Final decision

EnergyAustralia distribution determination 2009–10 to 2013–14

Alternative control (public lighting) services

13 April 2010

AUSTRALIAN ENERGY REGULATOR

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Shortened forms

ABS	Australian Bureau of Statistics
AER	Australian Energy Regulator
April 2009 AER decision	AER, *Final decision, New South Wales distribution determination 2009–10 to 2014–15*, 28 April 2009
BLR	bulk lamp replacement
capex	capital expenditure
CPI	consumer price index
DNSP	distribution network service provider
draft decision	AER, *Draft decision, EnergyAustralia draft distribution determination 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010
EMS	Energy and Management Services Pty Ltd
EWP	elevated work platform
final decision	AER, *Final decision, EnergyAustralia draft distribution determination 2009–10 to 2013–14, Alternative control (public lighting) services*, 13April 2010
HPS	high pressure sodium
IPART	Independent Pricing and Regulatory Tribunal of NSW
January 2010 EnergyAustralia proposal	EnergyAustralia, *Submission for the AER's re–determination of public lighting prices 2010 to 2014*, January 2010
NEL	National Electricity Law
NER	National Electricity Rules
NERA	NERA Economic Consulting
March 2010 EnergyAustralia submission	EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, March 2010
November 2009 Tribunal orders	Australian Competition Tribunal, *Application by EnergyAustralia and others (No 2) [2009] ACompT 9*, 25 November 2009
opex	operating expenditure
PE	photo-electric
PB	Parsons Brinckerhoff Australia Pty Limited
RAB	regulatory asset base
SKM	Sinclair Knight Merz Pty Ltd
SSROC	Southern Sydney Regional Organisation of Councils
transitional chapter 6 rules	transitional provisions set out in appendix 1 of the NER
Tribunal	Australian Competition Tribunal
TRL	traffic route luminaire
WACC	weighted average cost of capital

Overview

This final decision by the Australian Energy Regulator (AER) on EnergyAustralia's public lighting charges (and prices) has been made in accordance with the directions of the Australian Competition Tribunal. The decision replaces the AER's April 2009 decision on Energyaustralia's alternative control (public lighting) services for the 2009–14 regulatory control period.

Except where specified in this final decision, the AER maintains the conclusions it reached in the February 2010 draft decision. The final decision should be read in conjunction with the draft decision.

The final decision addresses three principal considerations. These are:

- the value of EnergyAustralia's regulatory asset base for public lighting assets constructed before 1 July 2009
- the efficient maintenance costs of public lighting assets
- the residual value of assets replaced early at the request of a customer.

The final decision confirms the value of pre 1 July 2009 assets as $140.9 million. In making this decision the AER considered the points raised by local government councils, the principal customers of EnergyAustralia's public lighting services, that this valuation is substantially greater than the value established in the AER's April 2009 decision.

The AER is mindful that this higher asset valuation will result in substantially higher charges for public lighting services as a consequence of the former state based regulatory arrangement. While the Australian Competition Tribunal did not find error with the pre 1 July 2009 asset value established in the AER's April 2009 decision it did direct the AER to consider previous correspondence between EnergyAustralia and the Independent Pricing And Regulatory Tribunal of NSW, which was not before the AER when it made its April 2009 decision. Consideration of this material and the need for regulatory consistency necessitated the revision to the asset value.

The AER also considered EnergyAustralia's submission for maintenance charges above those provided for in the AER's draft decision. The AER is not satisfied that this claim is prudent or efficient and establishes a maintenance charge slightly lower than the amount provided for in the draft decision. The reduction from the draft decision reflects advice from EnergyAustralia that an aspect of its earlier modelling of its maintenance costs was overstated.

The final decision also confirms the method for deriving the residual value of assets replaced early at the request of a customer. The AER recognises that the average assumed life of these assets may act as a disincentive to the early installation of energy efficient lighting but maintains that this methodology is necessary to achieve consistency with the previous regulatory arrangement.

The final decision also establishes an amount of $11.4 million was under-recovered from public lighting customers in 2009–10. This is the additional amount customers would have paid had this final decision operated from 1 July 2009. To minimise the

price shock associated with the recovery of this additional amount this charge has been smoothed over the remaining years of the regulatory control period.

Details of the indicative total charges for existing (pre 1 July 2009) public lighting assets over the 2009–14 regulatory control period are set out in section 4.3.4 of the final decision.

Appendices E, F and G of the final decision set out the capital and maintenance prices by asset types.

From its review of public lighting services in NSW, the AER found that pricing schedules did not reflect the actual cost of providing the service, that some customers were cross subsidising others, the modelling was generally based on broad assumptions and that no service providers had comprehensive records on their public lighting assets. To overcome these issues the AER considered it was necessary to implement new regulatory arrangements.

The regulatory arrangements that have been established in this decision (and in the AER's April 2009 decision) are aimed at developing more cost reflective prices for new assets, improving transparency and allowing greater choice over the service provided. The approach quarantines assets constructed before 1 July 2009 and has established an asset base and remaining lives for each customer's assets. These assets will continue to be regulated under a building block approach until such time as the regulatory asset base is fully depreciated. Therefore, customers should see their charges for pre 1 July 2009 assets decline over future regulatory control periods.

For assets constructed after 30 June 2009, the AER has established an approach that is not dependent on volume forecasts, determined prices based on efficient labour and materials costs and required comprehensive asset information be provided to customers on a six monthly basis. The prices that have been determined are price caps and thereby permit the incumbent network service provider or other service providers to provide the service at a lower cost. Through this approach the AER is seeking to encourage competition to develop in the provision of public lighting services and where effective competition emerges these services may no longer need to be regulated by the AER.

1 Introduction

On 19 June 2009 the Australian Competition Tribunal (Tribunal) granted leave to EnergyAustralia to apply for a review of the Australian Energy Regulator's (AER) final decision for EnergyAustralia's 2009–10 to 2013–14 distribution determination dated 28 April 2009.[1] One of the issues the subject of review was the AER's decision in respect of alternative control (public lighting) services.

On 25 November 2009 the Tribunal made orders varying, affirming and remitting back to the AER some aspects of the April 2009 AER decision. In particular, paragraph 5 of the Tribunal's orders provided that the AER's decision in relation to EnergyAustralia's public lighting services be remitted back to the AER to make the decision again in accordance with the directions set out in paragraph 5 of the orders.[2]

On 7 January 2010 EnergyAustralia submitted its public lighting services proposal together with supporting information to the AER.[3] The Southern Sydney Regional Organisation of Councils (SSROC) lodged a submission to the AER on 21 January 2010.[4] The AER's draft decision on EnergyAustralia's public lighting services proposal was published on 25 February 2010.[5]

On 11 March 2010 EnergyAustralia[6] and SSROC[7] lodged their submissions on the February 2010 AER draft decision.

This document sets out the AER's final decision for EnergyAustralia's public lighting services for the regulatory control period 1 July 2009 to 30 June 2014. This final decision is a redetermination of the AER's decision for EnergyAustralia's distribution determination dated 28 April 2009 and should be read in conjunction with the draft decision for EnergyAustralia's public lighting services dated 23 February 2010.

1.1 AER draft decision

In its February 2010 draft decision the AER established the public lighting charges for EnergyAustralia for the 2009–14 regulatory control period in accordance with the Tribunal's November 2009 orders. In particular, the AER:

- determined an opening regulatory asset base (RAB) of $140.9 million as at 1 July 2009 for EnergyAustralia's pre 1 July 2009 public lighting assets. The AER considered it appropriate to vary the opening RAB determined in the April 2009 AER decision by applying the same depreciation rate (or method) employed to

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1 AER, *Final decision, NSW distribution determination, 2009–10 to 2013–14*, 28 April 2009.
2 Australian Competition Tribunal, *Application by EnergyAustralia and others (No 2) [2009] ACompT 9*, 25 November 2009.
3 EnergyAustralia, *Submission for the AER's redetermination of public lighting prices 2010 to 2014*, 7 January 2010.
4 SSROC, *Submission on EnergyAustralia's submission for the AER's redetermination of public lighting prices 2010 to 2014*, 21 January 2010.
5 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010.
6 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010.
7 SSROC, *Submission on the AER's draft decision – redetermination of public lighting prices 2010 to 2014*, 11 March 2010.

determine the public lighting prices for the 2005–09 period, which were approved by the Independent Pricing and Regulatory Tribunal of NSW (IPART) in its August 2005 decision[8]

- reduced EnergyAustralia's proposed annual operating expenditure (opex) allowance from $16.2 million to $13.9 million for 2009–10. The AER did not accept EnergyAustralia's proposed assumptions relating to the labour cost rates for normal time and overtime hours, the overtime percentage rate, the bulk lamp replacement cycle applying to high pressure sodium lights on traffic routes, the overhead percentage rate and the time requirements for spot maintenance repairs. The AER also corrected some formulae errors in EnergyAustralia's opex cost build up model[9]

- considered that EnergyAustralia's proposed approach to calculating the residual capital value of an asset when a customer requests the early replacement of public lighting assets constructed before 1 July 2009 was reasonable[10]

- reviewed EnergyAustralia's opex and capital charge models to verify the required corrections outlined by the Tribunal and made further adjustments to EnergyAustralia's models. The AER considered that as a result of these steps it has corrected all the errors outlined in the November 2009 Tribunal orders[11]

- applied the relevant rate of return parameters, based on the Tribunal's decision in respect of standard control services, to vary the schedule of fixed capital charges with respect to public lighting, which achieve revenue neutrality in net present value terms over the 2009–14 regulatory control period[12]

- included clarification to the control mechanism as a consequence of accepting:[13]

    - the approach for calculating the residual value of a replaced asset in relation to pre 1 July 2009 assets

    - the separation of capital and maintenance charges for pre 1 July 2009 assets

    - an annual adjustment for outturn inflation to the charges for pre 1 July 2009 assets.

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8 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 15.

9 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 42.

10 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 48.

11 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 53.

12 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 53.

13 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, pp. 65–66.

- stated that it would work further with EnergyAustralia in order to decide the amount of under-recovery for 2009–10 charges to be recovered over the remaining 2009–14 regulatory control period[14]

- set out some adjustments to the compliance mechanism for EnergyAustralia as a result of making further clarification surrounding the control mechanism for EnergyAustralia's public lighting assets.[15]

1.2 Submissions

In its March 2010 submission on the draft decision EnergyAustralia noted that the AER's draft decision was made in accordance with the directions of the Tribunal.[16] In summary, EnergyAustralia:[17]

- supported the AER varying its April 2009 decision in relation to the opening value of the RAB for EnergyAustralia's pre 1 July 2009 public lighting assets

- revised its proposed opex allowance to $17.3 million for 2009–10 in order to address matters raised by the AER in its draft decision. EnergyAustralia stated that it had also made changes to assumptions in the opex model based on better and updated information

- agreed with the AER's decision on the approach to calculate the residual value of an asset being replaced early at the customer's request

- did not accept the AER's adjustments to the annuity capital charge model for labour hours associated with the construction of a public light and the proportion of labour assumed for constructing a public light

- agreed with the AER's changes to the control mechanism but sought clarification on:

    - whether the outturn CPI calculation was the same as that applied in standard control services

    - whether the annual RAB adjustments would only take place for cases where EnergyAustralia is recovering the residual value of an asset due to early replacement at the customer's request

    - when the AER expected customers to start paying the new charges for an asset being replaced early at the customer's request. EnergyAustralia proposed that the charges should commence from the month that the asset is installed.

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14 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 66.

15 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 66.

16 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 2.

17 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, pp. 2–3, 8.

In its March 2010 submission on the draft decision SSROC noted its concerns over the large price increases. SSROC submitted that an increase in the order of around 54 per cent as outlined in the draft decision would have catastrophic impact on councils' ability to deliver services to communities, particularly when the NSW government has limited councils to a rate cap increase of 2.6 per cent. SSROC expected that corrections for deficiencies to the draft decision as discussed in its submission would result in a modest decline in current prices (as determined by the AER in its April 2009 decision).[18]

SSROC also noted its broader concerns regarding the approach to regulation. While acknowledging that the AER is constrained by the National Electricity Law and National Electricity Rules, SSROC stated that its concerns, as set out in its submission need to be formally registered.[19]

1.3 Structure of final decision

This final decision sets out the AER's considerations of substantive issues raised in submissions by EnergyAustralia and SSROC. Except as specified in this final decision, the AER maintains the conclusions it reached in the February 2010 draft decision.[20] Therefore, this final decision should be read in conjunction with the draft decision. This document is structured as follows:

- Chapter 2 sets out the AER's consideration of submissions on the opening RAB value (as at 1 July 2009) established in the draft decision for assets constructed before 1 July 2009.

- Chapter 3 sets out the AER's analysis and consideration of submissions on the draft decision opex allowance for developing the maintenance prices of all assets subject to maintenance programs over the 2009–14 regulatory control period.

- Chapter 4 sets out the AER's consideration of submissions on other issues arising from the draft decision.

- Appendices A to G set out the formula for calculating the residual capital value by asset component in relation to pre 1 July 2009 assets, and updates the schedule of charges and prices for EnergyAustralia's pre 1 July 2009 and post 30 June 2009 public lighting assets, based on the changes to the inputs and assumptions of EnergyAustralia's public lighting models made in this final decision.

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18 SSROC, *Submission on the AER's draft decision – redetermination of public lighting prices 2010 to 2014*, 11 March 2010, p. 1.

19 SSROC, *Submission on the AER's draft decision – redetermination of public lighting prices 2010 to 2014*, 11 March 2010, p. 1.

20 While the AER may, in some circumstances, continue to hold the same view as set out in its draft decision, the AER has, where appropriate, considered the submissions made by EnergyAustralia and SSROC in response to the draft decision.

2 Regulatory asset base

This chapter sets out the AER's consideration of submissions on the opening RAB value (as at 1 July 2009) established in the draft decision for assets constructed before 1 July 2009.

2.1 AER draft decision

In its February 2010 draft decision the AER decided that it was appropriate to vary the opening RAB for pre 1 July 2009 assets determined in the April 2009 AER decision. In view of the additional material submitted by EnergyAustralia, including correspondence between IPART and EnergyAustralia, the AER considered that it was necessary to apply the same depreciation rate (or method) employed to determine the prices for the 2005–09 period, which were approved in the August 2005 IPART decision. As the August 2005 IPART decision approved a remaining life of 16.2 years for existing assets at 1 July 2004, the AER considered that this should be the remaining life adopted for modelling the return of capital in the asset roll forward.[21]

The AER determined an opening RAB of $140.9 million as at 1 July 2009 for EnergyAustralia's public lighting assets constructed before 1 July 2009.

The AER noted it was aware that many of the assets in EnergyAustralia's RAB were constructed some time ago and therefore applying a longer remaining life for these assets may not align with the actual circumstances of the assets in place. The effect of this is that customers will still be paying for some assets after they are no longer in service.

In general the depreciation allowance in the regulatory framework is typically set such that the asset life is closely aligned to the anticipated life of the physical asset. The AER noted that there may be economic reasons for departing from adopting the physical asset life for regulatory depreciation purposes and implementing deferred depreciation in order to provide a particular pricing profile over time. All things being equal and having regard for the principle of financial capital maintenance, such an approach would result in a relatively higher RAB value in future periods than would have otherwise been the case. In this instance the longer remaining asset life was adopted by IPART to lessen the price impact on customers in the 2005–09 period—that is, the recovery of depreciation has been deferred in the prices established in 2005. The consequence of this approach taken was that prices would need to be higher in future periods.

2.2 Submissions

In its March 2010 submission on the draft decision EnergyAustralia supported the AER's analysis and conclusion to revise the opening RAB. EnergyAustralia noted that the AER has appropriately incorporated the Tribunal's November 2009 orders to remove the lagged indexation applied to the opening RAB.[22]

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21 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 15.

22 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 4.

EnergyAustralia noted that its January 2010 proposal sets out a preferred approach for establishing the opening RAB based on the recommended method of NERA Economic Consulting (NERA). In the time available EnergyAustralia stated that it has not been possible to undertake a complete reconciliation of the AER's RAB roll forward in the draft decision against that used by NERA. EnergyAustralia suggested that if a half weighted average cost of capital (WACC) on the capital expenditure (capex) was included as part of the roll forward, the opening RAB value based on the draft decision would be closer to the amount determined by NERA.[23]

Subject to the AER confirming the accuracy of its inputs and assessing the merits of the inclusion of a half WACC assumption in the roll forward, EnergyAustralia accepted the AER determining an opening RAB of $140.9 million as at 1 July 2009 in the draft decision.[24]

EnergyAustralia also commented on the issues raised in SSROC's January 2010 submission:[25]

- It is clear that IPART's August 2005 decision to approve EnergyAustralia's prices included deferred depreciation. The AER has therefore correctly determined that the recovery of depreciation had been deferred in the prices established by IPART.

- SSROC's claim that EnergyAustralia has systematically misinvested or operated in an inefficient manner in previous regulatory control periods is without any basis.

- EnergyAustralia liaised and consulted with councils in respect of previous investment decisions.

- EnergyAustralia is not aware of any material that would provide support to SSROC's claims regarding the original funding of assets.

- The AER's decision, guided by the transitional chapter 6 rules, relating to roll forward of the RAB for standard control services is considered by EnergyAustralia to be reasonable in the circumstances.

In its March 2010 submission on the draft decision SSROC stated that the revision to EnergyAustralia's opening RAB for pre 1 July 2009 assets should not have been made. SSROC reiterated the concerns it had raised in its January 2010 submission:

- the 2005 IPART decision makes no reference to deferred depreciation being applied in approving the prices set for the 2005–09 period[26]

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23 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, pp. 5–6.

24 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 4.

25 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 6.

26 SSROC, *Submission on the AER's draft decision – redetermination of public lighting prices 2010 to 2014*, 11 March 2010, p. 2.

- there has been a pattern of misinvestment by EnergyAustralia, including inefficient labour costs being incurred and that these matters should be given consideration in the context of EnergyAustralia's RAB revision[27]

- the majority of lights on EnergyAustralia's network were first lit by Council electricity departments or by County councils in the decades prior to the creation of corporatised electricity companies. In most cases the original capital was provided by councils or the County councils, and at corporatisation no compensation was paid for those assets (including the public lighting assets) transferred to the new state-owned entities.[28]

2.3 Issues and AER considerations

The AER notes that the issues raised in SSROC's submissions have been previously considered in the April 2009 AER decision and the February 2010 draft decision.[29] The AER further notes that EnergyAustralia's March 2010 submission has commented on the issues raised by SSROC.[30]

The AER has considered all submissions received on the draft decision. For the reasons set out in its draft decision[31] the AER confirms its draft decision—that is, it determines an opening RAB of $140.9 million as at 1 July 2009 for EnergyAustralia's public lighting assets constructed before 1 July 2009.

As outlined in the draft decision the AER considered it appropriate to redetermine the opening RAB by changing the April 2009 AER decision to the extent necessary—that is, amending the remaining asset life assumption in the asset roll forward model. Therefore, rather than adopt the NERA roll forward method, the AER used the roll forward method approved in the April 2009 AER decision and modified the remaining asset life assumption (16.2 years) to be consistent with that underpinning the prices for the 2005–09 period, as approved by IPART.[32]

EnergyAustralia submitted that, due to the limited time available to respond to the AER's draft decision, it has not undertaken a detailed reconciliation of the AER's roll forward of the opening RAB in the draft decision against that used by NERA.[33] The AER notes the timetable for this redetermination process is set out in the Tribunal's

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27 SSROC, *Submission on the AER's draft decision – redetermination of public lighting prices 2010 to 2014*, 11 March 2010, pp. 2–3.

28 SSROC, *Submission on the AER's draft decision – redetermination of public lighting prices 2010 to 2014*, 11 March 2010, pp. 3, 6–9.

29 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 15.
AER, *Final decision, NSW distribution determination, 2009–10 to 2013–14*, 28 April 2009, p. 369.

30 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, pp. 6–7.

31 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, pp. 10–15.

32 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 14.

33 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 4.

November 2009 orders.[34] Further, the AER noted in the draft decision that there are some inconsistencies with the capital expenditure inputs in the NERA roll forward method:[35]

> The AER notes that the capital expenditures for some years in the 2004–09 regulatory control period rolled into the RAB under the NERA method do not reconcile with those in the EnergyAustralia regulatory information notice (RIN).

The AER is therefore not convinced that it is appropriate to adopt the NERA roll forward method and the resulting value of the opening RAB. The AER is satisfied with the inputs to the roll forward of the opening RAB as determined in the draft decision. It notes that in the draft decision it reviewed the asset roll forward in the capital charge model submitted by EnergyAustralia and made a further adjustment to correct a formula error in order to remove the lagged inflation indexation.[36]

In relation to EnergyAustralia's suggestion that a half WACC be applied to the capex as part of the roll forward, the AER notes that this assumes that capex is, on average, incurred in the middle of the financial year and that this implies that a half year's rate of return should be provided to the business. While this assumption may more reasonably align with the likely timing assumption with respect to the incurrence of capex than the end of financial year timing assumption in the current roll forward method employed in the draft decision, the AER considers that if the mid-year timing assumption for capex is to be adopted further adjustments to the timing assumptions of other cash flows in EnergyAustralia's capital charge model would be required.

For example, in the capital charge model, revenues charged by the business are also assumed to occur at the end of financial year. The AER understands that EnergyAustralia bills its customer charges on a monthly basis and that these are based on a simple division of the modelled annual revenue allowance. Under this approach, a benefit accrues (resulting in an overstatement of the charges recovered) to EnergyAustralia from the current modelling method in respect of the timing assumption of the revenue allowance. Therefore, to the extent where an adjustment is to be made to the timing assumption for capex, a similar adjustment will also need to be made to remove the overstatement arising from the current timing assumption in respect of the revenue allowance. This would likely involve a detailed review of the appropriate timing assumption of the cash flows faced by EnergyAustralia.

On balance, the AER considers it appropriate to maintain the current simplifying timing assumption of the cash flows in the capital charge model (including the asset roll forward)—that is, the end of financial year. Making adjustments to reflect the likely timing of cash flows applicable to the business would introduce significant complexities that would more than likely outweigh the benefits of achieving modelling accuracy.

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34 Australian Competition Tribunal, *Application by EnergyAustralia and others (No 2) [2009] ACompT 9*, 25 November 2009, paragraphs 5(1)(a)–(f).

35 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, footnote 55, p. 14.

36 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 15.

2.4 Conclusion

The AER determines an opening RAB of $140.9 million as at 1 July 2009 for EnergyAustralia's public lighting assets constructed before 1 July 2009.

3 Operating expenditure

This chapter sets out the AER's analysis and consideration of submissions on the opex allowance outlined in the draft decision for EnergyAustralia over the 2009–14 regulatory control period.

3.1 AER draft decision

Based on its review of EnergyAustralia's January 2010 proposal and opex model, SSROC's submission and a consultancy report from Energy and Management Services (EMS), the AER made the following adjustments to EnergyAustralia's opex model in the draft decision:[37]

- the proposed labour rate was reduced from $101 to $57 for normal time hours and $107 to $79 for overtime hours
- the proposed overtime percentage was reduced from 20.0 per cent to 17.4 per cent
- the bulk lamp replacement (BLR) cycle applying to high pressure sodium (HPS) lights on traffic routes was changed to 4 years (with a photo electric (PE) cell replacement cycle of 4 years for these specific lamps) with all other lamp types receiving a 3 year BLR cycle (and a PE cell replacement of 6 years)
- the proposed overhead rate assumption of 26.75 per cent was reduced by 1.75 percentage points to to 25.0 per cent
- the proposed timing of 40 minutes per spot repair was reduced to 30.6 minutes per spot repair
- formulae errors were corrected relating to lamp prices for luminaires with multiple lamps
- formulae errors were corrected relating to failure rates on luminaires with multiple lamps.

The above adjustments resulted in an opex allowance for EnergyAustralia's public lighting assets of $13.9 million for 2009–10. This represented a reduction of around $2.4 million (or 14.7 per cent) from EnergyAustralia's proposed 2009–10 opex allowance of $16.3 million.[38]

3.2 Submissions

EnergyAustralia did not accept the AER's draft decision to reject its proposed opex of $16.3 million for 2009–10 or the AER's substituted opex allowance of $13.9 million for 2009–10. The main points raised in EnergyAustralia's submission were that:

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37 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 42.

