	12.57%	5.00%	2641	1051
SON1x250	26280	13.12%	5.00%	3448	1314
SON1x400	2435	14.40%	5.00%	351	122
SON1x70	2160	12.10%	5.00%	261	108
TF1x40	492	15.85%	6.00%	78	30
TF2x20	15837	10.29%	6.00%	1630	950
Total	237,587*	11.98% (Weighted Avg)	4.78% (Weighted Avg)	28,463	11,367
*The shortfall in population is due to 10,500 LED streetlights not being included in this analysis					

Ausgrid resubmits is public lighting opex model (Attachment 8.02 D) including the total call out rates in Table 2. These rates remain unchanged from our initial proposal. Where Ausgrid has not performed specific analysis on a particular lamp type we have adopted the AER's proposed lamp failure rates.

5.3 Mercury Vapour Lamps – Failure Rates

The AER has applied the same 4% failure rate across all Mercury Vapour (MBF) lamps and has made no distinction between low and high wattage. There has been little advancement in high wattage mercury lamps in recent years in contrast to low wattage mercury lamps. This should be considered when applying lamp failure rates to calculate maintenance costs. Table 4 details the difference in failure rates for currently available Mercury Vapour lamps.

Table 4 - Mercury vapour lamp failure rates

Manufacturers Failure rates		
Hours of operation	% failure	
	Long life 50, 80, 125W MBF	250 & 400W MBF
4000 (1 year)	1.00%	4.50%
8000 (2 years)	3.00%	8.50%
12000 (3 years)	4.50%	18.50%
16000 (4 years)	10.00%	28.00%
20000 (5 years)	19.00%	50.00%

Whilst Ausgrid agree that the lamp failure rates of 50, 80, and 125W MBF lamps should be in the order of 4.0% per year, we do not agree that a similar failure rate can be applied to 250W and 400W MBF lamps. Ausgrid's modelling based only on theoretical information suggests that the lamp failure rate (without other component failures) would be in the order of 13% p.a. when these lamps are subject to a four year BLR period.

5.4 Time taken for repairs

The AER stated that Ausgrid's proposed 45.4 minutes time to repair spot outages is not considered efficient. The AER considers the 31.7 minutes time to repair set in the last regulatory determination remains an appropriate benchmark however no further analysis was provided. Ausgrid maintains its position from the previous determination however has also undertaken a significant time and motion study that was submitted as supporting documentation (ID00266). The AER has made no comment on this new information.

Ausgrid's assumptions regarding average spot repair tasks reflect the particular circumstances of Ausgrid's business and an analysis of the type of tasks undertaken by Ausgrid.

Ausgrid assumes that a spot maintenance task on a non-traffic route requires 2 staff. Ausgrid has assumed on average one additional staff member is required for traffic routes reflecting:

- Whenever traffic control is required, it requires 2 staff to undertake traffic control;
- However, where the spot maintenance task is routine and access to the light is safe and available without disrupting traffic, the maintenance task will be undertaken with a 2 person crew.

This is an appropriate assumption as access to major roads (with clearways etc) means that, in most cases, traffic control will be required.

Ausgrid's calculations on the total time to undertake a spot maintenance task is based on three major categories

- Travel time
- Job preparation time
- Repair time

Ausgrid's time and motion study comprehensively broke down a number of spot maintenance tasks to justify the repair time in our opex pricing model.

5.5 Travel Time

Travel time is dependent on the time of day, distance between jobs and the traffic conditions at the time of travel. Sydney's CBD and surrounding suburbs are notorious for traffic congestion[1]. Even the smallest of journeys can take a significant amount of time. In addition, many of the routes will require significant distances to be travelled.

Ausgrid's operations in the North (out of Gore Hill) undertake spot replacements as far as:

- Palm Beach to the North East of Gore Hill (37 km away taking over an hour for a standard sedan)
- Brooklyn to the North of Gore Hill (44.9km away and taking around 50 minutes for
- Manly to the East of Gore Hill (13 km away taking around 30 minutes for a standard sedan)
- Kirribilli to the of South of Gore Hill (4.4 km away taking around 10 minutes for a standard sedan) Carlingford to the West of Gore Hill (19.4 km away taking around 20 minutes for a standard sedan)

1 http://www.tomtom.com/lib/doc/pdf/2014-05-14%20TomTomTrafficIndex2013annualAUNZ-km.pdf

These times refer to travel time only and would not take into account times to find the specific address or street light at fault (as the fault will not be obvious during daylight hours), or to park the vehicle. Incorporated within travel time is time taken prior to and following daily patrols. Maintenance crews are responsible for ensuring the truck and plant on the truck has sufficient inventory to undertake daily tasks and is safe and reliable. Added to this are relevant administrative activities before and after a shift which contribute on average a total of 30 minutes. Ausgrid routinely groups replacement tasks within a common locality to achieve further efficiencies. However the ability to do this is limited with a target repair time of 8 days, as per the NSW public lighting code. It is rare for repairs to be conveniently clustered and more likely that tasks are located in separate suburbs.