38 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p.42.

- Based on an analysis by EnergyAustralia's consultant, Sinclair Knight Merz (SKM), a normal time labour rate of $80.50 and an overtime labour rate of $88.68 was appropriate.

- The costs for quarterly night patrols had been properly accounted for in the bulk maintenance component of the opex model and therefore an additional amount of 1.75 percentage points should not be added to the overhead rate of 25 per cent.

- The use of an average time between spot maintenance tasks of 5 minutes in developing spot maintenance timing requirements was unrealistic in an inner city cenral business district and urban environment.

- It had revised the average time to undertake a miscellaneous maintenance task from 40 minutes to 10 minutes in order to address a valid issue raised by EMS.

- Based on further analysis, the lamp failure rates contained in its January 2010 proposal were likely to be systematically low and therefore should not be applied. Instead lamp failure rates from the AER's April 2009 decision should be applied.

- The miscellaneous (other components) failure rate of 1 per cent be increased to 9.6 per cent on the basis that the 1 per cent figure was based on incorrect assumptions.

- A mixed 3 year and 4 year BLR cycle will not work for EnergyAustralia given mixture of assets on its traffic routes. EnergyAustralia considered that a mixed BLR cycle would result in higher costs, a loss of scale economies, higher contractor costs and a fall below agreed levels of reliability and safety.

- EMS incorrectly interpreted Parsons Brinckerhoff's (PB)) benchmarking analysis and therefore did not give sufficient weight to PB's analysis and conclusions.

Based on the positions contained in its March 2010 submission, EnergyAustralia proposed a revised opex allowance of $17.3 million for 2009–10.

3.3 Consultant review

EMS has reassessed its original recommendations in light of EnergyAustralia's March 2010 submission and provided the AER with a report on its findings.[39] EMS's key recommendations were that:[40]

- the opex modelling be based on 2009–10 labour rates of $55 per hour for normal time and $71 per hour for overtime

- its original recommendation on the cost of quarterly patrols be amended on the basis of the additional information provided by EnergyAustralia

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39 EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010.

40 EMS *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, pp. 2–3.

- a four year BLR cycle be adopted for all HPS lamps in traffic route luminaire (TRL) installations and that a three year bulk maintenance cycle be adopted for all other lamp types.

- the opex model should assume a PE cell replacement cycle of four years for all HPS lamps in TRL installations and six years for all other lamps

- the time requirement assumptions in the opex model be adjusted to 31.7 minutes for lamp and PE cell spot maintenance and that EnergyAustralia's proposal for 10 minutes for miscellaneous spot maintenance tasks be accepted

- the failure rates adopted in the opex model be EnergyAustralia's 4 year rates for HPS lamps in TRL routes and EnergyAustralia's 3 year rates for all other lamps, where available, and the AER rates otherwise (subject to adjustments to correctly deal with multi-lamp configurations)

- the 'other components' failure rate of 1 per cent be retained without change.

EMS also undertook a more detailed review of PB's benchmarking study. It found no reason to alter its opinion in relation to the interpretation of PB's benchmarking data, and accordingly, no reason to alter its opinion of PB's overall conclusion (that EnergyAustralia is on average operating efficiently in its provision of public lighting services) to be somewhat generous.[41]

3.4 Issues and AER considerations

3.4.1 Bulk maintenance cycles

AER draft decision

In its February 2010 draft decision the AER noted EnergyAustralia's concerns about a twin BLR cycle (primarily the extra costs due to the intermingling of lamp types) but considered that EMS's recommended approach largely addressed these issues by limiting the 4 year cycle to HPS lamps and only TRL installations. The AER accepted EMS's advice that this approach was reasonable as TRL installations are generally stand-alone and are extensive enough to provide for efficient work plans. The AER therefore considered that a 4 year BLR cycle should be adopted for all HPS lamps in TRL installations and that a 3 year BLR cycle be adopted for all other lamp types.[42]

EnergyAustralia submission

EnergyAustralia considered that the AER's draft decision in relation to bulk maintenance cycle would incur higher costs for the following reasons:[43]

- **Higher costs of mixed BLR cycles—**a mixed cycle increased the costs of BLR as it requires two cycles of different periods within the same location while

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41 EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, p. 3.

42 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 36.

43 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, pp. 17–19.

providing no additional maintenance to cover such costs. EnergyAustralia did not accept EMS's conclusion that it had the ability to set efficient work plans for traffic routes without the need to mix 3 and 4 year cycles.

- **Loss of economies of scale—**two bulk replacement programs will result in the likelihood of a service provider incurring additional costs due to a loss of economies of scale.

- **Potential breach of Australian standards—**it owned a mixture of assets on traffic routes that would require it to replicate the same route twice if a mixed BLR cycle was introduced. It considered that if it did not replicate the same route twice then it would fall below agreed levels of reliability and safety based on Australian Standards.

- **Bulk maintenance contract prices—**increasing the BLR cycle is likely to increase the per unit price. EnergyAustralia reasoned that as fewer lamps would be replaced each year, a contractor's fixed costs would be allocated to a fewer number of lamps and would not be fully recovered. Although it did not propose an amount, EnergyAustralia considered that the AER should add a premium per unit cost of moving to a longer cycle.

EnergyAustralia did not accept EMS's claim that a 4 year BLR cycle provided it with an appropriate incentive arrangement. It considered that EMS was effectively recommending a penalty on EnergyAustralia for the mix of assets it inherited as a result of mergers and customer requests for different luminaire types. EnergyAustralia considered that a 4 year replacement program would mean that the AER's approach would calculate a lower total opex, assuming a standardised mix of assets exists. It considered that this distorted the efficient cost of maintaining the existing suite of public lighting infrastructure and provided no incentive for customers to change the asset mix because they are effectively getting the price of a standardised mix already.[44]

EnergyAustralia stated that EMS was effectively recommending a 4 year trial on all of EnergyAustralia's HPS lights to test whether a 4 year cycle is efficient. EnergyAustralia stated that it had successfully trialled other lighting types and could easily undertake a trial on lamps of a less significant portion of its population to collect data. EnergyAustralia did not support the EMS 'apply it and see' approach to recommending a mixed BLR cycle on the basis that this would determine whether it would assist future determinations. EnergyAustralia submitted that too much was at stake to give weight to this consideration.[45]

Consultant review

EMS responded to each of the issues raised by EnergyAustralia in relation to the appropriate bulk maintenance cycle to be applied:

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44 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, pp. 19–20.

45 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 20.

- **Higher costs of mixed BLR cycles—**EMS considered that EnergyAustralia seeks to imply that the approximate 50/50 proportion of the populations of old MV and new HPS luminaires creates a situation in which its TRL lighting is highly intermixed with an almost random incidence of MV and HPS luminaires to be found on all traffic routes. Based on its observations of traffic routes in the Sydney and Hunter regions, the situation is that many routes are illuminated by HPS luminaires only. EMS continues to hold the view that the extent of such routes is sufficient to provide for the implementation of efficient work plans based on a 4 year BLR cycle.

  The opex modelling of EnergyAustralia's total public lighting opex may be configured to provide a cost estimate based on EMS's recommendations by simply assigning 3 or 4 year BLR cycles according to lamp type and location. In actual practice, the development of efficient work plans for traffic routes with mixed lighting will require EnergyAustralia to decide whether a given route is predominantly HPS (thus adopting a 4 year BLR cycle) or predominantly MV (3 year BLR cycle). EMS stated that this introduced the risk that the modelling did not precisely match actual practice and what the dimensions of this risk were.

  EMS stated that the lengthening of the BLR cycles reduces the bulk maintenance cost and increases the spot maintenance cost. The net result may be an increase or a decrease in total public lighting opex. It considered that its analysis shows that altering the opex model to accommodate the proposed 3 year and 4 year cycles (and other inputs in accordance with EMS's recommendations) reduces, rather than increases, the total estimated public lighting opex by less than half a per cent. Accepting the limitations of the opex model, it may be that the effects could be two or three times this amount and could be either a gain or a loss. Even so, EMS found that the amount at risk is less than 1 per cent. Overall, EMS considered that a risk of ±1 per cent did not justify EnergyAustralia's concern that 'too much is at stake to give weight to this consideration'.[46]

- **Loss of economies of scale—**EMS considered that EnergyAustralia had not provided any reasoning to support this concern and that the scale of a service provider's public lighting maintenance function was the combination of bulk replacement and spot repairs. EMS considered that it should be the aim of a service provider to reduce the scale of its public lighting maintenance function as much as possible through the optimum mix of bulk and spot maintenance. A loss in the economies of scale would follow only if the service provider then allowed under-utilised staff to continue in its public lighting department without appropriate redeployment.[47]

- **Potential breach of Australian standards—**EMS stated that EnergyAustralia implied that adopting a 4 year cycle on a mixed route would result in the levels of reliability and safety of the MV lamps to fall below Australian Standards. EMS stated that it was unaware of any Australian Standards requirements that would be breached simply by adopting a 4 year BLR cycle instead of a 3 year BLR cycle.

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[46] EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, pp. 4–5.

[47] EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, pp. 5.

EMS considered that, even if such requirements existed, the reliability and safety standards would be breached only if EnergyAustralia failed to undertake spot maintenance.[48]

- **Increased bulk maintenance contract prices—**EMS considered that EnergyAustralia's claim would only hold true if EnergyAustralia was the contractor's sole client. EMS was aware that the contractors that EnergyAustralia currently engaged also provide services to other service providers, councils and other utilities. EMS considered it highly likely that any gaps in work from EnergyAustralia would be filled by work from other clients.[49]

In its February 2010 report, EMS considered that the implementation of 4 year BLR cycles for HPS lamps in TRL areas would provide EnergyAustralia with the incentive for efficiency improvements.[50] It stated that this opinion was based on EMS's analysis (using EnergyAustralia's opex model) which indicated that 4 year cycles would result in net savings in total public lighting opex. EMS expected that EnergyAustralia would be pleased to test its own modelling and, if the results proved to be in favour of 4 year cycles, to implement as many 4 year BLR cycles as possible.

EMS stated that rather than recognising the opportunity to investigate ways to reduce its own costs, EnergyAustralia has reacted to EMS's recommendation by claiming that it penalises EnergyAustralia for the mix of assets inherited as a result of mergers and customer requests for different luminaire types. EMS stated that, apart from the fact that mergers and special lamp types have very little bearing on TRL installations, EnergyAustralia's argument is based on an assumption that costs will increase if 4 year BLR cycles for HPS lamps in TRL installations are implemented.

EMS stated that the practical cost outcomes of 4 year BLR cycles for HPS lamps in TRL areas are not known but that EnergyAustralia's opex model indicated that they would result in a net decrease of costs. EMS recognised that, in practice, the net result may be a gain or a loss, but as noted previously, the amount at risk was not great. EMS considered that EnergyAustralia had the opportunity to test its extensive theoretical analysis with practical in-field trials leading to the discovery of ways to reduce its own costs.[51]

Overall, EMS retained its view that the AER should base the opex allowance on 4 year BLR cycles for HPS lamps in TRL installations and that a 3 year BLR cycle be adopted for all other lamp types.

AER considerations

EnergyAustralia raised a number of arguments suggesting that the adoption of the AER's draft decision in relation to the bulk maintenance cycle will incur increased

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48 EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, p. 5.

49 EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, p. 5–6.

50 EMS, *EnergyAustralia public lighting submission to AER for re–determination 2010–14, Review of operating expenditure*, 23 February 2010, p. 8.

51 EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, pp. 6.

costs for a number of reasons, including mixed cycles, loss of economies of scale, higher bulk maintenance contract prices and a potential breach of Australian standards. EMS responded to each of the issues raised by EnergyAustralia in relation to the appropriate bulk maintenance cycle to be applied. The AER has reviewed EMS's responses and considers that they substantively address the issues raised by EnergyAustralia.

The key issue raised by EnergyAustralia is that the HPS and MV lamps are so intermingled that it would not be efficient to adopt a 4 year BLR for HPS lights. EMS noted that when these assumptions are applied to EnergyAustralia's opex model the outcome was a reduction in costs rather than an increase (by less than one per cent of total estimated opex). Accepting the limitations of the model, EMS noted that the actual result could be in a range of ± one per cent. EMS did not consider this to be a risk that should prevent this recommendation from being implemented. The AER has considered this issue and agrees with EMS's assessment.

While EnergyAustralia has provided the number of MV and HPS lights on traffic routes, it has not presented evidence indicating that the lights are so intermingled that efficient work plans for HPS lights on traffic routes based on a 4 year BLR cycle are not able to be developed or that the risk was too great. On this basis, the AER accepts EMS's recommendation that the AER should base the opex allowance on 4 year BLR cycles for HPS lamps in TRL installations and a 3 year BLR cycle be adopted for all other lamp types.

3.4.2 Quarterly lamp (night patrol) inspections

AER draft decision

In its February 2010 draft decision the AER raised a number of concerns regarding EnergyAustralia's proposed addition of 1.75 percentage points to its overhead rate of 25 per cent to account for the cost of quarterly night patrols of lamps. The AER stated that it was unclear whether the night patrol costs were already included in historical overheads and, for reasons of transparency, the efficient costs associated with the night patrols needed to be separately costed and incorporated into the opex model. Given these concerns the AER did not agree to the addition of 1.75 percentage points to the general overhead rate of 25 per cent.[52]

EnergyAustralia submission

EnergyAustralia noted that the addition of 1.75 percentage points to indirect overhead was a last minute addition to its opex model as it was believed at that time that there was no cost recognised for quarterly lamp inspections. From its subsequent review of its assumptions EnergyAustralia found that its opex model already includes the quarterly inspection cost derived from the BLR contractor rates and applied these rates across all lamp types.[53] EnergyAustralia stated that the additional amount allocated to overhead was in error and should therefore be removed.[54]

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52 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 23.

53 EnergyAustralia noted that, in some regions, external contractors undertake quarterly inspections as part of their contractual arrangements for undertaking a BLR cycle. In other regions this work is

Consultant review

On the basis of the advice from EnergyAustralia, EMS considered that its previous recommendation was now redundant.[55]

AER considerations

On the basis of EnergyAustralia's advice that the costs were already included in the model and given that the AER previously found BLR contractor rates were efficient, the AER confirms its draft decision that an additional 1.75 percentage points should not be added to the general overhead rate for quarterly lamp (night patrol) inspections. Therefore this conclusion therefore has no impact on modelled opex.

3.4.3 Labour unit rates

AER draft decision

The AER considered that the on-cost rate and privilege rate applied by EnergyAustralia were high, that it was unclear how the two rates had been calculated and what specific allowances or costs had been included in the derivation of each rate. The AER also noted that the labour unit rates proposed by EnergyAustralia were higher than those proposed by the Victorian distribution network service providers (DNSPs). Based on its review, the AER accepted the advice of EMS that the labour unit rates proposed by EnergyAustralia should be adjusted from $101 per hour to $57 per hour for normal time rates and from $107 per hour to $79 per hour for overtime rates.[56]

EnergyAustralia submission

EnergyAustralia accepted that its assumed labour unit rates would not perfectly reconcile with its actual labour costs. Nevertheless, it expected that they would be relatively consistent provided the assumptions were reasonable and the detailed analysis captured all of the labour costs associated with providing the public lighting service.[57]

EnergyAustralia noted that it had engaged SKM to review EMS's calculation of the labour unit rate (including the overtime rate). It stated that SKM had used EMS's approach to calculate a labour unit rate and that SKM's calculation had allowed it to identify labour costs that had been omitted from EMS's calculation. In particular:

- the costs of depot management and support services which are allocated to labour costs in accordance with its cost allocation methodology

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undertaken by EnergyAustralia staff. EnergyAustralia's model assumes that all costs for this work are undertaken at the contractor competitive tender rates.

54 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, pp. 11–12, 18.

55 EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, p. 10.

56 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, pp. 20–21.

57 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 11.

- the costs associated with the defined benefits superannuation scheme, to which many of EnergyAustralia's public lighting maintenance team belong

- the normal labour costs of constant afternoon workers whose standard hours attract a 30 per cent loading.[58]

Based on SKM's analysis, EnergyAustralia proposed labour unit rates of $80.50 per hour for normal time and $88.68 per hour for overtime. EnergyAustralia considered these unit rates to be comparable with other NSW DNSPs who operate in the same labour market.[59]

Consultant review

EMS noted that the SKM review material provided data that allowed for a more precise determination of public lighting wage rates on the basis that the North Street Light team was considered to be representative of all street light teams. Using a similar approach to SKM, EMS recalculated the normal time wage rates and overtime wage rates. From its review EMS stated that:[60]

- it did not agree with SKM's hourly base rate ($35.27) because, in addition to the EnergyAustralia Allowance, it included other allowances. EMS calculated its base rate ($32.55) using the actual composition of the North Street Lighting team to develop a weighted average normal time base rate

- it did not agree with SKM that a number of other allowances were payable to public lighting workers (for example, the Electrician's licence allowance and the Trade rate tool allowance). It also did not agree with the application of a 30 per cent loading for the afternoon shift as EnergyAustralia's Consent Award provided for a different allowance

- it accepted an average superannuation cost of 19.5 per cent (which included 4.5 per cent for contributions above current Award provisions)

- it did not consider that an additional overhead rate of 2.5 per cent for consumables was credible as it implied that every week each public lighting worker spends nearly $30 on paper, pens and miscellaneous items. In EMS's view such costs were already included in the corporate overhead

- it accepted a figure of 51 minutes (rather than 45 minutes as applied in its February 2010 report) per day for the purposes of safety meetings, plant inspections, qualify management and stores replenishment—that is, non-productive time

- it questioned the validity of the principle and the evaluation of the depot support and management overhead rate. EMS considered that this overhead rate should

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58 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 11.

59 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, pp. 10–11, 22.

60 EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, pp. B1–B6.

not be allowed as it equated to more than 30 staff supporting 15 public lighting workers and was clearly an improbable assumption

- EnergyAustralia had correctly subtracted the corporate overhead from SKM's derived rates as the AER had already included it in its opex modelling.

EMS indicated that with the benefit of the SKM analysis, which SKM attested to being wholly representative of all public lighting crews, it has recalculated the labour unit rates to be $54.61 per hour for normal time and $71.20 per hour for overtime (rounding to $55 per hour and $71 per hour). EMS noted that the rates are lower than those it determined in its February 2010 report as that review was based on broader assumptions.[61]

EMS recommended that EnergyAustralia's public lighting opex be based on 2009–10 labour unit rates of $55 per hour for normal time and $71 per hour for overtime.[62]

AER considerations

The AER notes that EMS has undertaken a thorough review of the material put forward by EnergyAustralia on labour unit rates, including the SKM analysis. Based on this review and the additional information that formed part of the SKM analysis, EMS has refined its calculation of the labour unit rates. The AER notes that based on its review, rather than recommending a higher labour unit rate as proposed by EnergyAustralia, EMS has recommended a reduction in the rates contained in its February 2010 report to the AER.

The AER has reviewed EMS's report and, while agreeing with EMS's individual conclusions on the different components of the labour rate, it considers that given the number of allowances and rates involved a cautious approach needs to be adopted. The AER considers it is appropriate to take a conservative approach and maintain the AER's draft decision labour unit rates. The AER also notes that the labour rates contained in its draft decision are more consistent with those approved by the AER for the other NSW DNSPs and those proposed by the Victorian DNSPs.

Overall, the AER considers that EnergyAustralia has not provided sufficient evidence to move away from the labour unit rates adopted in its draft decision. Therefore the AER confirms its draft decision to apply labour unit rates of $57 per hour for normal time and $79 per hour for overtime within the opex model.

3.4.4 Spot maintenance time requirements

AER draft decision

In its February 2010 draft decision the AER accepted the time requirements recommended by EMS from its detailed analysis of EnergyAustralia's spot maintenance activities—that is, 30.6 minutes per spot maintenance task rather than EnergyAustralia's proposal of 40 minutes. The AER noted the key change to be the reduction of travel between maintenance tasks to 5 minutes from 20 minutes. It also

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61 EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, p. 9.

62 EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, p. 9.

noted that the timings recommended by EMS took into account EnergyAustralia's network and operating environment and that they would encourage EnergyAustralia to improve its bundling of spot maintenance tasks. The approved allowance of 30.6 minutes per spot maintenance task equated to around 14 tasks being undertaken per day.[63]

EnergyAustralia submission

EnergyAustralia submitted that an average completion rate of 14 tasks per crew per day was optimistic across its network. It considered that the most significant difference between its assumptions and those of EMS related to EMS's assumption of a 5 minute travel time between tasks. EnergyAustralia believed that this assumption was unrealistic in an inner city central business district (CBD) and urban environment as it ignored:[64]

- the reality of undertaking repairs in an urban environment where, in addition to travel time, it can take as much as 5 minutes (or longer) to find a place to park the elevated work platform (EWP) safely

- that many repair tasks are initiated by the public and are repaired during the day and requires an educated guess on the part of crews to locate which light is in need of repair. EnergyAustralia stated that if the complaint is initiated from an address, a crew must establish which of the lights close to the address is in need of repair and that this in itself could take 5 minutes

- the reality of driving a large truck through urban and CBD environments. EnergyAustralia stated that it is likely that the maximum driving distance for an EWP for 5 minutes is between 2 to 3 kilometres.

EnergyAustralia noted EMS's comments that customers should not be required to pay anything more than the service that was settled on when the *Public lighting management plan* was finalised. It considered that EMS was effectively saying that customers should not expect to receive any better service than the one they pay for. EnergyAustralia stated that given the EMS recommendations reduce assumed travel times on the basis that longer average repair times will allow better management of repair tasks, then the EMS recommended cost input assumptions assume a lower standard of service than customers are currently receiving.[65]

EnergyAustralia also considered that there was no basis for EMS's claim that EnergyAustralia can employ better technology or use other depots to improve the time taken to complete a task. EnergyAustralia considered that the AER's decision on efficient opex is based on two additional investments for which there is no allowance in the AER's draft decision:

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63 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, pp. 26–29.

64 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 13.

65 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 13.

- **Mobile computing for public lighting maintenance crews—**EnergyAustralia stated that this not only requires the handheld devices but the back office, IT systems and software licences to manage the information.

- **New depots—**Currently, EnergyAustralia's public lighting maintenance crews shares the fixed costs of depots with standard control services. EnergyAustralia considered that any new depots for public lighting service would be wholly and directly allocated to public lighting customers.

EnergyAustralia noted EMS's conclusion regarding the use of better technology and the assumption that the implementation of this technology would be quickly recovered by EnergyAustralia. EnergyAustralia stated that these costs will never be recovered if there is no allowance for them. EnergyAustralia also stated that the AER has effectively enforced forecast opex savings from investments in technology that it does not have funding for.

EnergyAustralia did not agree that a decentralisation of scheduling and administration of public lighting tasks would result in more efficiency. It considered that it is likely to require additional costs with more staff and infrastructure. EnergyAustralia stated that there is no justification for the conclusion that utilising additional depots and facilities will reduce costs.[66]

Consultant review

In response to the first point raised by EnergyAustralia, EMS noted that the EWP is not 'parked' but rather located as required to provide access to the street light that is to be repaired. EMS considered that the choice of location is very limited and may well be unsafe were it not for the implementation of traffic management measures. EMS noted that the time required for traffic management is included in the job preparation allowance of 10 minutes. EMS did not consider that any additional allowance should be made for EWP parking.

On the second point raised by EnergyAustralia, EMS responded that it understood the standard procedure for such events in residential areas, is to place a cover, held by a rod from the ground over the PE cell for 20 to 30 seconds in order to observe the operation of the light. At most, EMS considered that, three street lights would require testing. The total time required, allowing for progress by foot between adjacent lights would, in EMS's opinion, be under three minutes. EMS stated that considering this procedure would be required only on relatively rare occasions, the time for locating faulty lights when averaged across all spot maintenance tasks would not be significant within the accuracy of the modelling.

In relation to the third point raised by EnergyAustralia concerning the issues with driving a large truck through urban and CBD environments, EMS noted that the North Street Light team, which is attested by SKM to be wholly representative of the street light maintenance business within EnergyAustralia, includes a permanent afternoon shift from 3:00pm to midnight. EMS considered that a significant proportion of work was therefore undertaken after 7:00pm when traffic congestion is minimal. However,

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[66] EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, pp. 13–14.

accepting EnergyAustralia's claim that the typical distance covered in 5 minutes by an EWP in congested traffic is 2 to 3 kilometres, EMS considered that the critical issue then became the bundling of jobs.

In its February 2010 report, EMS noted that it compared EnergyAustralia's average time to repair (currently 3.4 days) with that agreed with its public lighting customers (8 days). EMS accepted that some of the reduction from 8 days to 3.4 days will flow from the fact that quarterly patrols provide a natural bundling of repair tasks, but pointed out that low average times can also result from a management policy that prioritises repair rate over cost efficiency. It stated that an average repair time of 3.4 days when 8 days are available may indicate a lack of focus on the need to bundle jobs in order to reduce costs.

EMS stated that its view was, and remained, that customers should not be forced to pay for a higher level of service unless they specifically requested it. EMS considered that EnergyAustralia's achievement of a higher level of service is commendable only if it is achieved at no additional cost to the customer. As it is, EnergyAustralia is proposing that its customers be made to pay for a level of service that they did not ask for and which they have not been consulted on. EMS continued to hold the view that the capacity existed for EnergyAustralia to increase the level of task bundling and remain within its 8 day commitment. As a result, EMS maintained its opinion that an allowance of 5 minutes for travel between jobs, on average, was a fair assumption.

Although maintaining its position that an allowance of 5 minutes for travel time between jobs was a fair assumption, EMS agreed that pre and post shift lost time should be increased from 45 minutes to 51 minutes based on its acceptance of SKM's non-productive time assumptions (section 3.4.3). EMS calculated that, on the basis of this change, the number of spot maintenance tasks per 7.2 hour day would be 13.64 (or 31.7 minutes per spot maintenance task). It therefore recommended that the spot maintenance time requirements in the opex model be adjusted from 30.6 minutes to 31.7 minutes for lamp and PE cell replacements.[67]

A comparison of EMS's original and revised spot maintenance time requirements are set out in table 3.1.

[67] EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, p. 11–13.

Table 3.1: Comparison of EMS's original and revised spot maintenance time requirements (minutes)

Task	Original	Revised
Start shift and end shift lost time	45	51
Travel to first job site	20	20
Site preparation	10	10
Repair work	10	10
Travel to next job	5	5
Repeat site preparation, repair work and travel to next job 'n' times	–	–
Return to depot from last job site	20	20

Source: EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, p. 11–13.

EMS noted that in its February 2010 report it had expressed an opinion regarding efficiencies that may be gained by using other depots and facilities for the street lighting crews in order to reduce travel times, and also the use of personal digital assistant devices for job issue and reporting. It noted that EnergyAustralia had criticised these suggestions essentially on the basis that no capital allowance had been provided for the establishment of these improvements.

EMS noted that, in expressing these views, it had in mind the parking of the EWP in an existing depot or facility and the simple provision of a suitable enclosure or locker for imprest stores, the cost of which it considered would be very moderate. EMS acknowledged that the use of personal digital assistant devices to eliminate manual data entry may incur a greater cost. However, in both cases, it stated that it expected that EnergyAustralia would undertake cost/benefit analyses and, if the payback period was satisfactory then EnergyAustralia would implement such efficiency improvements in order to reduce its own costs. EMS continued to hold the view that EnergyAustralia should consider making these investments in improved efficiency.

AER considerations

EnergyAustralia has put forward a number of arguments as to why it considered that the assumption of 5 minutes travel time between each task adopted in the draft decision was unrealistic. EMS reviewed these arguments and responded to each. EMS indicated that the arguments did not change its view that an average assumption of 5 minutes between tasks remained appropriate.

The AER has reviewed each of the arguments raised by EnergyAustralia and EMS's responses to them. The AER does not consider that EnergyAustralia's arguments provide any substantive evidence that the AER should increase the travel time between spot repair tasks. Consistent with EMS's findings, the AER considers that the assumption of 5 minutes between tasks will encourage EnergyAustralia to more

efficiently bundle its spot maintenance activities whilst remaining within its 8 day obligation under the NSW pubic lighting code.

However, in relation to overall spot maintenance time requirements, the AER accepts EMS's recommendation to increase the pre and post lost time assumption from 45 minutes to 51 minutes as this is consistent with EMS's findings in relation to labour unit rates. This change reduces the number of spot maintenance tasks (for lamp and PE cell replacements) per day to 13.64 or 31.7 minutes per spot maintenance task. The following section discusses miscellaneous spot maintenance time requirements.[68]

3.4.5 Miscellaneous spot maintenance time requirements

AER draft decision

In its February 2010 draft decision the AER accepted the timing recommended by EMS for miscellaneous spot maintenance tasks, requiring 30.6 minutes per task rather than EnergyAustralia's proposal of 40 minutes per task.[69]

EnergyAustralia submission

EnergyAustralia has revised its assumption of the time taken to undertake a miscellaneous maintenance task from 40 minutes to 10 minutes. It stated that the change was in response to a valid issue raised by EMS that mechanical and electrical repairs were frequently undertaken when replacing a lamp or PE cell (the other categories of spot repairs).[70] EnergyAustralia noted that this implied that many miscellaneous tasks were carried out at the same time that it replaced a lamp or PE cell, and only required an incremental increase in the amount of time required to complete the task.[71]

Consultant review

EMS agreed with the adjustment to the time taken to undertake a miscellaneous maintenance task.[72]

AER considerations

The AER has reviewed the adjustment proposed by EnergyAustralia and considers that it is reasonable. The AER has applied an allowance of 10 minutes for a miscellaneous maintenance task in its modelling of EnergyAustralia's opex requirements.

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68 EnergyAustralia's opex model contains three types of spot maintenance tasks – lamp, PE cell and miscellaneous.

69 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, pp. 26–29.

70 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 13.

71 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 13.

72 EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, p. 13.

3.4.6 Miscellaneous (other component) failure rates

AER draft decision

In its January 2010 proposal EnergyAustralia assumed certain failure rates for lamps, PE cells and what it termed 'other components'. The 'other components' category was aimed at capturing spot repairs to other minor components of a public light—for example, replacing fuses, visors and starters. In its February 2010 draft decision the AER accepted EnergyAustralia's proposed miscellaneous (other component) failure rate of 1 per cent on the basis that the rate was based on historical data and EMS's advice that it be accepted.[73]

EnergyAustralia submission

The failure rate for other components was estimated by EnergyAustralia to be 1 per cent (rounded up from 0.83 per cent). The rate reflected the annual percentage of 'other components' that failed and required repair.

In its March 2010 submission on the draft decision EnergyAustralia stated that, given the truncated timelines to develop its January 2010 proposal, it used a basic average to approximate a 1 per cent failure rate per annum. It noted that this rate was the simple sum of the failure rates, excluding works on luminaires and brackets as they were assumed to be capitalised.[74] EnergyAustralia stated that it has now reviewed these assumptions and found them to be incorrect, in particular its assumption that all luminaire and bracket repairs are capitalised. EnergyAustralia stated that around 66 per cent and 26 per cent of costs (for luminaires and brackets respectively) were in fact expensed. EnergyAustralia has calculated the miscellaneous failure rates based on the average weighted by the proportion of costs that are typically expensed. It stated that this calculation shows that the 'other components' failure rate is 9.6 per cent rather than 1 per cent.[75]

Consultant review

EMS noted that EnergyAustralia had previously excluded brackets and luminaires from its analysis of 'other components' failure rates as EnergyAustralia had incorrectly assumed that these were capitalised. EMS stated that, on this basis, EnergyAustralia had proposed that the annual failure rate should be multiplied by the proportion of replacement costs that were expensed in the past. EnergyAustralia stated that since 65.9 per cent of luminaire replacements were expensed in the past than the annual failure rate of 12.89 per cent[76] should be resolved into an opex failure rate of 8.5 per cent—that is, 65.9 per cent multiplied by 12.89 per cent. EMS noted that EnergyAustralia proposed to develop all other miscellaneous component failure rates (for example, brackets, choke, fuse holder, shade etc.) in the same way.

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73 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 31.

74 EnergyAustralia also noted that the failure rates associated with the PE cells and lamps were excluded because they are specifically calculated in the opex model.

75 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, pp. 16–17.

76 The unweighted failure rate of 12.89 per cent is taken from table 3 of EnergyAustralia's March 2010 submission (p. 17).

EMS stated that the failure rates of components, are a physical component independent of the allocation of repair costs. It noted that advice from EnergyAustralia on 12 February 2010 indicated that the physical numbers are are determined from a count of repairs. EMS considered that it was invalid to use past cost expenditure allocations to modify failure rates determined from actual physical counts of repairs.[77]

EMS considered that, even if the modification of failure rates with past cost allocations were considered to be a valid modelling approach, the result in relation to luminaires is intuitively improbable. EMS stated that EnergyAustralia claims that 8.5 per cent of luminaires are replaced for reasons of failure every year—that is, on average, every luminaire in EnergyAustralia's network fails in service every 11.8 years. It noted that this refers to the failure of the luminaire itself whereas components within the luminaire such as chokes, visors, lamps, starters and wiring are accounted for separately. EMS considered that almost the only remaining mode of failure of the luminaire itself would be corrosion or breakage of the housing. EMS also considered that a failure rate of 8.5 per cent for this mode of failure was a highly improbable representation of actual luminaire performanc.[78]

Overall, EMS considered that the breakdown provided by past cost allocations, at least in respect of luminaires, was intuitively improbable and that it was much more likely, as EnergyAustralia had assumed previously, that luminaire failures would be costed as capital replacements. EMS's opinion was that the quantification of luminaire failure replacements in EnergyAustralia's submission was not sound and therefore it considered that EnergyAustralia's January 2010 proposal be retained—that is, an 'other components' failure rate of 1 per cent.[79]

AER considerations

The AER notes that EMS considered failure rates to be a physical component, independent of the allocations of repair costs and that the use of past cost expenditure allocations to modify physical failure rates was an invalid approach. EMS noted that the opex model used the failure rates to determine the cost of maintaining miscellaneous components by multiplying the failure rate and time required for repair. The AER agrees with EMS that is inappropriate to modify physical failure rates using past expenditure allocations.

The primary reason for the increase in the 'other components' failure rate proposed by EnergyAustralia is the inclusion of the failure rate for luminaires. The AER notes that a luminaire failure rate of 8.5 per cent equates to every luminaire in EnergyAustralia's network failing, on average, every 11.8 years. Given that this failure rate relates to the luminaire housing itself and not the other components (such as wires, fuses, etc.) this does not appear to be a reasonable assumption. The AER notes that EMS considered that the failure of a luminaire itself would be a 'very rare event'. The AER therefore

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77 EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, p. 18.

78 EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, p. 18.

79 EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, pp. 17–18.

accepts EMS's view that EnergyAustralia's proposed failure rate of 8.5 per cent for luminaires is a highly improbable representation of luminaire failure performance.

Given the issues identified with the failure rate for luminaires and the approach to calculating the overall failure rate for other components, the AER does not consider that the other components failure rate should be increased to 9.6 per cent. The AER also notes that EnergyAustralia's proposed change to the 'other components' failure rate was only raised in EnergyAustralia's March 2010 submission on the draft decision. This means that interested parties have not had the opportunity to comment on it. Nevertheless, the AER has assessed the information put forward by EnergyAustralia to support its proposed change for the failure rate assumption of 'other components'.

The AER confirms its draft decision that the failure rate to be applied to 'other components' is 1 per cent.

3.4.7 Assumed spot lamp failure rates

AER draft decision

In its February 2010 draft decision the AER accepted the spot failure rates developed by EnergyAustralia for a number of lamps but for all other lamps adopted the failure rates from its April 2009 decision. The AER also stated that EnergyAustralia needed to improve its data collection practices so that it could reliably analyse the failure rates of all its lamp types.[80]

EnergyAustralia submission

EnergyAustralia noted that its January 2010 proposal applied failure rates based on an analysis of spot repairs undertaken from 1 January 2006 to 30 June 2009 across its network. It stated that in those cases where it did not have sufficient data it applied the failure rates from the April 2009 AER decision. EnergyAustralia considered that its analysis revealed a very low rate of equipment failures, even when compared to the manufacturer published rates, and therefore it had concerns about the calculated failure rates.[81]

Given the sensitivity of the opex model to assumed failure rates, EnergyAustralia considered it would be appropriate to undertake further analysis regarding its previously applied results. To test its analysis EnergyAustralia stated that it had compared the number of work orders which have resulted in the replacement of lamps with the number of lamps being booked in and out of stores. EnergyAustralia stated that it found that significantly more lamps had been booked out of stores than appear on work orders.

As a result of its analysis, EnergyAustralia stated that it was now convinced that the failure rates it proposed in its January 2010 proposal and applied in its opex model were likely to be systematically low. It stated that until it had a better understanding for this discrepancy it was not possible to apply the lamp failure rates from its

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80 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 31.

81 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 14.

analysis. EnergyAustralia stated that given the AER did not agree with the failure rates from its 2004 Street lighting analysis report EnergyAustralia has revised its proposed opex to apply manufacturer failure rate data, which were obtained from the April 2009 AER decision.

Consultant review

EMS noted that EnergyAustralia's June 2008 proposal was based on a technical report prepared in 2004 which the AER considered should be accorded considerably less weight due to its age and the fact that it did not factor in a number of important changes in EnergyAustralia's public lighting operations.[82] It also noted that the AER had sought information from a lamp manufacturer in relation to the deterioration and failure characteristics of a range of MV, HPS and fluorescent lamps and that this limited analysis revealed failure rates considerably lower than the assumptions in EnergyAustralia's June 2008 proposal. EMS noted that failure rates adopted by the AER in its April 2009 decision were based on the manufacturer's data, where available. Lamps for which no data were available were assigned an assumed failure rate 20 per cent lower than the assumptions in EnergyAustralia's June 2008 proposal.

EMS noted that failure rates assumptions are a critical input to EnergyAustralia's opex model. It noted that, in recognition of the apparent imprecision of both the June 2008 and April 2009 assumptions, EnergyAustralia had undertaken its own analysis of 41 lamp types for which 'sufficient failure records existed for 24 lamp types to be able to determine statistical parameters for the Weibull distribution that most closely matched the data sets'.[83] EMS noted that the analysis revealed failure rates that EnergyAustralia considered to be surprising.[84] In EMS's view, the rates were in line with its expectations.[85]

EMS noted that according to EnergyAustralia's Street lighting MRA review, the data for the Weibull analysis was taken from notifications of failures from BLR work and from customer complaints.[86] EMS also noted that in its January 2010 proposal, EnergyAustralia explained that:[87]

> As a consistency check we reviewed the number of lamp failures recorded against materials in stores. For our 7 largest lamp populations, of the 250,000 lamps booked out of stores, we found that 20,033 (or 8%) were not recorded on our systems (in terms of usage for bulk or spot maintenance or capital works). This could mean that a material proportion of lamp replacements are occurring and no information is being recorded thus distorting the failure rate conclusions to artificially lower rates. Other reasons could include

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82 AER, *Final Decision, New South Wales distribution determination, 2009–10 to 2013–14*, 28 April 2009, p. 344.

83 EnergyAustralia, *Street lighting, Maintenance requirement analysis (MRA) review*, January 2010, p. 6.

84 EnergyAustralia, *Submission for the AER's redetermination of public lighting prices 2010 to 2014*, 7 January 2010, p. 35.

85 Refer to discussion in chapter 3, EMS, *EnergyAustralia public lighting submission to AER for re–determination 2010–14, Review of operating expenditure*, 23 February 2010.

86 EnergyAustralia, *Street lighting, Maintenance requirement analysis (MRA) review*, January 2010, appendix 1.

87 EnergyAustralia, *Submission for the AER's redetermination of public lighting prices 2010 to 2014*, 7 January 2010, p. 36, including footnote 65.

> fluctuations in BLR contractor held stock. The extent to which this variance impacts spot failure rates is unclear at this time."

EMS stated that notwithstanding the possible errors in the data, EnergyAustralia accepted its own analysis and, in its January 2010 proposal, adopted its failure rates where known, and the rates approved in the April 2009 AER decision in all other cases. EMS considered that to be a reasonable approach since a data error of 8 per cent would be expected to affect the calculated failure rate by a similar proportion. It noted that, for example, a theoretical failure rate of 2.5 per cent may represent an actual rate that varies from 8 per cent lower (that is, 2.3 per cent) to 8 per cent higher (that is, 2.7 per cent).

EMS noted that in its March 2010 submission EnergyAustralia has reversed its position by claiming that the data errors discussed above mean that its January 2010 proposal was no longer valid. EMS also noted that for its most common lamps, EnergyAustralia proposed to adopt failure rates that are up to six times higher than those determined from its own analysis. EMS considered that EnergyAustralia had not provided, in its March 2010 submission, any quantitative evidence to counter the 8 per cent data error estimation provided in its January 2010 proposal. EMS further considered that it was unlikely that additional data errors had been found that would justify such a large alteration in the assumed failure rates.

In the absence of revised quantitative evidence, EMS considered that the extent of the errors caused by missing lamp replacement data continued to be relatively minor (as in EnergyAustralia's January 2010 proposal) and therefore EMS concluded that there were insufficient grounds for disregarding the failure rates identified by EnergyAustralia's extensive analysis as described in its Street lighting MRA review.

EMS recommended that the failure rates adoped in the opex model be EnergyAustralia's 4 year rates for HPS lamps in TRL routes and EnergyAustralia's 3 year rates for all other lamps, where available, and the AER rates otherwise (subject to adjustments to correctly deal with multiple lamp configurations).[88]

AER considerations

Spot lamp failure rates applied in the opex model are a major determinant of maintenance charges. The AER acknowledges that in its January 2010 proposal EnergyAustralia raised some concerns with the failure rate data it provided, particularly that the data was understated. Nevertheless, EnergyAustralia proposed these rates as inputs to its January 2010 opex model. The AER, based on the advice of EMS, considered the approach to EnergyAustralia's calculation and the resultant rates to be reasonable.

The AER agrees with EMS that the extent of errors caused by the discrepancy between the stores data and works undertaken have a relatively minor impact on the failure rates. EMS noted that the data error of approximately 8 per cent could be expected to affect the calculated failure rates by a similar proportion. For example, this approach would increase theoretical failure rate of 2.3 per cent to 2.8 per cent. The AER notes that this increase is significantly less on average than those which

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[88] EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, p. 15–17.

would result from adopting the failure rates from the AER's 2009 decision (which were based on manufacturer's data). The AER further notes that EnergyAustralia acknowledged in its January 2010 proposal that other factors, such as fluctuations in BLR contractor held stock, may also explain the errors in its maintenance stores.

The AER notes that EnergyAustralia's proposed change in failure rates has been made in a submission on the draft decision and that interested parties have not had the opportunity to respond to the proposal.

Overall, the AER agrees with EMS that the extent of the errors caused by the missing lamp replacement data could be considered to be relatively minor and that there are insufficient grounds for disregarding the failure rates identified by EnergyAustralia's detailed analysis contained in its Street lighting MRA review. The AER therefore confirms the application of the spot lamp failure rates contained in its draft decision, subject to the multi-lamp configuration amendments set out in section 3.4.8.

3.4.8 Failure rates for multi-lamp configurations

AER draft decision

In its February 2010 draft decision the AER noted that it had corrected for the formulae errors identified by EMS so that there was no inconsistency between the application of the failure rate of a lamp and the failure rate of multi-lamp configurations of the same luminaire type.[89]

EnergyAustralia submission

In its March 2010 submission EnergyAustralia noted comments from EMS indicating inconsistencies between the failure rates used for single lamp configurations and those for multi-lamp configurations. EnergyAustralia also noted that the AER had changed the failure rates of multi-lamp configurations to the failure rate of a single lamp. EnergyAustralia considered that multiple lamps increase the probability of a lamp failure. It also considered that an appropriate adjustment would be to multiply the failure rate of a single lamp by the number of lamps.[90]

Consultant review

EMS stated that the failure rate of a given lamp type is a physical characteristic that is unaffected by whether the lamp is in a single lamp or a multi-lamp configuration. EMS noted that it had identified some inconsistencies in the January 2010 version of EnergyAustralia's opex model where a given lamp type was assigned the EnergyAustralia failure rate when in a single-lamp configuration, and the AER's April 2009 decision failure rate when in multi-lamp configurations. EMS stated it appeared that EnergyAustralia had since reviewed the opex model and found that the number of lamps in multi-lamp configurations was not factored into the calculation of spot maintenance costs. However, from its review EMS considered that the number of lamps is factored into materials costs (in the opex cost model 'Calc–Opex' worksheet, columns AQ and BL) but not into labour or EWP costs.

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89 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 31.

90 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 15.

EMS stated that in order to deal with this error, EnergyAustralia had proposed to adopt failure rates for multi-lamp configurations equal to the failure rate of a single lamp multiplied by the number of lamps, as listed in table 1 of EnergyAustralia's March 2010 submission. EMS considered that this would be correct only if the number of lamps factored into the materials cost was removed. Whilst this would give the correct bottom-line result, EMS considered the approach to be wrong in principle.

In order to preserve the analytical robustness and flexibility of the opex model, EMS suggested that EnergyAustralia should adjust the model such that the failure rate for each lamp type listed in the 'Input-Inventory' worksheet is that lamp's correct failure rate, regardless of how many such lamps are in a configuration. EMS stated that the effect of the number of lamps in multi-lamp configurations should then be factored into labour, materials and EWP costs in the 'Calc–Opex' worksheet.[91]

AER considerations

The AER notes the recommendations made by EMS to account for multi-lamp adjustments in the 'Calc–Opex' worksheet of the opex model with regard to labour, materials and EWP costs. As EMS points out, these adjustments would have no net effect on the overall opex modelling outcomes. However, the AER considers that these adjustments would introduce additional complexity to the opex model without material impact on the modelled outcomes.

The AER considers that the adjustments made by EnergyAustralia to multi-lamp configuration failure rates, in conjunction with the adjustments made for multi-lamp configuration costs are reasonable.

3.4.9 Lamp costs for luminaires with multiple lamps

AER draft decision

In its February 2010 draft decision the AER made an adjustment to the opex model to correct formulae errors relating to lamp prices for luminaires with multiple lamps.[92] This adjustment resulted from EMS's observation that there were instances in the opex model where lamp prices differed in those luminaires with multi-lamps, leading to an overstatement of costs.[93]

EnergyAustralia submission

EnergyAustralia stated that, in response to the AER's concerns, it had reviewed its assumptions and confirmed that its proposed modelling overstated lamp costs for luminaires with multiple lamps. EnergyAustralia stated that it had modified its opex model to account for this overstatement such that the cost of each lamp in a luminaire only contributed once to the spot maintenance cost.[94] This change involved altering

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91 EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, pp. 16.

92 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 24.

93 EMS, *EnergyAustralia public lighting submission to AER for re–determination 2010–14, Review of operating expenditure*, 23 February 2010, pp. 22–23.

94 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 12.

the costs of multi-lamp configurations in the 'Input–Inventory' worksheet of the opex model to reflect only the single lamp cost.

AER considerations

The AER reviewed the changes to the costs of multi-lamp configurations made to the opex model by EnergyAustralia in conjunction with changes to the failure rates for multi-lamp configurations. Although the AER found the changes largely addressed the concerns raised in the draft decision, the AER did identify one issue relating to the formula in column BL of the 'Calc–Opex' worksheet, whereby the lamp price for spot replacements was multiplied by the number of lamps relating to the particular luminaire.