Given the above factors, Ausgrid has assumed an average travel time of 29 minutes between spot maintenance tasks. Ausgrid has estimated that the typical travel time is 20 minutes, however in a number of instances a return journey could be up to three hours. An additional 9 minutes has been added to account for 5% of maintenance tasks incurring travel time of up to three hours. This is considered conservative given:

- the large proportion of travel that is inherent in spot maintenance work.
- the distance from the depot to the first repair task and from the last; and
- the limitations on repair works being clustered in any one region.

Ausgrid also notes that in the April 2009 final determination[2] the AER approved a default travel charge relating to 30 minutes which applies to all charges for monopoly services.

5.6 Job preparation and repair times

Job preparation time is a crucial aspect of the maintenance task. Prior to any maintenance of the asset being undertaken our crews are obliged to follow Ausgrid's work methodology and OH& S requirements.

As part of its submission Ausgrid has included a time and motion study (field observation) of the activities of a number of its street lighting repair crews, which provides substantiation of the time taken to prepare and repair a job (ID00266)

The following safe work methodology (job preparation) is mandatory for each maintenance job.

- visual inspection of the site and safety discussion;
- preparation of Hazard and Condition Assessment
- with reference to SWMS (Safe Work Method Statement) and with strict adherence to the Electrical Safety Rules;
- control of the hazards (as trained) i.e. local traffic
- control, witches hats etc.;
- recording of data (a PL "pink sheet" for the asset data base is required); and
- “harnessing up” and ready to maneuver the elevated work platform.

There are a wide variety of tasks that may be required for each maintenance task. These tasks range from routine to complex. In its time and motion study Ausgrid profiled three repair crews undertaking a range of different minor repair tasks.

A “simple” lamp replacement where the fault was identified immediately, there were no obstructions to access the light and the lamp was easily replaced. This simple repair task included:

- visual inspection of the site and safety discussion;
- preparation of Hazard and Condition Assessment
- with reference to SWMS (Safe Work Method Statement) and with strict adherence to the Electrical Safety Rules;
- Place traffic control for footpath and road traffic (where applicable)

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2 https://www.aer.gov.au/sites/default/files/NSW%20DNSPs%20final%20decision%2028%20April%202009.pdf (Page 459)

- Stabilise truck
- Ensure all appropriate PPE is worn
- Gather and prepare all materials required for job
- Prepare EWP ready for climb
- harness into EWP
- Ascend pole
- De-energise / Remove from SL circuit or PE Circuit (if on dedicated system)
- Remove existing lamp
- Install new lamp
- Connect to LV circuit / Re-energise
- Check to see if lamp works
- Descend Pole
- Secure EWP bucket back on truck.
- Waste handling
- Remove traffic control
- Destabilise Truck
- Remove and repack harness / PPE
- Ensure site secured and back to original environment
- Data Capture form (Pink slip)
- Complete Job Summary for the Depot
- Leave site for next job

Many of these tasks can be performed in parallel and the time and motion study details the critical path tasks.

Ausgrid has calculated the time to complete the job preparation and repair is 14.4 minutes.

It should be noted that this is a conservative estimate and more likely to represent a minimum repair time per repair task rather than an average as it represents time for minor tasks only. It is often the case that more substantial tasks are required. These major tasks were also analysed in the time and motion study and shown to take on average 29.47 minutes to complete, however these are typically considered minor capital works. Ausgrid has therefore included an additional 2 minutes to account for tasks that take longer than the minimum repair time.

Table 5 summarises the time to complete a spot repair task.

Table 5 - Time and motion study results

Task	Total Hours	Total Minutes
Overhead calculation		
Time required for average task (hours)	0.24	14.4
Standard travel time		
Travel time on average:	0.33	20
Additional time taken to complete a job		
Number of jobs that take longer than the standard time allocated	10%	
Average additional required time to complete job	0.33	2
Additional travel times for remote areas		
Number of jobs that take longer to travel to	5%	
Average additional time required time to travel to job	3.00	9
Total	0.76	**45.4**
Man hours on non-traffic route	1.51	90.80
Man hours on traffic route	2.27	136.2

Ausgrid is resubmitting its opex pricing model based on a time to repair of 45.4 minutes as per our initial proposal.

5.7 Labour rate escalators

Ausgrid agrees with the AER's labour escalators as per table 166-24 in the draft determination. We accept these changes in the opex pricing model.

6 Public lighting pre 2009 capital charge pricing input

Ausgrid notes that apart from the AER's proposed WACC that there are no other changes to the inputs or assumptions underlying the pricing model used to calculate pre 2009 capital charges.

6.1 Regulatory Asset Base implied remaining life

Ausgrid refutes the methodology by which the AER's has calculated the opening implied remaining life of Ausgrid's Public Lighting Regulatory Asset Base in Attachment 8.13 B – 'Ausgrid Substantive Proposal Public Lighting Roll Forward Model 2010 to 2014.xlsm'. Ausgrid has applied the methodology as per the AER's own PTRM models. Ausgrid re-submits its public lighting RAB roll forward model (Attachment 8.02 B) using the methodology applied as per our initial proposal.