The AER considers that the adjustment in spot maintenance for multi-lamp configurations had previously been accounted for in the amended failure rates provided by EnergyAustralia, leading to an overstatement of costs for the multi-lamp luminaires. While not material, this error has been corrected by the AER consistent with the Tribunal's direction to correct any errors found during the process of the decision.[95]

3.4.10 PB benchmarking study

AER draft decision

In its February 2010 draft decision the AER did not agree with PB's view that EnergyAustralia's proposed opex has been demonstrated to be efficient. The AER noted EMS considered that PB's review of historical costs suggested that the proposed opex was actually inefficient and that the benchmarking was to some extent misleading. Further, EMS considered PB's overall conclusion that EnergyAustralia's forecast of expenditure for public lighting services was efficient to be somewhat generous. Overall, the AER considered that the adjustments it made to EnergyAustralia's forecast opex were appropriate and would ensure that EnergyAustralia's operating and maintenance activities were efficient.[96]

EnergyAustralia submission

EnergyAustralia's March 2010 submission stated EMS's conclusion that EnergyAustralia's performance, in terms of street light opex per street light for city/urban DNSPs, was of the same order as some of the worst performing distributors was an incorrect interpretation of the data presented in PB's review. EnergyAustralia also stated that by focusing on 'opex per street light' EMS has ignored other relevant measures of efficiency such as 'opex per customer'. EnergyAustralia noted that on this measure it performed better than the majority of DNSPs.[97]

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95 Australian Competition Tribunal, *Application by EnergyAustralia and others (No. 2) [2009] ACompT*, 25 November, paragraph 5(7).

96 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 41.

97 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, pp. 20–22.

EnergyAustralia requested that the AER revisit PB's review and give weight to PB's conclusion that EnergyAustralia's forecast opex for public lighting services was efficient.

Consultant review

EMS noted EnergyAustralia's criticisms of its view that the evidence presented by PB showed that EnergyAustralia's performance is of the same order as some of the worst performing DNSPs and that EMS did not properly consider all relevant facts. EMS considered that EnergyAustralia's arguments could be summarised as:[98]

- PB's benchmarking data showed EnergyAustralia's public lighting performance is at the median rather than at the worst end of the benchmarked DNSPs.
- EMS's benchmarking against Victorian DNSPs is in error.
- EMS should accept 'opex per customer' as a valid benchmark.
- EMS has not addressed the business characteristics of each of the benchmarked DNSP.
- EnergyAustralia considered Integral Energy to be a relevant comparator and therefore more weight should be given to that specific benchmark comparison.

Business characteristics

EMS accepted that certain business characteristics do affect public lighting opex. It stated that movement around a CBD is not easy and while the distances are short, the speed of travel may be very slow. Notwithstanding the claims made by EnergyAustralia about Sydney's congested streets, EMS considered that PB had not provided any information to demonstrate material differences between the Sydney, Melbourne and Brisbane CBDs and had in fact concluded that in broad terms, the gains of short travel distances equal the losses of slow travel speeds.

In EMS's opinion, the key business characteristic that differentiates the costs faced by DNSPs in fulfilling their public lighting function is the extent of their rural areas. The cost of maintaining public lighting in CBD/urban areas may be expected to be considerably lower per street light than in rural areas. There are clearly many factors within the inherent cost characteristics. Intuitively, the only generally true difference is that DNSPs predominantly servicing CBD/urban areas may be expected to face lower costs per street light than DNSPs that service wholly rural areas.

Opex per customer

EMS noted that the fundamental requirement of any performance indicator is a strong link between cause and effect. It refuted EnergyAustralia's claim that it had ignored other measures such as 'opex per customer' and considered such a measure to be of

[98] EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, pp. 20–22.

little value since the causal link between customer numbers and street light opex was weak.[99]

EMS noted that EnergyAustralia's opex per customer was low because of the prevalence of high density residential accommodation in Sydney. Apart from traffic issues, which, in PB's view results in gains equalling losses, EMS considered that it did not matter whether a public light that requires maintenance is in a street lined with high-rise apartment buildings or bungalows on large suburban blocks. EMS therefore maintained its view that the casual link between customer numbers and public lighting opex is weak and that a benchmark based on this measure is of little value.

Benchmarking against Victorian DNSPs

EMS stated that EnergyAustralia had claimed that in EMS's February 2010 report, it had included three Victorian DNSPs (with lower costs) and excluded the Victorian DNSPs with higher costs.[100] EMS stated that it was puzzled by this claim noting that in its February 2010 report it stated that:[101]

> In terms of opex per street light (which clearly has a strong causal link) PB found that of eight Australian DNSPs with mostly city and urban distribution areas, EnergyAustralia ranked sixth in terms of public lighting opex per light installed. The actual costs were $25, $29, $33, $43, $58, $59 (EA), $60 and $63 per light installed… The worst figures ($60 and $63) relate to Victorian DNSPs, which as PB notes, are based on proposed 2011–16 expenditure rather than AER approved expenditure. The better figures relate to a mixture of Queensland, NSW and Victorian DNSPs.

EMS considered that the discussion clearly included all Victorian DNSPs including the two with higher costs. In relation to the caveat about the Victorian DNSPs' expenditure being 'as proposed' rather than 'as approved', EMS pointed out that in the normal course of events, approved expenditure is lower than proposed expenditure. If this turns out to be the case for the Victorian DNSPs then EnergyAustralia's opex per street light will appear even higher by comparison.

Integral Energy as a relevant comparator

EMS noted that EnergyAustralia's March 2010 submission considered Integral Energy to be a relevant comparator for its business as they both operated under the same service level framework. EMS noted PB's data showed that in terms of 'street light opex per street light', EnergyAustralia's and Integral Energy's benchmarks were very close, and in terms of 'street light opex per customer' EnergyAustralia was well ahead of Integral Energy. However, EMS considered that given the multitude of inherent cost characteristics, it was not possible to nominate any single DNSP as a valid comparator. It stated that the only approach that has any credibility was to consider all similar DNSPs as a whole—that is, predominantly CBD/urban DNSPs may be compared as a group and wholly rural DNSPs may be compared as a group.

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99 EMS, *EnergyAustralia public lighting submission to AER for re–determination 2010–14, Review of operating expenditure*, 23 February 2010, p. 27.

100 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 21.

101 EMS, *EnergyAustralia public lighting submission to AER for re–determination 2010–14, Review of operating expenditure*, 23 February 2010, p. 27.

Even then, EMS considered that conclusions may be drawn only in the broadest of terms.

Benchmarking

EMS noted that PB summarised its benchmarking with the statement:[102]

> On all indicators, EnergyAustralia's service provision is more efficient than other NSW DNSPs but worse than Victorian and Queensland DNSPs. Taking into account the differences between states that PB is aware of, the benchmarking supports that EnergyAustralia is operating at a reasonable level of efficiency.

EMS noted that PB based its conclusion on the data shown in two figures on 'opex per street lighting customers' and 'opex per street light' contained in the PB review.

EMS considered that:

- the causal link between public lighting opex and customer numbers is weak and therefore performance measured in terms of cost per customer is of little value
- the inherent cost characteristics of wholly rural DNSPs are such that benchmarking predominantly CBD/urban DNSPs against them is invalid.

On that basis, EMS considered PB's public lighting opex per network customer figure to be of little benchmarking value and that rural DNSPs should be omitted. The remaining elements of PB's benchmarking that EMS considered provided a reasonable comparison are shown in figure 3.1.

In reviewing PB's benchmarking analysis, EMS's February 2010 report considered that PB's conclusion—that EnergyAustralia is operating at a reasonable level of efficiency—was somewhat misleading in that EnergyAustralia's performance in terms of opex per street light for city/urban DNSPs was of the same order as some of the worst performing DNSPs.[103] EMS stated that its conclusion was based on PB's own data and related only to the benchmarking study. EMS considered that the benchmarking undertaken by PB did not sufficiently take into account all factors that contribute to a DNSP's inherent costs and that a broad comparison of predominantly CBD/urban DNSPs was the best that could be achieved.

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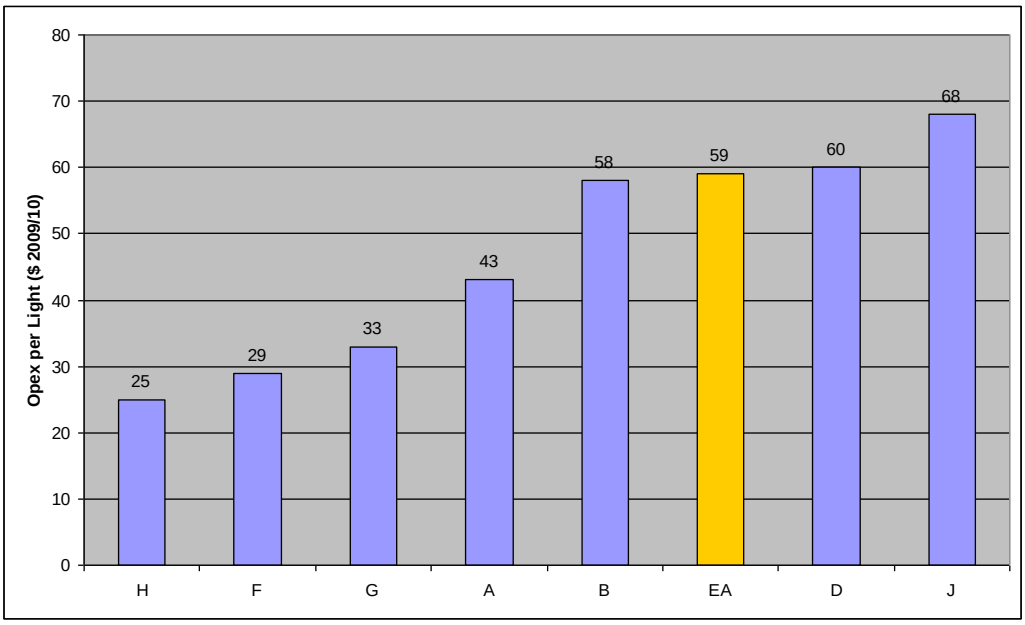
[102] Parsons Brinckerhoff, *Independent review of public lighting costs – EnergyAustralia*, January 2010, p. 25.

[103] EMS, *EnergyAustralia public lighting submission to AER for re–determination 2010–14, Review of operating expenditure*, 23 February 2010, p. 28.

Figure 3.1: Public lighting opex per light—reasonable comparison basis



Source: EMS, *EnergyAustralia public lighting submission to AER for re–determination 2010–14, Review of operating expenditure*, 23 February 2010, p. 27.

EMS noted that PB was prepared to draw a conclusion, on the evidence of its benchmarking charts, that EnergyAustralia was operating at a reasonable level of efficiency. EMS challenged that conclusion. In its opinion the charts indicated that EnergyAustralia's performance was of the same order as some of the worst performing DNSPs. Therefore, EMS considered that its opinion in relation to PB's benchmarking study, remained valid.

Conclusion

Overall, EMS stated that its interpretation of historical costs and benchmarking differed considerably from PB's. Since these are key elements of PB's cost review, EMS considered that PB's overall conclusions that 'EnergyAustralia is on average operating efficiently in its provision of public lighting services' and 'EnergyAustralia's forecast of expenditure for public lighting services is efficient' to be somewhat generous. Having completed a more detailed review of PB's benchmarking study, EMS stated that it found no reason to alter that opinion.[104]

AER considerations

The AER has reviewed EnergyAustralia's submission, PB's benchmarking review and EMS's reassessment of PB's review. The AER notes that EMS has responded to each of the issues raised by EnergyAustralia in relation to PB's benchmarking review. The AER also notes that from its more detailed review of PB's study EMS maintained its view that PB's conclusion that 'EnergyAustralia's forecast of expenditure for public lighting services is efficient' is somewhat generous. Taking account of EMS's findings the AER does not consider that the benchmarking demonstrates EnergyAustralia's proposed opex to be efficient. Overall, the AER considers that the

[104] EMS, *EnergyAustralia public lighting operating expenditure submission to AER for re–determination 2010–14, Reassessment of recommendations*, 22 March 2010, p. 27.

adjustments it has made to EnergyAustralia's forecast opex are appropriate and will ensure that EnergyAustralia's operating and maintenance activities are efficient.

3.5 Conclusion

Based on its review of EnergyAustralia's March 2010 submission and opex model, SSROC's submission and a consultancy report from EMS, the AER has made the following adjustments to the opex model used in its draft decision:

- the timing assumption per spot repair (lamp and PE cell) has been increased from 30.6 minutes to 31.7 minutes in order to provide for revised lost time assumptions
- the AER has accepted EnergyAustralia's proposal to reduce the spot failure time requirements for 'other components' from 30.6 minutes to 10 minutes
- formulae errors have been corrected relating to lamp costs for luminaires with multi-lamps.

The above adjustments result in an opex allowance for EnergyAustralia's public lighting assets of $13.7 million for 2009–10. This is a reduction of around $3.6 million (or 21 per cent) from EnergyAustralia's proposed opex allowance of $17.3 million for 2009–10 in its March 2010 submission.[105] This decision also represents a small reduction of around $0.2 million (or 1.4 per cent) from the AER's draft decision opex allowance of $13.9 million for 2009–10.

For each subsequent year of the 2009–14 regulatory control period this allowance is to be adjusted by inflation, and includes the real labour cost escalators determined in the April 2009 AER decision. Indicative nominal opex allowances for the remainder of the 2009–10 regulatory control period are contained in table 4.2 of this final decision.

[105] EnergyAustralia sought an opex of $16.3 million for 2009–10 in its January 2010 proposal.

4 Other issues

This chapter sets out the AER's consideration of submissions on a number of other issues arising from the draft decision. These include:

- correction of errors in the annuity capital charge model—for labour hours associated with the construction of a public light and the proportion of labour assumed for constructing a public light
- clarification on the implementation of the control mechanism such as the calculation of the CPI, the timing of charges arising from the early replacement of assets at the customer's request and the adjustment to the RAB for residual asset values
- guidance on demonstrating compliance with the control mechanism.

This chapter also discusses the updated schedule of charges and prices for EnergyAustralia's pre 1 July 2009 and post 30 June 2009 public lighting assets, based on the changes to the inputs and assumptions within EnergyAustralia's public lighting models as a result of this final decision.

4.1 AER draft decision

In its February 2010 draft decision the AER reviewed EnergyAustralia's public lighting models to verify the required corrections outlined by the Tribunal and made further adjustments. These adjustments included those made to EnergyAustralia's annuity capital charge model in relation to labour hours associated with the construction of public lights and the proportion of labour assumed for constructing a public light.[106]

The AER also made amendments to the control mechanism clarifying how it was to apply in order to determine the charges/prices over the 2009–14 regulatory control period, and set out some adjustments to the compliance mechanism for EnergyAustralia.[107]

4.2 Submissions

In its March 2010 submission EnergyAustralia supported the AER's draft decision on the method to calculate the residual value of assets being replaced early at the customer's request.

EnergyAustralia did not agree with the AER's adjustments to the annuity capital charge model:

- labour hours for construction of a public light—EnergyAustralia stated that the AER's changes to the effective rate for constructing a new public light to 2.08 hours for traffic routes and 1.39 hours for non-traffic routes were not

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106 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, pp. 51–53.

107 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 66.

appropriate. EnergyAustralia maintained its proposal of 3 hours for traffic routes and 2 hours for non-traffic routes.

- proportion of labour assumed for constructing a public light—EnergyAustralia proposed that, instead of the 23 per cent applied in the draft decision, the AER adopt the proportion of labour to total capex of 42 per cent on the basis of actual year to date costs.

EnergyAustralia generally agreed with the AER's draft decision on the control mechanism but sought clarification on:

- how the CPI would be calculated
- whether the RAB is to be adjusted only for the residual value of assets due to early replacement at the customer's request
- the timing of customer charges arising from the early replacement of assets at the customer's request
- the approach for invoicing customers on the basis of the approved maintenance prices.

EnergyAustralia also commented on the AER's draft decision requiring it to report inventory information to customers every six months, showing the assets that have been installed and those that have been removed.

In its March 2010 submission SSROC stated that an increase in public lighting capital and maintenance charges by more than 54 per cent, based on the draft decision, is an extraordinary price shock for councils. It noted that, with no flexibility to cut public lighting services, it would inevitably result in significant cuts to other vital public services provided by councils. SSROC further stated that to avoid unnecessary dislocation on council services, price increases should be smoothed over the regulatory control period.[108]

4.3 Issues and AER considerations

4.3.1 Correction of errors

Labour hours to construct a public light—annuity capital charge model

The AER's April 2009 decision included an effective installation rate based on the assumption of 42 minutes to install a new public light.[109] In its February 2010 draft decision the AER noted that EnergyAustralia had adjusted the effective rate for constructing a public light in its annuity capital charge model to 3 hours for traffic routes and 2 hours for non-traffic routes. In the absence of information from EnergyAustralia on the appropriateness of assuming 60 minutes to install a new

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[108] SSROC, *Submission on the AER's draft decision – redetermination of public lighting prices 2010 to 2014*, 11 March 2010, pp. 4–5.

[109] AER, *Final decision, NSW distribution determination, 2009–10 to 2013–14*, 28 April 2009, pp. 384, 400.

public light, the AER decided to maintain the assumption of 42 minutes to install a new public light (as adopted in its April 2009 decision). This resulted in the AER making changes to the effective installation rate in EnergyAustralia's annuity capital charge model to 2.08 hours for traffic routes and 1.39 hours for non-traffic routes.[110]

In its March 2010 submission EnergyAustralia stated that its annuity capital charge model submitted as part of its January 2010 proposal applied the effective rate for constructing a public light of 3 hours for traffic routes and 2 hours for non-traffic routes on the basis of the assumption that it would require 60 minutes to install a new public light. EnergyAustralia argued that the AER's adjustments to the annuity capital charge model based on the allocation of 42 minutes to install a new public light was unreasonable.[111]

The AER notes the issues raised by EnergyAustralia concerning the time to construct a public light and makes the following observations:

- Contrary to EnergyAustralia's claim in its March 2010 submission,[112] the AER does not consider that EnergyAustralia's proposed assumption of 60 minutes to install a new public light had previously been justified.

- The AER considered EnergyAustralia's primary issue to be the need for an additional person on traffic routes which the AER has made provision for in its draft decision.[113]

- The Tribunal did not find the AER's assumption in relation to the installation rates for a new public light to be in error. Rather, the Tribunal indicated that the AER could, in its discretion, consider this issue on remittal.[114]

- EnergyAustralia did not provide any support for the proposed assumption of 60 minutes to install a new public light in its January 2010 proposal.

- EnergyAustralia has only provided further information in support of its proposed assumption in its March 2010 submission on the AER's draft decision. This means that interested parties have not had the opportunity to consider and respond to this information.

- The assumption of 42 minutes to install a new public light was proposed by Integral Energy in its June 2008 regulatory proposal. The AER's April 2009 decision applied this assumption to all NSW DNSPs.[115] The AER notes that

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110 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 52.

111 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, pp. 23–24.

112 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 23.

113 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 52.

114 Australian Competition Tribunal, *Application by EnergyAustralia and others (No 2) [2009] ACompT 7*, 16 October 2009, paragraph 82.

115 AER, *Final decision, NSW distribution determination, 2009–10 to 2013–14*, 28 April 2009, pp. 384, 400.

EnergyAustralia considers Integral Energy to be a relevant comparator for its business.[116]

For these reasons, the AER considers that EnergyAustralia's proposed assumption of 60 minutes to install a new public light should be rejected and confirms the assumption applied in the draft decision—that is, 42 minutes to install a new public light.

Proportion of labour for constructing a light—annuity capital charge model

In its February 2010 draft decision the AER adjusted the assumed proportion of labour for constructing a public light in EnergyAustralia's annuity capital charge model from 60 per cent to 23 per cent. The adjustment was based on an estimate derived from analysing the data associated with the proportion of labour costs to total capex in the annuity capital charge model.[117]

EnergyAustralia's March 2010 submission agreed with the need to change the assumed proportion of labour for constructing a public light given that opex has been removed from the annuity model. However, EnergyAustralia stated that the data in the annuity capital charge model analysed by the AER omitted capitalised labour costs for supports and connections, leading to an underestimation of the proportion of labour costs to total capex. It provided an alternative proportion of labour costs to total capex of 42 per cent, based on year to date capex. EnergyAustralia proposed that this amount was appropriate for the AER to adopt as the labour cost proportion of total capex.[118]

The AER has reviewed EnergyAustralia's submission and considers that there is merit in using data based on actual capitalised labour costs to establish the likely proportion of labour for constructing a public light over the 2009–14 regulatory control period. This avoids the need to make complex adjustments to forecast capex data in the annuity capital charge model to obtain a more appropriate labour cost proportion than that adopted in the draft decision.

The AER also requested EnergyAustralia to provide data on actual capitalised labour costs for previous years for comparison with the data based on year to date capex. EnergyAustralia advised that there were difficulties with providing historical capitalised labour cost proportions in the time available and as a result of recent changes to its accounting system.[119] The accounting system now used by EnergyAustralia has made it simple to collect and report data relating to capitalised labour costs for public lighting for the current year and in the future. EnergyAustralia further advised that, while it believed that 42 per cent was an appropriate estimate of the labour cost proportion of total capex, its experience is that this proportion will

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116 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 22.

117 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, pp. 52–53.

118 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, pp. 24–25.

119 Email, *EnergyAustralia to AER*, 23 March 2010.

vary month by month. Therefore, an average proportion of 40 per cent would be a reasonable assumption.[120]

The AER accepts EnergyAustralia's advice and has amended the assumed labour cost proportion of total capex in the annuity capital charge model to 40 per cent for this final decision. When compared with the draft decision, all things being equal, this results in an increase to the annuity capital charges for post 30 June 2009 assets because a larger proportion of the construction cost is subject to real labour cost escalation.

4.3.2 Control mechanism

Calculation of the CPI

In its February 2010 draft decision the AER decided to include an annual adjustment for outturn CPI to the charges for pre 1 July 2009 assets during the 2009–14 regulatory control period.[121] This was set out in table 6.1 of the draft decision on the control mechanism for EnergyAustralia.[122]

In its March 2010 submission EnergyAustralia sought to clarify the calculation of the CPI when making the annual adjustment in the control mechanism. EnergyAustralia referred to 'the sum of four quarters to December formula' as the appropriate method to calculate CPI.[123] The AER agrees that this method is appropriate because it is consistent with that applied to standard control services, as outlined in the draft decision:[124]

> Annual percentage change in the ABS consumer price index all groups, weighted average of eight capital cities, consistent with using the method applied to standard control services. That is, the sum of four quarters from December in year t–2 to December t–1.

However, it appears that EnergyAustralia has misunderstood the role of this CPI calculation, which is to adjust for outturn CPI of the previous year, rather than for use as a forecast. For example, according to the formula of the control mechanism for schedule 1 in table 6.1 of the draft decision, when a charge is adjusted at year 2 (2010–11) the relevant outturn inflation rate (denoted as 'ΔCPI^{actual}') for the previous year (2009–10) is calculated as follows:

$$\text{Inflation rate}_{2009\text{–}10\ \text{(applied in year 2 but representing the outturn CPI of year 1)}} = \left(\frac{\text{Sum of CPI}_{2009}}{\text{Sum of CPI}_{2008}}\right) - 1$$

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120 Email, *EnergyAustralia to AER*, 29 March 2010.

121 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 58.

122 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, pp. 61–62.

123 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 26.

124 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, table note (a), p. 62.

$$= \left(\frac{CPI_{March\,2009} + CPI_{June\,2009} + CPI_{September2009} + CPI_{December2009}}{CPI_{March\,2008} + CPI_{June\,2008} + CPI_{September2008} + CPI_{December2008}} \right) - 1$$

$$= \left(\frac{166.2 + 167.0 + 168.6 + 169.5}{162.2 + 164.6 + 166.5 + 166.0} \right) - 1$$

= 1.82 per cent

The AER notes that, for schedules 3 and 5 in table 6.1 of the draft decision, it included in the formula of the control mechanism an adjustment that required the forecast inflation rate (denoted as '$\Delta CPI^{forecast}$'). The AER considers that this forecast inflation rate should be the same value as that used for standard control services during the 2009–14 regulatory control period—that is, 2.475 per cent—and also used in EnergyAustralia's public lighting models. For example, according to the formula of the control mechanism for schedule 5 in table 6.1 of the draft decision, when a residual value is determined at the end of year 2 (2010–11) the relevant formula can be decomposed further with the inflation adjustments calculated as follows:

$$\text{Residual value}^{\$2010-11} = \text{Annual depreciation}^{\$2008-09} \times \text{Remaining life}_{2010-11} \times \text{No. of assets replaced}_{2010-11} \times CPI_{2009-10}{}^{actual} \times (1 + \Delta CPI_{2010-11}{}^{forecast})$$

$$= \text{Annual depreciation}^{\$2008-09} \times \text{Remaining life}_{2010-11} \times \text{No. of assets replaced}_{2010-11} \times (1 + 0.0182) \times (1 + 0.02475)$$

$$= \text{Annual depreciation}^{\$2008-09} \times \text{Remaining life}_{2010-11} \times \text{No. of assets replaced}_{2010-11} \times 1.0434$$

Where:

- $CPI_{2009-10}{}^{actual}$ is the cumulative index based on the outturn inflation rate for 2009–10 as calculated above
- $\Delta CPI_{2010-11}{}^{forecast}$ is the forecast inflation rate of 2.475 per cent used for the 2009–14 regulatory control period.

RAB adjustments

In its February 2010 draft decision the AER accepted EnergyAustralia's proposed approach to calculating the residual capital value of an asset when a customer requests the early replacement of public lighting assets constructed before 1 July 2009. The AER outlined that the control mechanism for the early replacement of an asset would be represented by a formula for each public lighting component.[125]

EnergyAustralia's March 2010 submission on the draft decision sought to clarify that the approach to the RAB adjustment is only for the residual value of assets due to early replacement at the customer's request. EnergyAustralia did not propose to make

[125] AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 48.

the RAB adjustment in cases where it replaces an asset (for example, due to failure) which has not been fully recovered.[126]

The AER notes EnergyAustralia's comments seeking clarification and agrees that the RAB adjustment will only apply for the residual value of assets replaced early at the customer's request.

The AER confirms its draft decision that the control mechanism for the early replacement of an asset at the customer's request will be represented by a formula for each public lighting asset component. This approach is for pre 1 July 2009 assets. The formula for each asset component is set out in appendix A of this final decision.

For post 30 June 2009 assets, should a customer request that an asset be replaced early, the AER notes that a new charge would apply for the new asset in addition to the existing annuity payment for the replaced asset. Alternatively, the customer could negotiate to make an upfront payment of the remaining value of that replaced asset.

Timing of customer charges

In its February 2010 draft decision, as a result of accepting the approach for calculating the residual value of assets replaced early at the customer's request, the AER amended the control mechanism to clarify how consequential pricing adjustments were to be made. The AER set out the timing of customer charges and the residual value adjustment for assets replaced early at a customer's request in schedule 5 of table 6.1 of the draft decision (under the column titled 'Calculation of charge/price in years 2 to 5 of the 2009–14 regulatory control period').[127]

In the absence of specific detail in EnergyAustralia's January 2010 proposal, the AER considered that making the residual value adjustment and aligning the charge for the new replaced asset at the end of the year would be appropriate:[128]

> When a request to replace an asset is made the customer would continue to pay for the existing charge until the end of year t. The customer would then pay the new (indexed) asset charge from that point onwards, instead of the charge associated with the replaced asset.
>
> Where the replaced asset has a residual value, this would also be paid by the customer at the end of year t. A record of when the replacement asset is commissioned during year t would still be required in order to keep track of the asset life.

The AER notes that from a modelling perspective the ideal process would be to make the timing of customer charges and the residual value adjustment take place at time of the asset replacement but that this could result in more costly admistration.

In its March 2010 submission EnergyAustralia did not object to the draft decision approach in relation to the adjustment for the residual value of a replaced asset being

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126 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 27.

127 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, pp. 59, 62.

128 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 62.

made at the end of the year. It noted that it would be a relatively simple calculation to determine the residual value of a replaced asset at the end of the year and that this approach would result in a lower residual value than if it was calculated at the time the replacement was made during the year. This is because the customer continues to pay the fixed charge of the replaced asset until the end of the year. This approach would not result in double counting of the charge for assets constructed before 1 July 2009.[129]

However, EnergyAustralia stated that the AER's approach of aligning the timing of the charge for the new replaced asset with the residual value adjustment in the draft decision was unnecessary. Because the new asset is a post 30 June 2009 asset EnergyAustralia suggested that making such an adjustment to the normal timing of the billing process would add complexity. EnergyAustralia proposed that the timing of the annuity capital charge for the new replaced asset should be treated the same as the maintenance charge—that is, when the new asset is installed EnergyAustralia would charge the price of the capital and maintenance from the month that the asset is installed.

The AER considers EnergyAustralia's proposal on the timing of the charge for the new replaced asset to be reasonable as it avoids the need to adjust its normal billing system. Accordingly, for this final decision, some adjustments have been made to the description on the timing of customer charges and the residual value adjustment for assets replaced early at a customer's request in schedule 5 of table 4.1 (under the column titled 'Calculation of charge/price in years 3 to 5 of the 2009–14 regulatory control period').

Maintenance charges for pre 1 July 2009 assets

In its February 2010 draft decision the AER considered it appropriate to have separate capital and maintenance charges for pre 1 July 2009 assets.[130] As a consequence, the AER amended the control mechanism to accommodate the separation of capital and maintenance charges.

EnergyAustralia's March 2010 submission on the draft decision sought to clarify how this will operate in practice:[131]

> The maintenance charges paid by each customer will be based on a maintenance price list approved by the AER. These prices will be charged in customers' monthly bills against the inventory in service during that month. Prior to the commencement of the year EnergyAustralia will seek the AER's approval of those prices in the annual pricing proposal.
>
> The annual pricing proposal will also set out an indicative annual maintenance charge for each customer based on the inventory in service at the commencement of the year.

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129 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, pp. 27–28.

130 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 58.

131 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 27.

> …EnergyAustralia proposes the capital fixed charge combined with maintenance price would be the actual control mechanism for assets constructed before July 2009.

The AER notes that EnergyAustralia's proposed approach is consistent with the AER's draft decision to unbundle the capital and maintenance charges for pre 1 July 2009 assets. For this final decision, some adjustments have been made to the description on the operation of schedule 4 set out in table 4.1 (under the column titled 'Calculation of charge/price in years 3 to 5 of the 2009–14 regulatory control period') to clarify that the determination of maintenance charges for pre 1 July 2009 assets is based on the number of assets to be maintained during the year.

Table 4.1 sets out the AER's final decision on the control mechanism for EnergyAustralia's public lighting assets.

Table 4.1: Control mechanism for EnergyAustralia

Schedule	Description of charge/price in year 2 of the 2009–14 regulatory control period	Calculation of charge/price in years 3 to 5 of the 2009–14 regulatory control period
1. Capital charges for pre 1 July 2009 assets	A fixed charge per customer in the first year and indicative charges for following years based on forecast inflation and an X–factor for each customer to calculate the charges (expressed in nominal dollar terms). An X–factor is used to smooth the charges over the 2009–14 regulatory control period. The X–factor is based on that stated in the AER's final determination model.	$Charge_t = Charge_{t-1} \times (1 + \Delta CPI^{actual}) \times (1 - X)$ Where: t = time period in financial year 3, 4, 5 ΔCPI^{actual} = annual percentage change[a] X = smoothing X–factor for the customer based on that stated in the AER's final determination model The charge for each year is to be reduced by the return on and of the residual capital value already paid by the customer. This requires manually adjusting the RAB roll forward to account for the recovered RAB value and the approach is set out in schedule 5.
2. Capital prices for post 30 June 2009 assets	A fixed capital price per asset in each year of the 2009–14 regulatory control period (expressed in real 2009–10 dollar terms).	$Price_t = Price_t^{\$2009-10} \times CPI_{t-1}^{actual}$ Where: t = time period in financial year 3, 4, 5 CPI^{actual} = cumulative index[b]
3. Maintenance prices for all assets	A fixed maintenance price per asset in each year of the 2009–14 regulatory control period (expressed in real 2009–10 dollar terms).	$Price_t$ = Re-run the AER's final determination opex model and replace $\Delta CPI_{t-1}^{forecast}$ with $\Delta CPI_{t-1}^{actual}$ Where: t = time period in financial year 3, 4, 5 ΔCPI^{actual} = annual percentage change[b] $\Delta CPI^{forecast}$ = annual percentage change[c] This approach is required because of the way that EnergyAustralia has modelled the opex allowance. The cost build-up opex model uses inflation rates which are applied to specific cost categories and therefore if a formula approach using inflation rates at an aggregate level is applied it would result in an overestimate of the allowance.
4. Maintenance charges for pre 1 July 2009 assets	A fixed charge per customer in the first year and indicative charges for following years based on forecast inflation and inventories (expressed in nominal dollar terms).	The charge per customer is to be based on $Price_t$ (calculated in accordance with schedule 3) multiplied by the number of assets to be maintained during the year.

5. Residual value for early replacement of pre 1 July 2009 assets	A formula (as shown in appendix A) that allows EnergyAustralia and the customer to calculate the residual value of the replaced assets based on their remaining life, the number of assets being replaced and forecast inflation. The annual depreciation is calculated in the AER's final determination model. The remaining life of the assets is based on that stated in the AER's final determination model. Residual value = Annual depreciation$^{\$2008-09}$ × Remaining life$_t$ × No. of assets replaced$_t$ × (1 + ΔCPI^{forecast}) Where: t = time period in financial year 1 ΔCPI^{forecast} = annual percentage change[c]	A formula (as shown in appendix A) that allows EnergyAustralia and the customer to calculate the residual value of the replaced assets based on their remaining life, the number of assets being replaced and forecast/outturn inflation. The annual depreciation is calculated in the AER's final determination model. The remaining life of the assets is based on that stated in the AER's final determination model. Residual value = Annual depreciation$^{\$2008-09}$ × Remaining life$_t$ × No. of assets replaced$_t$ × CPI$_{t-1}^{actual}$ × (1 + ΔCPI^{forecast}) Where: t = time period in financial year 2, 3, 4, 5 CPI^{actual} = cumulative index[b] ΔCPI^{forecast} = annual percentage change[c] When a request to replace an asset is made the customer would continue to pay for the existing charge until the end of year t. The customer would pay the new asset charge from the month that the asset is installed. A record of when the replacement asset is commissioned during year t would be required in order to keep track of the asset life. Where the replaced asset has a residual value this would be paid by the customer at the end of year t, instead of at the time the asset is replaced during year t. The customer would not be required to pay for the charge associated with the replaced asset when the residual value is paid. The maintenance price would remain the same but would be reclassified from the replaced asset to the new asset, from the month that the asset is installed.

Note: The annual adjustment for the charge/price applies from years 3 to 5 of the 2009–14 regulatory control period. The AER has adjusted the year 2 (2010–11) charge/price for the outturn CPI of the previous year in the public lighting models—see calculation of CPI for 2009–10 at page 43 of this final decision.

(a) Annual percentage change in the ABS consumer price index all groups, weighted average of eight capital cities, consistent with using the method applied to standard control services. That is, based on the sum of four quarters from December in year t–2 to December in year t–1.

(b) A cumulative index from year zero to year t–1 based on the ABS consumer price index all groups, weighted average of eight capital cities, consistent with using the method applied to standard control services.

(c) Annual forecast inflation rate used during the 2009–14 regulatory control period is to be consistent with that used for standard control services. That is, 2.475 per cent.

4.3.3 Compliance mechanism

In its February 2010 draft decision the AER set out some adjustments to the compliance mechanism for EnergyAustralia as a result of providing further clarification on the control mechanism.[132]

In its March 2010 submission EnergyAustralia noted that the draft decision included a new element on reporting inventory information to customers every six months, showing the assets that have been installed and those that have been removed. EnergyAustralia stated that this seems to go beyond clarifying the April 2009 AER decision in respect of compliance with the control mechanism.[133]

The AER notes that this aspect of demonstrating compliance with the control mechanism in the draft decision is not a new element and refers EnergyAustralia to page 399 of the April 2009 AER decision:[134]

> The AER also requires the NSW DNSPs to provide their public lighting customers with an inventory list on at least a six monthly basis. This list should contain assets that have been added and removed from both the pre 1 July 2009 and post 30 June 2009 asset bases. The AER considers that this information could form part of a customer's bill, thereby allowing customers to verify the calculation of their charges.

The AER also notes that under the section 14 of the NSW public lighting code, customers are to be provided with a list of standard luminaires and customers must be consulted when a new light is to be installed or an existing one replaced. The AER requires EnergyAustralia to advise customers three months in advance of the need for asset replacement so that the customer is able to choose the replacement asset from the list of standard luminaires, and is made aware of the price associated with its replacement decision.[135]

The AER confirms the compliance mechanism set out in its draft decision. Further, the AER requires EnergyAustralia to provide its customers with the indicative annual charges for pre 1 July 2009 assets, separated into capital and maintenance charges, upon approval of the pricing proposal.

4.3.4 Price schedules

The AER has used the public lighting models submitted by EnergyAustralia and made relevant changes to inputs and assumptions as determined in this final decision, including those related to the opex, in order to calculate the charges/prices for the 2009–14 regulatory control period.

As outlined in its February 2010 draft decision the AER considered that there would be an under-recovery of 2009–10 charges arising from a number of factors. These include the effect of the higher WACC determined by the Tribunal for standard

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132 AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 66.

133 EnergyAustralia, *Submission responding to the AER's February 2010 decision – public lighting prices 2010 to 2014*, 11 March 2010, p. 28.

134 AER, *Final decision, NSW distribution determination, 2009–10 to 2013–14*, 28 April 2009, p. 399.

135 AER, *Final decision, NSW distribution determination, 2009–10 to 2013–14*, 28 April 2009, p. 377.

control services, which has been applied to public lighting services, and a higher RAB for pre 1 July 2009 assets. The AER is required to ensure that the under-recovery of charges is recovered under a net present value neutral mechanism.[136]

Following the lodgement of its March 2010 submission, EnergyAustralia submitted to the AER its calculations for the under-recovery of 2009–10 charges (around $11.4 million). The AER has reviewed EnergyAustralia's calculations of the under-recovery of 2009–10 charges and considers these calculations to be consistent with the amended prices in the public lighting models.

The AER notes SSROC's submission on the need for smoothing price increases. The AER has decided to smooth the under-recovery of 2009–10 charges evenly over the remaining years of the 2009–14 regulatory period as part of the capital charges for pre 1 July 2009 assets, having regard for ensuring net present value neutrality. This process was undertaken at the customer level to ensure that each customer only incurs the under-recovery associated with its own charges and that there is no cross-subsidy between customers.

Confidential appendices B, C and D set out the final decision total charges for pre 1 July 2009 assets by customer over the 2009–14 regulatory control period, separated into capital and maintenance charges respectively.

Table 4.2 shows the final decision indicative charges (including a breakdown of the 2009–10 under-recovery charges) for pre 1 July 2009 assets over the 2009–14 regulatory control period at an aggregate level, and compares them with those proposed in EnergyAustralia's March 2010 submission and in the February 2010 AER draft decision.

This final decision (excluding the under-recovery of 2009–10 charges) results in a reduction of $19.5 million (or 9.4 per cent) to EnergyAustralia's March 2010 submission for the total charges associated with pre 1 July 2009 assets and is a reduction of $1.2 million (or 0.7 per cent) to the February 2010 AER draft decision. The reduction is due to the lower maintenance charges approved in this final decision.

When the under-recovery of 2009–10 charges is smoothed over the remaining years of the 2009–14 regulatory control period (2010–11 to 2013–14) the final decision increases approved total charges for pre 1 July 2009 assets from $148.3 million to $163.7 million (by $15.4 million or 8.2 per cent).[137]

The capital prices for post 30 June 2009 assets are set out in appendix E.

The maintenance prices for all assets subject to maintenance programs are set out in appendix F.

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[136] AER, *Draft decision, EnergyAustralia draft distribution determination, 2009–10 to 2013–14, Alternative control (public lighting) services*, 23 February 2010, p. 58.

[137] Based on a comparison of total charges for 2010–11 to 2013–14 (see AER final decision (without under-recovery of 2009–10 charges) and AER final decision (with under-recovery of 2009–10 charges)).

Appendix G shows the final decision capital prices for post 30 June 2009 assets and maintenance prices by asset component and compares them with those proposed in EnergyAustralia's March 2010 submission and in the February 2010 AER draft decision. For the annuity capital prices, when compared to EnergyAustralia's March 2010 submission, the final decision results in:

- reductions ranging from 1 per cent to 31 per cent for brackets (on average 16 per cent reduction)
- reductions ranging from 1 per cent to 31 per cent for luminaires (on average 4 per cent reduction)
- minimal changes to supports and connections (less than 1 per cent reduction).

For the maintenance prices of assets, when compared to EnergyAustralia's March2010 submission, the final decision results in reductions ranging from 1 per cent to 53 per cent for the majority of lamp types (on average 25 per cent reduction) and around 1 per cent for connections.

However, for four lamp types (with an inventory of 154 lamps) the final decision results in increases ranging from 16 per cent to 100 per cent (on average 47 per cent increase) due to changes to the failure rate assumptions for multi-lamp configurations. Five lamp types, which are also showing price increases for the final decision, are no longer in service and therefore not subject to maintenance by EnergyAustralia.

Table 4.2: Indicative charges for pre 1 July 2009 assets ($m, nominal)

	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	Total
February 2010 AER draft decision (without under-recovery of 2009–10 charges)							
Total	n/a	38.28	37.91	37.56	37.40	37.25	188.40
Capital	n/a	24.33	23.74	23.18	22.64	22.11	116.00
Maintenance	n/a	13.95	14.17	14.38	14.76	15.14	72.40
March 2010 EnergyAustralia submission (without under-recovery of 2009–10 charges)							
Total	n/a	41.63	41.43	41.23	41.20	41.16	206.65
Capital	n/a	24.33	23.74	23.18	22.64	22.11	116.00
Maintenance	n/a	17.30	17.69	18.05	18.56	19.05	90.65
AER final decision (without under-recovery of 2009–10 charges)							
Total	29.17[a]	38.88	38.06	37.29	36.73	36.21	187.17
Capital[b]	21.02[a]	25.17	24.14	23.17	22.23	21.34	116.05
Maintenance	8.15[a]	13.71	13.92	14.12	14.50	14.87	71.12
Under-recovery of 2009–10 charges							
Total		11.36	n/a	n/a	n/a	n/a	n/a
Capital (pre 1 July 2009 assets)		10.41	n/a	n/a	n/a	n/a	n/a
Capital (post 30 June 2009 assets)		0.02	n/a	n/a	n/a	n/a	n/a
Maintenance (pre 1 July 2009 assets)		0.85	n/a	n/a	n/a	n/a	n/a
Maintenance (post 30 June 2009 assets)		0.08	n/a	n/a	n/a	n/a	n/a
AER final decision (with under-recovery of 2009–10 charges)							
Total	29.17[a]	26.44[d]	39.63	40.38	41.34	42.31	190.10
Capital[c]	21.02[a]	14.73[d]	25.71	26.26	26.84	27.44	120.98
Maintenance	8.15[a]	11.71[d]	13.92	14.12	14.50	14.87	69.12

(a) Actuals recovered by EnergyAustralia based on the prices approved by IPART.
(b) These smoothed capital charges are different to those in the draft decision due to the AER updating the inflation forecast for 2009–10 with outturn CPI in the pre 1 July 2009 assets capital charge model.
(c) The 2010–11 to 2013–14 smoothed capital charges include the under-recovery of 2009–10 charges associated with pre 1 July 2009 and post 30 June 2009 assets for capital and maintenance charges.
(d) The 2009–10 charges for pre 1 July 2009 assets are currently recovered by EnergyAustralia, which are based on the charges established in the April 2009 AER decision.

4.4 Conclusion

The AER has considered other issues on the draft decision raised in submissions and concludes as follows:

- Adjustments to modelling assumptions in the annuity capital charge model:

- for labour hours associated with the construction of a public light the AER has confirmed its draft decision of 2.08 hours for traffic routes and 1.39 hours for non-traffic routes

- for the proportion of labour assumed for constructing a public light the AER has amended the assumed labour cost proportion of total capex from 23 per cent to 40 per cent.

- The AER has included further clarification on the implementation of the control mechanism such as the calculation of the CPI, the timing of charges arising from the early replacement of assets at the customer's request and the adjustment to the RAB for residual asset values.

- The AER has confirmed the compliance mechanism set out in its draft decision.

The AER has also outlined the updated schedule of charges and prices for EnergyAustralia's pre 1 July 2009 and post 30 June 2009 public lighting assets, which takes into account the amount of under-recovery for 2009–10 charges to be recovered over the remaining 2009–14 regulatory control period.

4.5 AER decision

In accordance with clause 6.12.1(12) of the transitional chapter 6 rules, the control mechanism for EnergyAustralia's alternative control (public lighting) services is:

- a schedule of fixed charges in the first year of the 2009–14 regulatory control period for assets constructed before 1 July 2009 and a schedule of fixed prices in the first year of the 2009–14 regulatory control period for assets constructed after 30 June 2009

- a price path for the remaining years of the 2009–14 regulatory control period.

Details on the control mechanism for the schedules in respect of EnergyAustralia's public lighting assets are set out in table 4.1 of this final decision.

In accordance with clause 6.12.1(12) of the transitional chapter 6 rules, prior to EnergyAustralia introducing a new public lighting asset to its customers, the efficient capital and maintenance charges for the asset must be approved by the AER, in accordance with the process specified in section 17.8.2 of the April 2009 AER decision. This process is set out as follows:

- The tariff that applies to a new public lighting asset introduced by EnergyAustralia during the 2009–2014 regulatory control period will be determined by the AER. The AER's determination will be made upon application by EnergyAustralia to the AER for approval of the efficient capital and maintenance charges associated with the new asset. Upon receipt of such application, the AER will decide upon a timetable for the consideration of the application. The timetable will provide for consultation with interested parties on the tariff that is to apply to the new asset. The AER notes that a period of up to six months may be required to properly assess the tariffs applicable to a new asset.

In accordance with clause 6.12.1(13) of the transitional chapter 6 rules, EnergyAustralia's compliance with the control mechanism for alternative control (public lighting) services is to be demonstrated through annual approval of changes in the schedules of prices. The details of the process for demonstrating compliance with the annual schedule of charges and prices is specified in section 6.5.6 of the February 2010 AER draft decision. This process is set out as follows:

- Compliance with the control mechanism for assets constructed before 1 July 2009 is to be demonstrated by EnergyAustralia providing to the AER, as part of its pricing proposal, the total annual charge it proposes to levy on each of its public lighting customers over the next regulatory year, including relevant explanation of adjustments made. The total annual charge should show the separate capital and maintenance charges, with relevant explanation of adjustments to the charges/prices set out in spreadsheet models. This should include information such as the residual value calculations arising from replacing assets at a customer's request, the remaining asset lives and asset inventories. The pricing proposal should also include revenues collected from each public lighting customer in the previous regulatory year. EnergyAustralia is to provide its customers with the indicative annual charges, separated into capital and maintenance charges, upon approval of the pricing proposal.

- Compliance with the control mechanism for assets constructed after 30 June 2009 is to be demonstrated by EnergyAustralia publishing indexed capital and maintenance prices for the relevant regulatory year (based on those set out in the AER's April 2009 decision) at the same time as its general network tariffs are published. EnergyAustralia, as part of its pricing proposal, is to provide the AER with a relevant explanation of adjustments to the prices set out in spreadsheet models. EnergyAustralia must also provide its public lighting customers with an inventory list on at least a six monthly basis. This list should contain assets that have been added and removed from both the pre 1 July 2009 and post 30 June 2009 asset registers. This information could form part of the customer's bill, thereby allowing customers to verify the calculation of their charges.