6.2 Weighted average cost of capital

Ausgrid does not accept the AER's proposed WACC. Our position is discussed in chapter 7of the revised proposal. Ausgrid has resubmitted the Pre 2009 'Fixed Charge' model (Attachment 8.02 C) with a Pre-Tax Nominal WACC value of 9.82%.

7 Public lighting post 2009 capital charge pricing inputs

Ausgrid notes that apart from the AER's proposed WACC that there are no other changes to the inputs or assumptions underlying the pricing model used to calculate post 2009 capital charges.

7.1 Allocation of labour to luminaires and brackets

Ausgrid notes the AER's acceptance of our change of allocation of labour to brackets and luminaires. This will allow customer pricing to better reflect the actual cost incurred.

7.2 Weighted average cost of capital

Ausgrid does not accept the AER's proposed WACC. Our position is discussed in chapter 7of the revised proposal. Ausgrid has resubmitted the Post June 2009 Annuity Prices model (Attachment 8.02 A) with a Pre-Tax real WACC value of 7.14%.

8 Public lighting capital programs

Ausgrid notes the AER's acceptance of all of Ausgrid's proposed public lighting capital programs throughout the 14-19 regulatory control period. These programs are required to increase the efficiency of our network, increase the BLR cycle and reduce overall maintenance costs to both Ausgrid and our customers. These programs were proposed with the technology that was viable at the time of writing. With the rapid advancement of LED technology it is likely that these programs may need to be revised, in particular the replacement of high wattage mercury luminaires with Active Reactor High Pressure Sodium technology. When appropriate, Ausgrid will consult with our customers to determine the most cost effective solution to implement these programs.

9 Customer submissions

A number of submissions were included in the AER's draft determination. These submissions were part of a coordinated response from the Southern Sydney Regional Organisation of Councils (SSROC). The AER has included the submissions but made no comment on their validity or impact on the draft determination. Ausgrid can only comment on the submissions that contain factual errors rather than the subjective statements. Ausgrid has provided comments on the following submissions:

9.1 Concern about the efficiency of maintenance and bulk replacement programs

SSROC's submission regarding their concerns around the efficiency of maintenance and bulk lamp replacement programs was based on Ausgrid's maintenance assumptions and lamp failure rates. Ausgrid submits that a distinction needs to be made between total call out rates which was provided in our initial proposal and actual lamp failure rates. Ausgrid determines the most cost effective and technically viable bulk lamp replacement cycles on lamp failure rates and lumen/dirt depreciation factors. Ausgrid has in the past used manufacturers data to set these programs as determining lamp failure rates with a BLR cycle in place is not possible as accurate wear out characteristics cannot be obtained as not all lamps fail before they are replaced and lumen depreciation data is simply not possible to accurately determine by field measurements. Ausgrid has proposed a 3 year BLR cycle which is largely driven by our population of high wattage mercury luminaires which we have proposed to replace and have been replacing for some time. Determining efficient BLR cycles is a simple task of minimising the costs associated with the BLR cycle itself to spot lamp failures. This optimisation process is particularly sensitive to spot replacement labour costs compared to our contracted BLR rates.

Our total maintenance costs are driven by our total call out rates. These include failures of all components and other maintenance tasks associated with public lighting assets, these cannot be compared to lamp failure rates and are not the driver of the determination of efficient bulk maintenance cycles. Ausgrid agree that a four year BLR can provide the most efficient maintenance costs, but only when the appropriate technology is in place.

9.2 Questioned the completion of the bulk replacement programs

This was a misinterpretation by SSROC of the data presented in our initial proposal. Table 6 was what was presented in Ausgrid's proposal. This table represents the number of maintenance tasks performed over the study period, which was one BLR cycle, i.e. 2.5 years. It is suggesting that in the study period 73.43% of all maintenance and minor capital tasks performed were classified as M1 tasks which are notifications generated by BLR crews, this represented 244,051 tasks in total. As Ausgrid's population of streetlights is currently approximately 248,000 this would suggest that during the study period the BLR was close to 2 weeks from completion. As there is no definite start or end date to the BLR the amount of work can vary for a number of operational reasons from week to week, therefore Ausgrid is satisfied that the BLR was completed within the period.

Table 6 - Breakdown of notifications

Classification type	number recorded over period	% of total
M1	244051	73.43%
M2	3597	1.08%
M3	63442	19.09%
M4	262	0.08%
M5	0	0.00%
M6	0	0.00%
M7	21012	6.32%
Total	332364	

10 Service Standards

Ausgrid agrees with the regulators view regarding the NSW public lighting code and service levels more broadly. Ausgrid bases its current service levels around the NSW public lighting code and in the majority of cases meet the requirements. Ausgrid's current service levels are outlined in our Public Lighting Management Plan which is published on our website[3]. Ausgrid has not agreed to the service level agreement that our customers are requesting as we believe that this level of service would come at an additional cost which the customers are not willing to pay. We agree that there is a trade-off between level of service provided and the price paid by the customer and would be willing to negotiate service levels outside of the NSW Public Lighting Code if the costs of providing additional services can be recovered.

3 http://www.ausgrid.com.au/~/media/Files/Network/Regulations%20and%20Reports/publiclightingmanagementplan.pdf