Appendix A: Residual value for pre 1 July 2009 assets ($2008–09)

Asset type	"N/A" denotes no residual value
Bracket - 0.5	= $10.1034 x qty of assets x remaining life
Bracket - 0.6	= $10.1034 x qty of assets x remaining life
Bracket - 1.0	= $8.944 x qty of assets x remaining life
Bracket - 1.2	= $8.944 x qty of assets x remaining life
Bracket - 1.5	= $81.8207 x qty of assets x remaining life
Bracket - 2.0	= $16.2316 x qty of assets x remaining life
Bracket - 2.5	= $16.2316 x qty of assets x remaining life
Bracket - 3.0	= $38.0947 x qty of assets x remaining life
Bracket - 3.5	= $41.4073 x qty of assets x remaining life
Bracket - 4.0	= $41.4073 x qty of assets x remaining life
Bracket - 4.5	= $50.6825 x qty of assets x remaining life
Bracket - 5.0	= $47.7012 x qty of assets x remaining life
Bracket - 6.0	= $74.2018 x qty of assets x remaining life
Bracket - 6.5	= $74.2018 x qty of assets x remaining life
Bracket - 7.0	= $74.2018 x qty of assets x remaining life
Bracket - 8.0	= $74.2018 x qty of assets x remaining life
Luminaire - 1x40W TF	= $14.0102 x qty of assets x remaining life
Luminaire - 1x80W TF	= $10.8764 x qty of assets x remaining life
Luminaire - 1000W MBF	= $40.0292 x qty of assets x remaining life
Luminaire - 1000W SON	= $224.6816 x qty of assets x remaining life
Luminaire - 1000W SON FLOODLIGHT	= $116.2252 x qty of assets x remaining life
Luminaire - 1000W/1500W MBI FLOODLIGHT	= $169.9486 x qty of assets x remaining life
Luminaire - 100W MBI	= $34.2355 x qty of assets x remaining life
Luminaire - 100W MBI FLOODLIGHT	= $40.0292 x qty of assets x remaining life
Luminaire - 100W SON	= $29.1507 x qty of assets x remaining life
Luminaire - 100W SON - PARKVILLE	= $166.4373 x qty of assets x remaining life
Luminaire - 100W SON FLOODLIGHT	= $73.5625 x qty of assets x remaining life
Luminaire - 100W SON -PLAIN	= $29.1507 x qty of assets x remaining life
Luminaire - 125W MBF	= $14.0785 x qty of assets x remaining life
Luminaire - 125W MBF - BOURKE HILL	= $113.065 x qty of assets x remaining life
Luminaire - 125W MBF - HYDE PARK	= $79.005 x qty of assets x remaining life
Luminaire - 125W MBF - NOSTALGIA	= $115.9403 x qty of assets x remaining life
Luminaire - 125W MBF - PARKVILLE	= $149.0661 x qty of assets x remaining life
Luminaire - 125W MBF BOLLARD	= $66.2516 x qty of assets x remaining life
Luminaire - 125W MBF -PLAIN	= $14.0785 x qty of assets x remaining life
Luminaire - 125W/250W MBF FLOODLIGHT	= $36.158 x qty of assets x remaining life
Luminaire - 135W SOX	= $43.8917 x qty of assets x remaining life
Luminaire - 150W SON	= $28.1404 x qty of assets x remaining life
Luminaire - 150W SON - HYDE PARK	= $79.005 x qty of assets x remaining life
Luminaire - 150W SON - PARKVILLE	= $166.4373 x qty of assets x remaining life

Luminaire - 150W SON - PARKWAY 1	= $53.8294 x qty of assets x remaining life
Luminaire - 150W SON FLOODLIGHT	= $73.5625 x qty of assets x remaining life
Luminaire - 150W SON GEC 'BOSTON 3'	= $149.0661 x qty of assets x remaining life
Luminaire - 150W/250W MBI FLOODLIGHT	N/A
Luminaire - 180W SOX	= $52.67 x qty of assets x remaining life
Luminaire - 2x14W TF - T5 PIERLITE M	= $34.6993 x qty of assets x remaining life
Luminaire - 2x175W MBF - PARKWAY 2	= $188.9098 x qty of assets x remaining life
Luminaire - 2x20W TF	= $13.8814 x qty of assets x remaining life
Luminaire - 2x20W TF - WAVERLEY	= $13.8814 x qty of assets x remaining life
Luminaire - 2x250W SON FLOODLIGHT	= $87.7834 x qty of assets x remaining life
Luminaire - 2x26W TF MACQUARIE DEC.	= $151.6897 x qty of assets x remaining life
Luminaire - 2x400W MBF - PARKWAY 2	= $188.9098 x qty of assets x remaining life
Luminaire - 2x400W MBI FLOODLIGHT	= $192.2456 x qty of assets x remaining life
Luminaire - 2x400W SON FLOODLIGHT	= $210.1534 x qty of assets x remaining life
Luminaire - 2x40W TF	= $35.1134 x qty of assets x remaining life
Luminaire - 2x70W SON - BOURKE HILL	N/A
Luminaire - 2x80W MBF - BOURKE HILL	= $95.2367 x qty of assets x remaining life
Luminaire - 250W MBF	= $26.8319 x qty of assets x remaining life
Luminaire - 250W MBF - PARKVILLE	= $153.7965 x qty of assets x remaining life
Luminaire - 250W MBF - PARKWAY 1	= $53.8294 x qty of assets x remaining life
Luminaire - 250W MBI - SMARTPOLE	N/A
Luminaire - 250W SON	= $26.2091 x qty of assets x remaining life
Luminaire - 250W SON - PARKVILLE	= $182.5894 x qty of assets x remaining life
Luminaire - 250W SON - PARKWAY 1	= $53.8294 x qty of assets x remaining life
Luminaire - 250W SON FLOODLIGHT	= $65.1833 x qty of assets x remaining life
Luminaire - 250W SON GEC 'BOSTON 3'	= $152.5675 x qty of assets x remaining life
Support - 2ND LIGHT NON-TRL	N/A
Support - 2ND LIGHT TRL	N/A
Luminaire - 2X14W TF - T5 PIERLIGHT	= $22.5113 x qty of assets x remaining life
Luminaire - 3x400W MBF - PARKWAY 3	= $188.9098 x qty of assets x remaining life
Luminaire - 4x1000W MBF	N/A
Luminaire - 4x20W TF	= $70.0863 x qty of assets x remaining life
Luminaire - 4x20W TF - WAVERLEY	= $70.0863 x qty of assets x remaining life
Luminaire - 4x250W SON	= $103.2333 x qty of assets x remaining life
Luminaire - 4x40W TF	= $87.7834 x qty of assets x remaining life
Luminaire - 4x40W TF - WAVERLEY	= $79.7705 x qty of assets x remaining life
Luminaire - 4x600W SON	= $175.5668 x qty of assets x remaining life
Luminaire - 400W MBF	= $37.8032 x qty of assets x remaining life
Luminaire - 400W MBF - PARKWAY 1	= $87.7834 x qty of assets x remaining life
Luminaire - 400W MBF FLOODLIGHT	= $100.0731 x qty of assets x remaining life
Luminaire - 400W MBI - SMARTPOLE	N/A
Luminaire - 400W MBI FLOODLIGHT	= $66.7154 x qty of assets x remaining life
Luminaire - 400W SON	= $37.881 x qty of assets x remaining life
Luminaire - 400W SON - PARKWAY 1	= $53.8294 x qty of assets x remaining life
Luminaire - 400W SON FLOODLIGHT	= $79.9574 x qty of assets x remaining life

Luminaire - 40W SOX	= $14.0102 x qty of assets x remaining life
Luminaire - 42W MBF SYLVANIA SUB ECO	= $28.571 x qty of assets x remaining life
Luminaire - 500W MBI FLOODLIGHT	= $94.1038 x qty of assets x remaining life
Luminaire - 50W MBF	= $14.0785 x qty of assets x remaining life
Luminaire - 50W MBF - BOURKE HILL	= $14.0785 x qty of assets x remaining life
Luminaire - 50W MBF - NOSTALGIA	= $95.2367 x qty of assets x remaining life
Luminaire - 50W MBF - PLAIN	= $93.226 x qty of assets x remaining life
Luminaire - 50W MBF BOLLARD	= $50.9144 x qty of assets x remaining life
Luminaire - 50W SON	= $13.5816 x qty of assets x remaining life
Luminaire - 50W SON - BOURKE HILL	N/A
Luminaire - 50W SON - NOSTALGIA	= $35.6102 x qty of assets x remaining life
Luminaire - 60W SOX	N/A
Luminaire - 700W MBF	= $43.5604 x qty of assets x remaining life
Luminaire - 70W MBI	= $25.106 x qty of assets x remaining life
Luminaire - 70W MBI - MACQUARIE DEC.	= $170.8265 x qty of assets x remaining life
Luminaire - 70W SON	= $13.7472 x qty of assets x remaining life
Luminaire - 70W SON - BOURKE HILL	= $109.5537 x qty of assets x remaining life
Luminaire - 70W SON - GEC BOSTON 2	= $132.5032 x qty of assets x remaining life
Luminaire - 70W SON - NOSTALGIA	= $100.4242 x qty of assets x remaining life
Luminaire - 70W SON - PARKVILLE	= $132.5032 x qty of assets x remaining life
Luminaire - 70W SON - REGAL/FLINDERS	= $197.5126 x qty of assets x remaining life
Luminaire - 70W SON BOLLARD	= $70.5778 x qty of assets x remaining life
Luminaire - 70W SON FLOODLIGHT	= $28.0643 x qty of assets x remaining life
Luminaire - 70W SON -PLAIN	= $13.7472 x qty of assets x remaining life
Luminaire - 750W MBI FLOODLIGHT	= $94.1038 x qty of assets x remaining life
Luminaire - 80W MBF	= $13.0184 x qty of assets x remaining life
Luminaire - 80W MBF - PLAIN	= $13.0184 x qty of assets x remaining life
Luminaire - 80W MBF - BEGA+CURVE BRA	= $171.8799 x qty of assets x remaining life
Luminaire - 80W MBF - BOURKE HILL	= 466.8909 x qty of assets x remaining life
Luminaire - 80W MBF - GEC BOSTON 2	= 4132.5032 x qty of assets x remaining life
Luminaire - 80W MBF - NOSTALGIA	= 493.226 x qty of assets x remaining life
Luminaire - 80W MBF - REGAL/FLINDERS	= $189.6121 x qty of assets x remaining life
Luminaire - 80W MBF - SYLVANIA SUBUR	= $13.2553 x qty of assets x remaining life
Luminaire - 80W MBF BOLLARD	= $50.9144 x qty of assets x remaining life
Luminaire - 80W MBF TOORAK	= 482.8145 x qty of assets x remaining life
Luminaire - 90W SOX	= $70.2267 x qty of assets x remaining life
Support - BOLLARD	= $41.1328 x qty of assets x remaining life
Bracket - C4	= 4105.3401 x qty of assets x remaining life
Support - COLUMN 10.5M-13.5M	= $88.0673 x qty of assets x remaining life
Support - COLUMN 14M-15M	= $70.2267 x qty of assets x remaining life
Support - COLUMN 2.5M-3.5M	= $45.0511 x qty of assets x remaining life
Support - COLUMN 4-6.5M ORION WATE	= $60.1943 x qty of assets x remaining life
Support - COLUMN 4M-6.5M	= $84.6128 x qty of assets x remaining life
Support - COLUMN 7M-10M	= $78.6028 x qty of assets x remaining life
Support - DECORATIVE COLUMN	= $100.3239 x qty of assets x remaining life

Support - DEDICATED SUPPORT & COND	= $55.8406 x qty of assets x remaining life
Support - HYDE PARK STANDARD	= $157.3003 x qty of assets x remaining life
Lamp - INC1x100	N/A
Lamp - INC1x1000	N/A
Lamp - INC1x1440	N/A
Lamp - INC1x150	N/A
Lamp - INC1x200	N/A
Lamp - INC1x300	N/A
Lamp - INC1x40	N/A
Lamp - INC1x500	N/A
Lamp - INC1x60	N/A
Lamp - INC1x75	N/A
Lamp - INC3x100	N/A
Luminaire - INCANDESCENT	= $5.267 x qty of assets x remaining life
Support - MACQUARIE STANDARD	= $49.0262 x qty of assets x remaining life
Support - MAST 15.5M-30M	= $80.2591 x qty of assets x remaining life
Support - MAST 23M	= $80.2591 x qty of assets x remaining life
Support - MAST 25M	= $80.2591 x qty of assets x remaining life
Lamp - MBF1x1000	N/A
Lamp - MBF1x125	N/A
Lamp - MBF1x250	N/A
Lamp - MBF1x400	N/A
Lamp - MBF1x42	N/A
Lamp - MBF1x50	N/A
Lamp - MBF1x500	N/A
Lamp - MBF1x700	N/A
Lamp - MBF1x80	N/A
Lamp - MBF1x800	N/A
Lamp - MBF2x125	N/A
Lamp - MBF2x160	N/A
Lamp - MBF2x175	N/A
Lamp - MBF2x400	N/A
Lamp - MBF2x80	N/A
Lamp - MBF3x160	N/A
Lamp - MBF3x250	N/A
Lamp - MBF3x400	N/A
Lamp - MBF3x80	N/A
Lamp - MBF4x1000	N/A
Lamp - MBF4x80	N/A
Lamp - MBF6x125	N/A
Lamp - MBF6x160	N/A
Lamp - MBF9x160	N/A
Lamp - MBI1x100	N/A
Lamp - MBI1x1000	N/A
Lamp - MBI1x150	N/A

Lamp - MBI1x1500	N/A
Lamp - MBI1x250	N/A
Lamp - MBI1x3745	N/A
Lamp - MBI1x400	N/A
Lamp - MBI1x500	N/A
Lamp - MBI1x70	N/A
Lamp - MBI1x750	N/A
Lamp - MBI2x400	N/A
Lamp - MBI4x150	N/A
Bracket - NIL	N/A
Connection - O/U	= $15.7745 x qty of assets x remaining life
Connection - OH	N/A
Connection - OH2	N/A
Connection - OHS	N/A
Support - ORION DOUBLE ARM	= $33.2933 x qty of assets x remaining life
Support - POLO 10.5M DECORATIVE 2M	= $66.2516 x qty of assets x remaining life
Support - POLO 4.5M DECORATIVE 1.2	= $66.2516 x qty of assets x remaining life
Support - PRIVATE	N/A
Support - ROCKS STANDARD	= $68.7285 x qty of assets x remaining life
Support - SMARTPOLE A	N/A
Support - SMARTPOLE AB	N/A
Support - SMARTPOLE B	N/A
Support - SMARTPOLE C	N/A
Bracket - SMARTPOLE DOUBLE	N/A
Bracket - SMARTPOLE SINGLE LONG	N/A
Bracket - SMARTPOLE SINGLE SHORT	N/A
Lamp - SON1x100	N/A
Lamp - SON1x1000	N/A
Lamp - SON1x120	N/A
Lamp - SON1x150	N/A
Lamp - SON1x220	N/A
Lamp - SON1x250	N/A
Lamp - SON1x310	N/A
Lamp - SON1x360	N/A
Lamp - SON1x400	N/A
Lamp - SON1x50	N/A
Lamp - SON1x70	N/A
Lamp - SON2x250	N/A
Lamp - SON2x400	N/A
Lamp - SON2x70	N/A
Lamp - SON3x70	N/A
Lamp - SON4x250	N/A
Lamp - SON4x600	N/A
Lamp - SON4x70	N/A
Lamp - SON8x70	N/A

Lamp - SOX1x135	N/A
Lamp - SOX1x150	N/A
Lamp - SOX1x180	N/A
Lamp - SOX1x90	N/A
Bracket - SUSPENDED	= $19.8755 x qty of assets x remaining life
Bracket - T1	= $26.9147 x qty of assets x remaining life
Bracket - T2	= $46.7074 x qty of assets x remaining life
Bracket - T2A	= $46.7074 x qty of assets x remaining life
Bracket - T3	= $47.7012 x qty of assets x remaining life
Bracket - T3A	= $47.7012 x qty of assets x remaining life
Bracket - T4	= $44.7198 x qty of assets x remaining life
Bracket - T5	= $44.7198 x qty of assets x remaining life
Bracket - T6	= $74.2018 x qty of assets x remaining life
Bracket - T7	= $65.7547 x qty of assets x remaining life
Lamp - TF1x16	N/A
Lamp - TF1x176	N/A
Lamp - TF1x20	N/A
Lamp - TF1x236	N/A
Lamp - TF1x26	N/A
Lamp - TF1x40	N/A
Lamp - TF1x60	N/A
Lamp - TF1x80	N/A
Lamp - TF2x14 T5	N/A
Lamp - TF2x20	N/A
Lamp - TF2x26	N/A
Lamp - TF2x40	N/A
Lamp - TF2x58	N/A
Lamp - TF2x80	N/A
Lamp - TF3x20	N/A
Lamp - TF3x40	N/A
Lamp - TF3x80	N/A
Lamp - TF4x20	N/A
Lamp - TF4x40	N/A
Lamp - TF4x80	N/A
Lamp - TF5x58	N/A
Lamp - TF5x65	N/A
Lamp - TF5x80	N/A
Lamp - TF6x20	N/A
Lamp - TF6x36	N/A
Lamp - TF6x80	N/A
Luminaire - TH FLOODLIGHT	= $185.7496 x qty of assets x remaining life
Lamp - TH1x1000	N/A
Lamp - TH1x1500	N/A
Lamp - TH1x400	N/A
Lamp - TH1x500	N/A

Lamp - TH1x750	N/A
Connection - UG2	N/A
Connection - UGORDA	N/A
Connection - UGR1	= $21.8912 x qty of assets x remaining life
Connection - UGR2	= $15.7745 x qty of assets x remaining life
Connection - UGS	= $15.7745 x qty of assets x remaining life
Connection - UG-SP	N/A
Support - UNKNOWN	N/A
Support - WALL	N/A
Support - WOOD POLE NON-TRL	N/A
Support - WOOD POLE TRL	N/A
Connection - EMPTY	N/A
Lamp - EMPTY	N/A
Luminaire - EMPTY	N/A
Support - EMPTY	N/A
Lamp - MBF1x160	N/A
Bracket - PRIVATE	N/A
Luminaire - PRIVATE	N/A
Support - SUSPENDED	N/A

Appendix B: Total customer charges for pre 1 July 2009 assets ($'000 nominal)

Confidential

Appendix C: Capital charges for pre 1 July 2009 assets ($'000 nominal)

Confidential

Appendix D: Maintenance charges for pre 1 July 2009 assets ($'000 nominal)

Confidential

Appendix E: Capital prices for post 30 June 2009 assets ($2009–10)

Asset type	FY10	FY11	FY12	FY13	FY14
Bracket - 0.5	$17.09	$17.63	$18.36	$19.25	$20.24
Bracket - 0.6	$17.09	$17.63	$18.36	$19.25	$20.24
Bracket - 1.0	$16.31	$16.83	$17.53	$18.38	$19.32
Bracket - 1.2	$16.31	$16.83	$17.53	$18.38	$19.32
Bracket - 1.5	$65.09	$67.14	$69.93	$73.32	$77.07
Bracket - 2.0	$21.19	$21.86	$22.77	$23.87	$25.09
Bracket - 2.5	$26.32	$27.15	$28.28	$29.65	$31.16
Bracket - 3.0	$40.95	$42.24	$44.00	$46.13	$48.49
Bracket - 3.5	$43.17	$44.53	$46.38	$48.63	$51.11
Bracket - 4.0	$43.17	$44.53	$46.38	$48.63	$51.11
Bracket - 4.5	$49.38	$50.93	$53.05	$55.62	$58.46
Bracket - 5.0	$47.38	$48.88	$50.90	$53.37	$56.10
Bracket - 6.0	$65.12	$67.17	$69.96	$73.35	$77.10
Bracket - 6.5	$65.12	$67.17	$69.96	$73.35	$77.10
Bracket - 7.0	$65.12	$67.17	$69.96	$73.35	$77.10
Bracket - 8.0	$65.12	$67.17	$69.96	$73.35	$77.10
Luminaire - 1x40W TF	$12.45	$12.84	$13.37	$14.02	$14.74
Luminaire - 1x80W TF	$9.97	$10.28	$10.71	$11.23	$11.80
Luminaire - 1000W MBF	$33.72	$34.79	$36.23	$37.99	$39.93
Luminaire - 1000W SON	$179.90	$185.58	$193.28	$202.66	$213.01
Luminaire - 1000W SON FLOODLIGHT	$94.04	$97.01	$101.03	$105.94	$111.35
Luminaire - 1000W/1500W MBI FLOODLIGHT	$136.57	$140.88	$146.73	$153.85	$161.71
Luminaire - 100W MBI	$29.13	$30.05	$31.30	$32.82	$34.50
Luminaire - 100W MBI FLOODLIGHT	$33.72	$34.79	$36.23	$37.99	$39.93
Luminaire - 100W SON	$25.11	$25.90	$26.98	$28.29	$29.73
Luminaire - 100W SON - PARKVILLE	$133.79	$138.01	$143.74	$150.72	$158.42
Luminaire - 100W SON FLOODLIGHT	$60.27	$62.17	$64.75	$67.89	$71.36
Luminaire - 100W SON -PLAIN	$25.11	$25.90	$26.98	$28.29	$29.73
Luminaire - 125W MBF	$13.18	$13.59	$14.16	$14.84	$15.60
Luminaire - 125W MBF - BOURKE HILL	$91.54	$94.43	$98.35	$103.12	$108.39
Luminaire - 125W MBF - HYDE PARK	$64.58	$66.61	$69.38	$72.75	$76.46
Luminaire - 125W MBF - NOSTALGIA	$93.82	$96.78	$100.79	$105.68	$111.08
Luminaire - 125W MBF - PARKVILLE	$120.04	$123.83	$128.96	$135.23	$142.13
Luminaire - 125W MBF BOLLARD	$54.48	$56.20	$58.53	$61.37	$64.51
Luminaire - 125W MBF -PLAIN	$13.18	$13.59	$14.16	$14.84	$15.60
Luminaire - 125W/250W MBF FLOODLIGHT	$30.66	$31.62	$32.94	$34.53	$36.30
Luminaire - 135W SOX	$36.78	$37.94	$39.51	$41.43	$43.55
Luminaire - 150W SON	$24.31	$25.08	$26.12	$27.38	$28.78
Luminaire - 150W SON - HYDE PARK	$64.58	$66.61	$69.38	$72.75	$76.46
Luminaire - 150W SON - PARKVILLE	$133.79	$138.01	$143.74	$150.72	$158.42
Luminaire - 150W SON - PARKWAY 1	$44.65	$46.05	$47.96	$50.29	$52.86
Luminaire - 150W SON FLOODLIGHT	$2.03	$2.10	$2.18	$2.29	$2.41
Luminaire - 150W SON GEC 'BOSTON 3'	$120.04	$123.83	$128.96	$135.23	$142.13
Luminaire - 150W/250W MBI FLOODLIGHT	$80.42	$82.96	$86.40	$90.59	$95.22
Luminaire - 180W SOX	$43.73	$45.11	$46.98	$49.26	$51.78
Luminaire - 2x14W TF - T5 PIERLITE M	$28.83	$29.74	$30.97	$32.47	$34.13
Luminaire - 2x175W MBF - PARKWAY 2	$151.58	$156.37	$162.85	$170.76	$179.48

Luminaire - 2x20W TF	$12.35	$12.74	$13.26	$13.91	$14.62
Luminaire - 2x20W TF - WAVERLEY	$12.35	$12.74	$13.26	$13.91	$14.62
Luminaire - 2x250W SON FLOODLIGHT	$71.52	$73.78	$76.84	$80.57	$84.69
Luminaire - 2x26W TF MACQUARIE DEC.	$121.44	$125.28	$130.47	$136.81	$143.79
Luminaire - 2x400W MBF - PARKWAY 2	$151.58	$156.37	$162.85	$170.76	$179.48
Luminaire - 2x400W MBI FLOODLIGHT	$154.22	$159.09	$165.69	$173.73	$182.61
Luminaire - 2x400W SON FLOODLIGHT	$168.40	$173.72	$180.92	$189.70	$199.39
Luminaire - 2x40W TF	$29.15	$30.08	$31.32	$32.84	$34.52
Luminaire - 2x70W SON - BOURKE HILL	$171.81	$177.24	$184.59	$193.55	$203.44
Luminaire - 2x80W MBF - BOURKE HILL	$76.75	$79.17	$82.46	$86.46	$90.88
Luminaire - 250W MBF	$23.27	$24.01	$25.00	$26.22	$27.56
Luminaire - 250W MBF - PARKVILLE	$123.78	$127.69	$132.99	$139.44	$146.57
Luminaire - 250W MBF - PARKWAY 1	$44.65	$46.05	$47.96	$50.29	$52.86
Luminaire - 250W MBI - SMARTPOLE	$2.03	$2.10	$2.18	$2.29	$2.41
Luminaire - 250W SON	$22.78	$23.50	$24.47	$25.66	$26.97
Luminaire - 250W SON - PARKVILLE	$146.58	$151.21	$157.48	$165.12	$173.56
Luminaire - 250W SON - PARKWAY 1	$44.65	$46.05	$47.96	$50.29	$52.86
Luminaire - 250W SON FLOODLIGHT	$53.63	$55.33	$57.62	$60.42	$63.51
Luminaire - 250W SON GEC 'BOSTON 3'	$122.81	$126.69	$131.94	$138.35	$145.41
Support - 2ND LIGHT NON-TRL	$0.00	$0.00	$0.00	$0.00	$0.00
Support - 2ND LIGHT TRL	$0.00	$0.00	$0.00	$0.00	$0.00
Luminaire - 2X14W TF - T5 PIERLIGHT	$19.18	$19.78	$20.60	$21.61	$22.71
Luminaire - 3x400W MBF - PARKWAY 3	$151.58	$156.37	$162.85	$170.76	$179.48
Luminaire - 4x1000W MBF	$128.79	$132.85	$138.36	$145.08	$152.49
Luminaire - 4x20W TF	$56.84	$58.64	$61.07	$64.03	$67.30
Luminaire - 4x20W TF - WAVERLEY	$56.84	$58.64	$61.07	$64.03	$67.30
Luminaire - 4x250W SON	$83.76	$86.40	$89.98	$94.35	$99.17
Luminaire - 4x40W TF	$70.85	$73.09	$76.12	$79.81	$83.89
Luminaire - 4x40W TF - WAVERLEY	$64.51	$66.54	$69.30	$72.67	$76.38
Luminaire - 4x600W SON	$141.02	$145.47	$151.50	$158.86	$166.97
Luminaire - 400W MBF	$31.96	$32.97	$34.33	$36.00	$37.84
Luminaire - 400W MBF - PARKWAY 1	$71.52	$73.78	$76.84	$80.57	$84.69
Luminaire - 400W MBF FLOODLIGHT	$81.25	$83.82	$87.30	$91.53	$96.21
Luminaire - 400W MBI - SMARTPOLE	$2.03	$2.10	$2.18	$2.29	$2.41
Luminaire - 400W MBI FLOODLIGHT	$54.85	$56.58	$58.92	$61.79	$64.94
Luminaire - 400W SON	$32.02	$33.03	$34.40	$36.07	$37.91
Luminaire - 400W SON - PARKWAY 1	$44.65	$46.05	$47.96	$50.29	$52.86
Luminaire - 400W SON FLOODLIGHT	$65.33	$67.39	$70.19	$73.59	$77.35
Luminaire - 40W SOX	$12.45	$12.84	$13.37	$14.02	$14.74
Luminaire - 42W MBF SYLVANIA SUB ECO	$23.98	$24.73	$25.76	$27.01	$28.39
Luminaire - 500W MBI FLOODLIGHT	$76.53	$78.94	$82.22	$86.21	$90.61
Luminaire - 50W MBF	$12.50	$12.90	$13.43	$14.08	$14.80
Luminaire - 50W MBF - BOURKE HILL	$12.50	$12.90	$13.43	$14.08	$14.80
Luminaire - 50W MBF - NOSTALGIA	$76.75	$79.17	$82.46	$86.46	$90.88
Luminaire - 50W MBF - PLAIN	$75.16	$77.53	$80.75	$84.67	$88.99
Luminaire - 50W MBF BOLLARD	$41.66	$42.98	$44.76	$46.94	$49.33
Luminaire - 50W SON	$12.11	$12.49	$13.01	$13.64	$14.34
Luminaire - 50W SON - BOURKE HILL	$88.09	$90.87	$94.63	$99.23	$104.30
Luminaire - 50W SON - NOSTALGIA	$29.55	$30.48	$31.75	$33.29	$34.99
Luminaire - 60W SOX	$12.45	$12.84	$13.37	$14.02	$14.74
Luminaire - 700W MBF	$36.52	$37.67	$39.23	$41.14	$43.24
Luminaire - 70W MBI	$21.23	$21.90	$22.81	$23.92	$25.14

Luminaire - 70W MBI - MACQUARIE DEC.	$137.27	$141.60	$147.47	$154.63	$162.53
Luminaire - 70W SON	$12.24	$12.63	$13.15	$13.79	$14.49
Luminaire - 70W SON - BOURKE HILL	$88.09	$90.87	$94.63	$99.23	$104.30
Luminaire - 70W SON - GEC BOSTON 2	$106.25	$109.61	$114.15	$119.70	$125.81
Luminaire - 70W SON - NOSTALGIA	$80.86	$83.41	$86.87	$91.09	$95.74
Luminaire - 70W SON - PARKVILLE	$106.25	$109.61	$114.15	$119.70	$125.81
Luminaire - 70W SON - REGAL/FLINDERS	$157.72	$162.70	$169.44	$177.67	$186.75
Luminaire - 70W SON BOLLARD	$57.23	$59.04	$61.49	$64.47	$67.76
Luminaire - 70W SON FLOODLIGHT	$23.57	$24.32	$25.33	$26.56	$27.91
Luminaire - 70W SON -PLAIN	$12.24	$12.63	$13.15	$13.79	$14.49
Luminaire - 750W MBI FLOODLIGHT	$76.53	$78.94	$82.22	$86.21	$90.61
Luminaire - 80W MBF	$11.66	$12.03	$12.53	$13.14	$13.81
Luminaire - 80W MBF - PLAIN	$11.66	$12.03	$12.53	$13.14	$13.81
Luminaire - 80W MBF - BEGA+CURVE BRA	$137.43	$141.76	$147.64	$154.81	$162.72
Luminaire - 80W MBF - BOURKE HILL	$54.31	$56.03	$58.35	$61.18	$64.31
Luminaire - 80W MBF - GEC BOSTON 2	$106.25	$109.61	$114.15	$119.70	$125.81
Luminaire - 80W MBF - NOSTALGIA	$75.16	$77.53	$80.75	$84.67	$88.99
Luminaire - 80W MBF - REGAL/FLINDERS	$151.46	$156.24	$162.73	$170.63	$179.34
Luminaire - 80W MBF - SYLVANIA SUBUR	$11.85	$12.23	$12.73	$13.35	$14.03
Luminaire - 80W MBF BOLLARD	$41.66	$42.98	$44.76	$46.94	$49.33
Luminaire - 80W MBF TOORAK	$66.92	$69.03	$71.89	$75.38	$79.23
Luminaire - 90W SOX	$57.63	$59.45	$61.91	$64.92	$68.23
Support - BOLLARD	$132.51	$136.70	$142.37	$149.28	$156.90
Bracket - C4	$85.95	$88.67	$92.34	$96.83	$101.77
Support - COLUMN 10.5M-13.5M	$258.50	$266.66	$277.72	$291.20	$306.07
Support - COLUMN 14M-15M	$237.60	$245.10	$255.27	$267.66	$281.33
Support - COLUMN 2.5M-3.5M	$208.12	$214.69	$223.59	$234.45	$246.42
Support - COLUMN 4-6.5M ORION WATE	$225.85	$232.98	$242.65	$254.43	$267.42
Support - COLUMN 4M-6.5M	$254.45	$262.48	$273.37	$286.64	$301.28
Support - COLUMN 7M-10M	$247.41	$255.22	$265.81	$278.71	$292.95
Support - DECORATIVE COLUMN	$272.85	$281.46	$293.14	$307.37	$323.07
Support - DEDICATED SUPPORT & COND	$220.75	$227.72	$237.17	$248.68	$261.38
Support - HYDE PARK STANDARD	$339.58	$350.30	$364.83	$382.54	$402.08
Lamp - INC1x100	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - INC1x1000	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - INC1x1440	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - INC1x150	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - INC1x200	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - INC1x300	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - INC1x40	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - INC1x500	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - INC1x60	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - INC1x75	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - INC3x100	$0.00	$0.00	$0.00	$0.00	$0.00
Luminaire - INCANDESCENT	$5.53	$5.70	$5.94	$6.23	$6.54
Support - MACQUARIE STANDARD	$57.42	$59.23	$61.69	$64.68	$67.99
Support - MAST 15.5M-30M	$249.35	$257.22	$267.89	$280.90	$295.25
Support - MAST 23M	$249.35	$257.22	$267.89	$280.90	$295.25
Support - MAST 25M	$249.35	$257.22	$267.89	$280.90	$295.25
Lamp - MBF1x1000	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF1x125	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF1x250	$0.00	$0.00	$0.00	$0.00	$0.00

Lamp - MBF1x400	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF1x42	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF1x50	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF1x500	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF1x700	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF1x80	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF1x800	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF2x125	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF2x160	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF2x175	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF2x400	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF2x80	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF3x160	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF3x250	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF3x400	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF3x80	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF4x1000	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF4x80	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF6x125	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF6x160	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF9x160	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBI1x100	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBI1x1000	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBI1x150	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBI1x1500	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBI1x250	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBI1x3745	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBI1x400	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBI1x500	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBI1x70	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBI1*750	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBI2x400	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBI4x150	$0.00	$0.00	$0.00	$0.00	$0.00
Bracket - NIL	$0.00	$0.00	$0.00	$0.00	$0.00
Connection - OU	$10.41	$10.74	$11.18	$11.72	$12.32
Connection - OH	$0.00	$0.00	$0.00	$0.00	$0.00
Connection - OH2	$0.00	$0.00	$0.00	$0.00	$0.00
Connection - OHS	$0.00	$0.00	$0.00	$0.00	$0.00
Support - ORION DOUBLE ARM	$38.99	$40.22	$41.89	$43.93	$46.17
Support - POLO 10.5M DECORATIVE 2M	$77.59	$80.04	$83.36	$87.41	$91.87
Support - POLO 4.5M DECORATIVE 1.2	$77.59	$80.04	$83.36	$87.41	$91.87
Support - PRIVATE	$0.00	$0.00	$0.00	$0.00	$0.00
Support - ROCKS STANDARD	$198.19	$204.45	$212.93	$223.27	$234.67
Support - SMARTPOLE A	$0.00	$0.00	$0.00	$0.00	$0.00
Support - SMARTPOLE AB	$0.00	$0.00	$0.00	$0.00	$0.00
Support - SMARTPOLE B	$0.00	$0.00	$0.00	$0.00	$0.00
Support - SMARTPOLE C	$0.00	$0.00	$0.00	$0.00	$0.00
Bracket - SMARTPOLE DOUBLE	$10.33	$10.66	$11.10	$11.64	$12.23
Bracket - SMARTPOLE SINGLE LONG	$10.33	$10.66	$11.10	$11.64	$12.23
Bracket - SMARTPOLE SINGLE SHORT	$10.33	$10.66	$11.10	$11.64	$12.23
Lamp - SON1x100	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SON1x1000	$0.00	$0.00	$0.00	$0.00	$0.00

Lamp - SON1x120	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SON1x150	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SON1x220	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SON1x250	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SON1x310	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SON1x360	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SON1x400	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SON1x50	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SON1x70	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SON2x250	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SON2x400	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SON2x70	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SON3x70	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SON4x250	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SON4x600	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SON4x70	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SON8x70	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SOX1x135	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SOX1x150	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SOX1x180	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - SOX1x90	$0.00	$0.00	$0.00	$0.00	$0.00
Bracket - SUSPENDED	$57.27	$59.08	$61.53	$64.52	$67.81
Bracket - T1	$28.34	$29.24	$30.45	$31.93	$33.56
Bracket - T2	$46.71	$48.19	$50.19	$52.63	$55.31
Bracket - T2A	$46.71	$48.19	$50.19	$52.63	$55.31
Bracket - T3	$47.38	$48.88	$50.90	$53.37	$56.10
Bracket - T3A	$47.38	$48.88	$50.90	$53.37	$56.10
Bracket - T4	$45.38	$46.82	$48.76	$51.13	$53.74
Bracket - T5	$45.38	$46.82	$48.76	$51.13	$53.74
Bracket - T6	$65.12	$67.17	$69.96	$73.35	$77.10
Bracket - T7	$59.46	$61.34	$63.88	$66.99	$70.41
Lamp - TF1x16	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF1x176	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF1x20	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF1x236	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF1x26	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF1x40	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF1x60	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF1x80	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF2x14 T5	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF2x20	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF2x26	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF2x40	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF2x58	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF2x80	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF3x20	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF3x40	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF3x80	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF4x20	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF4x40	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF4x80	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF5x58	$0.00	$0.00	$0.00	$0.00	$0.00

Lamp - TF5x65	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF5x80	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF6x20	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF6x36	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TF6x80	$0.00	$0.00	$0.00	$0.00	$0.00
Luminaire - TH FLOODLIGHT	$149.08	$153.79	$160.16	$167.94	$176.52
Lamp - TH1x1000	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TH1x1500	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TH1x400	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TH1x500	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - TH1x750	$0.00	$0.00	$0.00	$0.00	$0.00
Connection - UG2	$0.00	$0.00	$0.00	$0.00	$0.00
Connection - UGORDA	$10.41	$10.74	$11.18	$11.72	$12.32
Connection - UGR1	$14.44	$14.90	$15.52	$16.27	$17.10
Connection - UGR2	$10.41	$10.74	$11.18	$11.72	$12.32
Connection - UGS	$10.41	$10.74	$11.18	$11.72	$12.32
Connection - UG-SP	$0.00	$0.00	$0.00	$0.00	$0.00
Support - UNKNOWN	$0.00	$0.00	$0.00	$0.00	$0.00
Support - WALL	$0.00	$0.00	$0.00	$0.00	$0.00
Support - WOOD POLE NON-TRL	$0.00	$0.00	$0.00	$0.00	$0.00
Support - WOOD POLE TRL	$0.00	$0.00	$0.00	$0.00	$0.00
Connection - EMPTY	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - EMPTY	$0.00	$0.00	$0.00	$0.00	$0.00
Luminaire - EMPTY	$1.36	$1.40	$1.46	$1.53	$1.61
Support - EMPTY	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - MBF1x160	$0.00	$0.00	$0.00	$0.00	$0.00
Bracket - PRIVATE	$10.33	$10.66	$11.10	$11.64	$12.23
Luminaire - PRIVATE	$1.36	$1.40	$1.46	$1.53	$1.61
Support - SUSPENDED	$0.00	$0.00	$0.00	$0.00	$0.00

Appendix F: Maintenance prices for all assets ($nominal)

Asset type	FY10	FY11	FY12	FY13	FY14
Connection - EMPTY	$0.00	$0.00	$0.00	$0.00	$0.00
Connection - OU	$79.69	$81.66	$83.68	$85.75	$87.87
Connection - OH	$0.00	$0.00	$0.00	$0.00	$0.00
Connection - OH2	$0.00	$0.00	$0.00	$0.00	$0.00
Connection - OHS	$0.00	$0.00	$0.00	$0.00	$0.00
Connection - UG2	$0.00	$0.00	$0.00	$0.00	$0.00
Connection - UGORDA	$39.84	$40.83	$41.84	$42.88	$43.94
Connection - UGR1	$73.05	$74.85	$76.71	$78.61	$80.55
Connection - UGR2	$26.56	$27.22	$27.89	$28.58	$29.29
Connection - UGS	$0.00	$0.00	$0.00	$0.00	$0.00
Connection - UGSP	$0.00	$0.00	$0.00	$0.00	$0.00
Lamp - EMPTY	$35.26	$35.47	$35.68	$36.59	$37.50
Lamp - INC1x100	$187.78	$194.85	$201.18	$207.81	$213.56
Lamp - INC1x1000	$359.02	$371.84	$383.61	$395.58	$406.28
Lamp - INC1x1440	$186.48	$193.47	$199.72	$206.31	$212.02
Lamp - INC1x150	$191.90	$199.02	$205.40	$212.14	$217.99
Lamp - INC1x200	$193.64	$200.80	$207.23	$214.01	$219.91
Lamp - INC1x300	$213.55	$221.21	$228.14	$235.44	$241.87
Lamp - INC1x40	$187.87	$194.94	$201.27	$207.90	$213.66
Lamp - INC1x500	$244.48	$252.91	$260.63	$268.73	$275.98
Lamp - INC1x60	$187.78	$194.85	$201.18	$207.81	$213.56
Lamp - INC1x75	$187.78	$194.85	$201.18	$207.81	$213.56
Lamp - INC3x100	$189.38	$196.49	$202.86	$209.53	$215.32
Lamp - MBF1x1000	$95.57	$97.60	$99.57	$102.26	$104.87
Lamp - MBF1x125	$45.36	$45.98	$46.55	$47.82	$49.04
Lamp - MBF1x160	$39.52	$39.79	$40.05	$41.07	$42.10
Lamp - MBF1x250	$45.60	$46.12	$46.60	$47.84	$49.05
Lamp - MBF1x400	$45.50	$46.01	$46.48	$47.71	$48.92
Lamp - MBF1x42	$43.74	$44.28	$44.79	$45.99	$47.16
Lamp - MBF1x50	$37.92	$38.23	$38.52	$39.52	$40.51
Lamp - MBF1x500	$113.23	$115.99	$118.61	$121.92	$125.08
Lamp - MBF1x700	$68.95	$70.19	$71.38	$73.30	$75.17
Lamp - MBF1x80	$39.90	$40.30	$40.68	$41.75	$42.81
Lamp - MBF1x800	$113.23	$115.99	$118.61	$121.92	$125.08
Lamp - MBF2x125	$54.21	$55.18	$56.08	$57.65	$59.14
Lamp - MBF2x160	$51.41	$52.26	$53.04	$54.53	$55.95
Lamp - MBF2x175	$102.05	$104.16	$106.22	$109.03	$111.79
Lamp - MBF2x400	$52.50	$53.25	$53.95	$55.40	$56.81
Lamp - MBF2x80	$44.55	$45.13	$45.68	$46.91	$48.11
Lamp - MBF3x160	$51.41	$52.26	$53.04	$54.53	$55.95
Lamp - MBF3x250	$59.80	$60.82	$61.78	$63.47	$65.10
Lamp - MBF3x400	$59.51	$60.49	$61.42	$63.08	$64.70
Lamp - MBF3x80	$49.19	$49.97	$50.68	$52.08	$53.42
Lamp - MBF4x1000	$191.99	$196.41	$200.82	$206.02	$211.20
Lamp - MBF4x80	$53.84	$54.80	$55.68	$57.24	$58.72
Lamp - MBF6x125	$91.62	$93.99	$96.17	$99.01	$101.63
Lamp - MBF6x160	$51.41	$52.26	$53.04	$54.53	$55.95

Lamp - MBF9x160	$51.41	$52.26	$53.04	$54.53	$55.95
Lamp - MBI1x100	$67.26	$68.59	$69.84	$71.77	$73.62
Lamp - MBI1x1000	$155.34	$159.21	$162.95	$167.40	$171.69
Lamp - MBI1x150	$96.54	$98.49	$100.38	$103.03	$105.64
Lamp - MBI1x1500	$128.49	$131.70	$134.76	$138.51	$142.09
Lamp - MBI1x250	$60.31	$61.29	$62.22	$63.89	$65.52
Lamp - MBI1x3745	$72.93	$74.77	$76.41	$78.72	$80.82
Lamp - MBI1x400	$58.76	$59.66	$60.52	$62.13	$63.71
Lamp - MBI1x500	$113.35	$116.19	$118.86	$122.21	$125.39
Lamp - MBI1x70	$70.56	$72.00	$73.36	$75.39	$77.33
Lamp - MBI2x400	$79.03	$80.56	$82.03	$84.23	$86.38
Lamp - MBI4x150	$270.70	$277.65	$284.49	$292.06	$299.49
Lamp - SON1x100	$52.60	$53.36	$54.08	$55.52	$56.93
Lamp - SON1x1000	$86.24	$88.05	$89.79	$92.23	$94.60
Lamp - SON1x120	$69.54	$71.17	$72.66	$74.78	$76.75
Lamp - SON1x150	$51.29	$52.04	$52.74	$54.16	$55.54
Lamp - SON1x220	$81.13	$83.01	$84.75	$87.17	$89.45
Lamp - SON1x250	$51.54	$52.31	$53.04	$54.48	$55.87
Lamp - SON1x310	$80.17	$82.03	$83.75	$86.14	$88.39
Lamp - SON1x360	$64.54	$66.01	$67.34	$69.33	$71.16
Lamp - SON1x400	$53.43	$54.28	$55.07	$56.57	$58.03
Lamp - SON1x50	$44.70	$45.21	$45.70	$46.89	$48.08
Lamp - SON1x70	$45.95	$46.50	$47.03	$48.25	$49.47
Lamp - SON2x250	$64.36	$65.62	$66.79	$68.65	$70.43
Lamp - SON2x400	$68.14	$69.54	$70.85	$72.85	$74.74
Lamp - SON2x70	$56.64	$57.53	$58.38	$59.92	$61.44
Lamp - SON3x70	$67.33	$68.55	$69.73	$71.59	$73.41
Lamp - SON4x250	$90.01	$92.22	$94.28	$97.00	$99.54
Lamp - SON4x600	$130.33	$133.54	$136.61	$140.37	$143.98
Lamp - SON4x70	$78.02	$79.58	$81.08	$83.26	$85.38
Lamp - SON8x70	$120.79	$123.69	$126.48	$129.93	$133.27
Lamp - SOX1x135	$51.22	$51.85	$52.46	$53.82	$55.18
Lamp - SOX1x150	$84.27	$86.31	$88.20	$90.76	$93.14
Lamp - SOX1x180	$166.25	$170.33	$174.29	$178.98	$183.55
Lamp - SOX1x90	$73.33	$74.96	$76.47	$78.64	$80.69
Lamp - TF1x16	$86.92	$89.48	$91.77	$94.63	$97.19
Lamp - TF1x176	$115.98	$119.77	$123.16	$127.09	$130.56
Lamp - TF1x20	$87.71	$90.29	$92.60	$95.48	$98.06
Lamp - TF1x236	$115.98	$119.77	$123.16	$127.09	$130.56
Lamp - TF1x26	$87.79	$90.37	$92.68	$95.57	$98.15
Lamp - TF1x40	$87.86	$90.44	$92.76	$95.64	$98.23
Lamp - TF1x60	$88.61	$91.21	$93.55	$96.45	$99.06
Lamp - TF1x80	$88.61	$91.21	$93.55	$96.45	$99.06
Lamp - TF2x14 T5	$41.78	$42.21	$42.62	$43.74	$44.84
Lamp - TF2x20	$51.93	$52.88	$53.75	$55.28	$56.72
Lamp - TF2x26	$88.20	$90.79	$93.12	$96.01	$98.60
Lamp - TF2x40	$140.45	$145.41	$149.84	$154.70	$158.95
Lamp - TF2x58	$86.92	$89.48	$91.77	$94.63	$97.19
Lamp - TF2x80	$141.96	$146.95	$151.43	$156.32	$160.61
Lamp - TF3x20	$88.47	$91.07	$93.40	$96.30	$98.90
Lamp - TF3x40	$193.05	$200.37	$206.92	$213.75	$219.67
Lamp - TF3x80	$195.32	$202.69	$209.30	$216.19	$222.17

Lamp - TF4x20	$88.85	$91.46	$93.80	$96.71	$99.32
Lamp - TF4x40	$245.65	$255.34	$264.00	$272.81	$280.40
Lamp - TF4x80	$248.67	$258.43	$267.18	$276.06	$283.73
Lamp - TF5x58	$86.92	$89.48	$91.77	$94.63	$97.19
Lamp - TF5x65	$86.92	$89.48	$91.77	$94.63	$97.19
Lamp - TF5x80	$302.02	$314.17	$325.05	$335.93	$345.29
Lamp - TF6x20	$89.61	$92.24	$94.60	$97.53	$100.16
Lamp - TF6x36	$90.11	$92.75	$95.13	$98.07	$100.71
Lamp - TF6x80	$355.38	$369.91	$382.93	$395.80	$406.84
Lamp - TH1x1000	$73.57	$75.21	$76.72	$78.92	$80.98
Lamp - TH1x1500	$71.35	$72.93	$74.38	$76.52	$78.53
Lamp - TH1x400	$79.53	$81.31	$82.97	$85.33	$87.55
Lamp - TH1x500	$67.30	$68.78	$70.13	$72.17	$74.07
Lamp - TH1x750	$74.36	$76.01	$77.54	$79.76	$81.85

Appendix G: Comparison of 2009–10 prices for post 30 June 2009 assets ($nominal)

Tariff charges FY10		Annuity capital prices						Maintenance prices				
		AER draft Feb 2010	EA submission March 2010	% change	AER final April 2010	% change		AER draft Feb 2010	EA submission March 2010	% change	AER final April 2010	% change
Bracket - 0.5		$17.20	$21.76	26.52%	$17.09	-21.47%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - 0.6		$17.20	$21.76	26.52%	$17.09	-21.47%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - 1.0		$16.42	$20.98	27.78%	$16.31	-22.24%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - 1.2		$16.42	$20.98	27.78%	$16.31	-22.24%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - 1.5		$65.51	$70.07	6.96%	$65.09	-7.11%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - 2.0		$21.33	$25.89	21.39%	$21.19	-18.15%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - 2.5		$26.49	$33.37	25.98%	$26.32	-21.13%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - 3.0		$41.21	$48.10	16.69%	$40.95	-14.85%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - 3.5		$43.45	$50.33	15.84%	$43.17	-14.22%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - 4.0		$43.45	$50.33	15.84%	$43.17	-14.22%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - 4.5		$49.69	$56.57	13.85%	$49.38	-12.72%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - 5.0		$47.68	$54.57	14.43%	$47.38	-13.17%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - 6.0		$65.53	$72.41	10.50%	$65.12	-10.08%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - 6.5		$65.53	$72.41	10.50%	$65.12	-10.08%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - 7.0		$65.53	$72.41	10.50%	$65.12	-10.08%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - 8.0		$65.53	$72.41	10.50%	$65.12	-10.08%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 1x40W TF		$12.53	$13.13	4.79%	$12.45	-5.18%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 1x80W TF		$10.03	$10.63	5.98%	$9.97	-6.24%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 1000W MBF		$33.94	$34.84	2.66%	$33.72	-3.22%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 1000W SON		$181.06	$181.96	0.50%	$179.90	-1.13%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 1000W SON FLOODLIGHT		$94.65	$95.55	0.96%	$94.04	-1.58%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 1000W/1500W MBI FLOODLIGHT		$137.45	$138.35	0.66%	$136.57	-1.29%		$0.00	$0.00	0.00%	$0.00	0.00%

Luminaire - 100W MBI		$29.32	$30.23	3.08%	$29.13	-3.61%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 100W MBI FLOODLIGHT		$33.94	$34.84	2.66%	$33.72	-3.22%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 100W SON		$25.27	$26.17	3.58%	$25.11	-4.07%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 100W SON - PARKVILLE		$134.65	$135.56	0.67%	$133.79	-1.30%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 100W SON FLOODLIGHT		$60.65	$61.56	1.49%	$60.27	-2.10%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 100W SON -PLAIN		$25.27	$26.17	3.58%	$25.11	-4.07%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 125W MBF		$13.26	$14.17	6.82%	$13.18	-6.98%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 125W MBF - BOURKE HILL		$92.13	$93.03	0.98%	$91.54	-1.60%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 125W MBF - HYDE PARK		$64.99	$65.90	1.39%	$64.58	-2.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 125W MBF - NOSTALGIA		$94.42	$95.32	0.96%	$93.82	-1.58%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 125W MBF - PARKVILLE		$120.81	$121.72	0.75%	$120.04	-1.38%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 125W MBF BOLLARD		$54.83	$55.73	1.65%	$54.48	-2.25%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 125W MBF -PLAIN		$13.26	$14.17	6.82%	$13.18	-6.98%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 125W/250W MBF FLOODLIGHT		$30.85	$31.76	2.93%	$30.66	-3.47%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 135W SOX		$37.01	$37.92	2.44%	$36.78	-3.01%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 150W SON		$24.47	$25.37	3.70%	$24.31	-4.18%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 150W SON - HYDE PARK		$64.99	$65.90	1.39%	$64.58	-2.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 150W SON - PARKVILLE		$134.65	$135.56	0.67%	$133.79	-1.30%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 150W SON - PARKWAY 1		$44.93	$45.84	2.01%	$44.65	-2.60%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 150W SON FLOODLIGHT		$2.04	$2.95	44.23%	$2.03	-31.11%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 150W SON GEC 'BOSTON 3'		$120.81	$121.72	0.75%	$120.04	-1.38%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 150W/250W MBI FLOODLIGHT		$80.94	$81.84	1.12%	$80.42	-1.74%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 180W SOX		$44.01	$44.91	2.05%	$43.73	-2.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 2x14W TF - T5 PIERLITE M		$29.01	$29.61	2.07%	$28.83	-2.65%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 2x175W MBF - PARKWAY 2		$152.56	$153.46	0.59%	$151.58	-1.22%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 2x20W TF		$12.43	$13.03	4.83%	$12.35	-5.21%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 2x20W TF - WAVERLEY		$12.43	$13.03	4.83%	$12.35	-5.21%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 2x250W SON FLOODLIGHT		$71.98	$72.89	1.26%	$71.52	-1.87%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 2x26W TF MACQUARIE DEC.		$122.22	$122.82	0.49%	$121.44	-1.12%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 2x400W MBF - PARKWAY 2		$152.56	$153.46	0.59%	$151.58	-1.22%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 2x400W MBI FLOODLIGHT		$155.21	$156.12	0.58%	$154.22	-1.21%		$0.00	$0.00	0.00%	$0.00	0.00%

Luminaire - 2x400W SON FLOODLIGHT		$169.48	$170.39	0.53%	$168.40	-1.17%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 2x40W TF		$29.34	$29.94	2.04%	$29.15	-2.63%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 2x70W SON - BOURKE HILL		$172.92	$173.52	0.35%	$171.81	-0.98%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 2x80W MBF - BOURKE HILL		$77.24	$77.84	0.78%	$76.75	-1.40%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 250W MBF		$23.42	$24.33	3.86%	$23.27	-4.33%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 250W MBF - PARKVILLE		$124.58	$125.48	0.73%	$123.78	-1.36%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 250W MBF - PARKWAY 1		$44.93	$45.84	2.01%	$44.65	-2.60%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 250W MBI - SMARTPOLE		$2.04	$2.95	44.23%	$2.03	-31.11%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 250W SON		$22.93	$23.83	3.94%	$22.78	-4.41%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 250W SON - PARKVILLE		$147.52	$148.42	0.61%	$146.58	-1.24%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 250W SON - PARKWAY 1		$44.93	$45.84	2.01%	$44.65	-2.60%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 250W SON FLOODLIGHT		$53.98	$54.88	1.68%	$53.63	-2.28%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 250W SON GEC 'BOSTON 3'		$123.60	$124.51	0.73%	$122.81	-1.36%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - 2ND LIGHT NON-TRL		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - 2ND LIGHT TRL		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 2X14W TF - T5 PIERLIGHT		$19.30	$19.90	3.11%	$19.18	-3.63%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 3x400W MBF - PARKWAY 3		$152.56	$153.46	0.59%	$151.58	-1.22%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 4x1000W MBF		$129.62	$130.52	0.70%	$128.79	-1.33%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 4x20W TF		$57.21	$57.81	1.05%	$56.84	-1.67%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 4x20W TF - WAVERLEY		$57.21	$57.81	1.05%	$56.84	-1.67%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 4x250W SON		$84.29	$85.20	1.07%	$83.76	-1.69%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 4x40W TF		$71.31	$71.91	0.84%	$70.85	-1.47%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 4x40W TF - WAVERLEY		$64.92	$65.52	0.92%	$64.51	-1.55%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 4x600W SON		$141.93	$142.83	0.64%	$141.02	-1.27%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 400W MBF		$32.16	$33.07	2.81%	$31.96	-3.36%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 400W MBF - PARKWAY 1		$71.98	$72.89	1.26%	$71.52	-1.87%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 400W MBF FLOODLIGHT		$81.78	$82.68	1.11%	$81.25	-1.73%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 400W MBI - SMARTPOLE		$2.04	$2.95	44.23%	$2.03	-31.11%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 400W MBI FLOODLIGHT		$55.20	$56.10	1.64%	$54.85	-2.24%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 400W SON		$32.23	$33.13	2.81%	$32.02	-3.35%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 400W SON - PARKWAY 1		$44.93	$45.84	2.01%	$44.65	-2.60%		$0.00	$0.00	0.00%	$0.00	0.00%

Luminaire - 400W SON FLOODLIGHT		$65.75	$66.65	1.38%	$65.33	-1.99%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 40W SOX		$12.53	$13.13	4.79%	$12.45	-5.18%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 42W MBF SYLVANIA SUB ECO		$24.13	$24.73	2.48%	$23.98	-3.05%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 500W MBI FLOODLIGHT		$77.02	$77.92	1.17%	$76.53	-1.79%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 50W MBF		$12.58	$13.18	4.77%	$12.50	-5.16%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 50W MBF - BOURKE HILL		$12.58	$13.18	4.77%	$12.50	-5.16%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 50W MBF - NOSTALGIA		$77.24	$77.84	0.78%	$76.75	-1.40%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 50W MBF - PLAIN		$75.64	$76.24	0.79%	$75.16	-1.42%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 50W MBF BOLLARD		$41.93	$42.53	1.43%	$41.66	-2.04%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 50W SON		$12.19	$12.79	4.92%	$12.11	-5.30%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 50W SON - BOURKE HILL		$88.65	$89.25	0.68%	$88.09	-1.31%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 50W SON - NOSTALGIA		$29.74	$30.34	2.02%	$29.55	-2.60%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 60W SOX		$12.53	$13.13	4.79%	$12.45	-5.18%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 700W MBF		$36.75	$37.66	2.46%	$36.52	-3.03%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 70W MBI		$21.37	$21.97	2.81%	$21.23	-3.35%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 70W MBI - MACQUARIE DEC.		$138.15	$139.05	0.65%	$137.27	-1.29%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 70W SON		$12.32	$12.92	4.87%	$12.24	-5.25%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 70W SON - BOURKE HILL		$88.65	$89.25	0.68%	$88.09	-1.31%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 70W SON - GEC BOSTON 2		$106.94	$107.54	0.56%	$106.25	-1.19%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 70W SON - NOSTALGIA		$81.38	$81.98	0.74%	$80.86	-1.37%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 70W SON - PARKVILLE		$106.94	$107.54	0.56%	$106.25	-1.19%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 70W SON - REGAL/FLINDERS		$158.73	$159.33	0.38%	$157.72	-1.01%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 70W SON BOLLARD		$57.60	$58.20	1.04%	$57.23	-1.66%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 70W SON FLOODLIGHT		$23.73	$24.33	2.53%	$23.57	-3.09%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 70W SON -PLAIN		$12.32	$12.92	4.87%	$12.24	-5.25%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 750W MBI FLOODLIGHT		$77.02	$77.92	1.17%	$76.53	-1.79%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 80W MBF		$11.74	$12.34	5.11%	$11.66	-5.47%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 80W MBF - PLAIN		$11.74	$12.34	5.11%	$11.66	-5.47%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 80W MBF - BEGA+CURVE BRA		$138.31	$138.91	0.43%	$137.43	-1.07%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 80W MBF - BOURKE HILL		$54.66	$55.26	1.10%	$54.31	-1.72%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 80W MBF - GEC BOSTON 2		$106.94	$107.54	0.56%	$106.25	-1.19%		$0.00	$0.00	0.00%	$0.00	0.00%

Luminaire - 80W MBF - NOSTALGIA		$75.64	$76.24	0.79%	$75.16	-1.42%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 80W MBF - REGAL/FLINDERS		$152.44	$153.04	0.39%	$151.46	-1.03%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 80W MBF - SYLVANIA SUBUR		$11.93	$12.53	5.03%	$11.85	-5.40%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 80W MBF BOLLARD		$41.93	$42.53	1.43%	$41.66	-2.04%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 80W MBF TOORAK		$67.35	$67.95	0.89%	$66.92	-1.52%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - 90W SOX		$58.00	$58.90	1.56%	$57.63	-2.16%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - BOLLARD		$133.37	$133.37	0.00%	$132.51	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - C4		$86.51	$93.39	7.95%	$85.95	-7.96%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - COLUMN 10.5M-13.5M		$260.16	$260.16	0.00%	$258.50	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - COLUMN 14M-15M		$239.13	$239.13	0.00%	$237.60	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - COLUMN 2.5M-3.5M		$209.46	$209.46	0.00%	$208.12	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - COLUMN 4-6.5M ORION WATE		$227.31	$227.31	0.00%	$225.85	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - COLUMN 4M-6.5M		$256.09	$256.09	0.00%	$254.45	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - COLUMN 7M-10M		$249.00	$249.00	0.00%	$247.41	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - DECORATIVE COLUMN		$274.61	$274.61	0.00%	$272.85	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - DEDICATED SUPPORT & COND		$222.17	$222.17	0.00%	$220.75	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - HYDE PARK STANDARD		$341.76	$341.76	0.00%	$339.58	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Lamp - INC1x100		$0.00	$0.00	0.00%	$0.00	0.00%		$183.90	$270.15	46.90%	$187.78	-30.49%
Lamp - INC1x1000		$0.00	$0.00	0.00%	$0.00	0.00%		$353.79	$483.15	36.57%	$359.02	-25.69%
Lamp - INC1x1440		$0.00	$0.00	0.00%	$0.00	0.00%		$182.58	$268.83	47.23%	$186.48	-30.63%
Lamp - INC1x150		$0.00	$0.00	0.00%	$0.00	0.00%		$188.03	$274.27	45.87%	$191.90	-30.03%
Lamp - INC1x200		$0.00	$0.00	0.00%	$0.00	0.00%		$189.78	$276.03	45.44%	$193.64	-29.85%
Lamp - INC1x300		$0.00	$0.00	0.00%	$0.00	0.00%		$209.83	$296.07	41.10%	$213.55	-27.87%
Lamp - INC1x40		$0.00	$0.00	0.00%	$0.00	0.00%		$183.99	$270.23	46.87%	$187.87	-30.48%
Lamp - INC1x500		$0.00	$0.00	0.00%	$0.00	0.00%		$240.96	$327.20	35.79%	$244.48	-25.28%
Lamp - INC1x60		$0.00	$0.00	0.00%	$0.00	0.00%		$183.90	$270.15	46.90%	$187.78	-30.49%
Lamp - INC1x75		$0.00	$0.00	0.00%	$0.00	0.00%		$183.90	$270.15	46.90%	$187.78	-30.49%
Lamp - INC3x100		$0.00	$0.00	0.00%	$0.00	0.00%		$195.34	$276.76	41.68%	$189.38	-31.57%
Luminaire - INCANDESCENT		$5.56	$6.16	10.78%	$5.53	-10.31%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - MACQUARIE STANDARD		$57.79	$57.79	0.00%	$57.42	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - MAST 15.5M-30M		$250.96	$250.96	0.00%	$249.35	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%

Support - MAST 23M		$250.96	$250.96	0.00%	$249.35	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - MAST 25M		$250.96	$250.96	0.00%	$249.35	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Lamp - MBF1x1000		$0.00	$0.00	0.00%	$0.00	0.00%		$96.58	$113.36	17.37%	$95.57	-15.70%
Lamp - MBF1x125		$0.00	$0.00	0.00%	$0.00	0.00%		$46.48	$67.45	45.12%	$45.36	-32.75%
Lamp - MBF1x250		$0.00	$0.00	0.00%	$0.00	0.00%		$46.81	$70.67	50.97%	$45.60	-35.48%
Lamp - MBF1x400		$0.00	$0.00	0.00%	$0.00	0.00%		$46.73	$71.16	52.28%	$45.50	-36.06%
Lamp - MBF1x42		$0.00	$0.00	0.00%	$0.00	0.00%		$44.45	$54.73	23.15%	$43.74	-20.09%
Lamp - MBF1x50		$0.00	$0.00	0.00%	$0.00	0.00%		$38.75	$55.48	43.16%	$37.92	-31.65%
Lamp - MBF1x500		$0.00	$0.00	0.00%	$0.00	0.00%		$113.83	$138.11	21.33%	$113.23	-18.02%
Lamp - MBF1x700		$0.00	$0.00	0.00%	$0.00	0.00%		$70.06	$119.35	70.37%	$68.95	-42.23%
Lamp - MBF1x80		$0.00	$0.00	0.00%	$0.00	0.00%		$40.67	$46.56	14.48%	$39.90	-14.30%
Lamp - MBF1x800		$0.00	$0.00	0.00%	$0.00	0.00%		$113.83	$138.11	21.33%	$113.23	-18.02%
Lamp - MBF2x125		$0.00	$0.00	0.00%	$0.00	0.00%		$47.05	$70.15	49.11%	$54.21	-22.72%
Lamp - MBF2x160		$0.00	$0.00	0.00%	$0.00	0.00%		$52.30	$66.74	27.60%	$51.41	-22.97%
Lamp - MBF2x175		$0.00	$0.00	0.00%	$0.00	0.00%		$154.23	$121.91	-20.96%	$102.05	-16.29%
Lamp - MBF2x400		$0.00	$0.00	0.00%	$0.00	0.00%		$50.48	$75.59	49.73%	$52.50	-30.54%
Lamp - MBF2x80		$0.00	$0.00	0.00%	$0.00	0.00%		$44.60	$56.66	27.05%	$44.55	-21.38%
Lamp - MBF3x160		$0.00	$0.00	0.00%	$0.00	0.00%		$52.30	$66.74	27.60%	$51.41	-22.97%
Lamp - MBF3x250		$0.00	$0.00	0.00%	$0.00	0.00%		$73.81	$78.53	6.40%	$59.80	-23.85%
Lamp - MBF3x400		$0.00	$0.00	0.00%	$0.00	0.00%		$77.07	$80.02	3.82%	$59.51	-25.63%
Lamp - MBF3x80		$0.00	$0.00	0.00%	$0.00	0.00%		$49.56	$57.95	16.93%	$49.19	-15.11%
Lamp - MBF4x1000		$0.00	$0.00	0.00%	$0.00	0.00%		$1,025.68	$356.70	-65.22%	$191.99	-46.18%
Lamp - MBF4x80		$0.00	$0.00	0.00%	$0.00	0.00%		$57.28	$59.24	3.42%	$53.84	-9.12%
Lamp - MBF6x125[a]		$0.00	$0.00	0.00%	$0.00	0.00%		$99.53	$82.95	-16.66%	$91.62	10.45%
Lamp - MBF6x160		$0.00	$0.00	0.00%	$0.00	0.00%		$52.30	$66.74	27.60%	$51.41	-22.97%
Lamp - MBF9x160		$0.00	$0.00	0.00%	$0.00	0.00%		$52.30	$66.74	27.60%	$51.41	-22.97%
Lamp - MBI1x100		$0.00	$0.00	0.00%	$0.00	0.00%		$68.20	$117.36	72.08%	$67.26	-42.69%
Lamp - MBI1x1000		$0.00	$0.00	0.00%	$0.00	0.00%		$156.07	$182.23	16.76%	$155.34	-14.76%
Lamp - MBI1x150		$0.00	$0.00	0.00%	$0.00	0.00%		$97.79	$159.34	62.94%	$96.54	-39.41%
Lamp - MBI1x1500		$0.00	$0.00	0.00%	$0.00	0.00%		$129.06	$155.22	20.27%	$128.49	-17.22%
Lamp - MBI1x250		$0.00	$0.00	0.00%	$0.00	0.00%		$61.44	$117.43	91.13%	$60.31	-48.64%

Lamp - MBI1x3745		$0.00	$0.00	0.00%	$0.00	0.00%		$73.14	$99.30	35.77%	$72.93	-26.55%
Lamp - MBI1x400		$0.00	$0.00	0.00%	$0.00	0.00%		$59.96	$104.07	73.55%	$58.76	-43.53%
Lamp - MBI1x500		$0.00	$0.00	0.00%	$0.00	0.00%		$113.82	$139.98	22.99%	$113.35	-19.02%
Lamp - MBI1x70		$0.00	$0.00	0.00%	$0.00	0.00%		$71.00	$85.31	20.16%	$70.56	-17.29%
Lamp - MBI1x750		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Lamp - MBI2x400		$0.00	$0.00	0.00%	$0.00	0.00%		$100.34	$121.87	21.45%	$79.03	-35.15%
Lamp - MBI4x150		$0.00	$0.00	0.00%	$0.00	0.00%		$50.80	$306.97	504.32%	$270.70	-11.82%
Bracket - NIL		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Connection - OU		$10.47	$10.47	0.00%	$10.41	-0.64%		$80.20	$80.20	0.00%	$79.69	-0.64%
Connection - OH		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Connection - OH2		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Connection - OHS		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - ORION DOUBLE ARM		$39.24	$39.24	0.00%	$38.99	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - POLO 10.5M DECORATIVE 2M		$78.09	$78.09	0.00%	$77.59	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - POLO 4.5M DECORATIVE 1.2		$78.09	$78.09	0.00%	$77.59	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - PRIVATE		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - ROCKS STANDARD		$199.47	$199.47	0.00%	$198.19	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - SMARTPOLE A		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - SMARTPOLE AB		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - SMARTPOLE B		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - SMARTPOLE C		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - SMARTPOLE DOUBLE		$10.40	$14.96	43.88%	$10.33	-30.94%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - SMARTPOLE SINGLE LONG		$10.40	$14.96	43.88%	$10.33	-30.94%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - SMARTPOLE SINGLE SHORT		$10.40	$14.96	43.88%	$10.33	-30.94%		$0.00	$0.00	0.00%	$0.00	0.00%
Lamp - SON1x100		$0.00	$0.00	0.00%	$0.00	0.00%		$53.78	$89.08	65.64%	$52.60	-40.95%
Lamp - SON1x1000		$0.00	$0.00	0.00%	$0.00	0.00%		$87.21	$112.61	29.11%	$86.24	-23.42%
Lamp - SON1x120		$0.00	$0.00	0.00%	$0.00	0.00%		$70.06	$92.34	31.79%	$69.54	-24.69%
Lamp - SON1x150		$0.00	$0.00	0.00%	$0.00	0.00%		$52.41	$71.31	36.06%	$51.29	-28.08%
Lamp - SON1x220		$0.00	$0.00	0.00%	$0.00	0.00%		$81.72	$106.72	30.60%	$81.13	-23.98%
Lamp - SON1x250		$0.00	$0.00	0.00%	$0.00	0.00%		$52.63	$70.18	33.36%	$51.54	-26.56%
Lamp - SON1x310		$0.00	$0.00	0.00%	$0.00	0.00%		$80.75	$105.54	30.70%	$80.17	-24.04%

Lamp - SON1x360		$0.00	$0.00	0.00%	$0.00	0.00%		$65.02	$86.27	32.68%	$64.54	-25.19%
Lamp - SON1x400		$0.00	$0.00	0.00%	$0.00	0.00%		$54.47	$70.67	29.73%	$53.43	-24.40%
Lamp - SON1x50		$0.00	$0.00	0.00%	$0.00	0.00%		$45.51	$75.17	65.17%	$44.70	-40.53%
Lamp - SON1x70		$0.00	$0.00	0.00%	$0.00	0.00%		$46.76	$69.25	48.10%	$45.95	-33.65%
Lamp - SON2x250		$0.00	$0.00	0.00%	$0.00	0.00%		$66.38	$76.88	15.83%	$64.36	-16.29%
Lamp - SON2x400		$0.00	$0.00	0.00%	$0.00	0.00%		$71.07	$77.86	9.55%	$68.14	-12.48%
Lamp - SON2x70		$0.00	$0.00	0.00%	$0.00	0.00%		$67.69	$77.90	15.10%	$56.64	-27.29%
Lamp - SON3x70		$0.00	$0.00	0.00%	$0.00	0.00%		$102.24	$86.56	-15.34%	$67.33	-22.21%
Lamp - SON4x250		$0.00	$0.00	0.00%	$0.00	0.00%		$120.10	$90.29	-24.82%	$90.01	-0.31%
Lamp - SON4x600		$0.00	$0.00	0.00%	$0.00	0.00%		$314.08	$195.92	-37.62%	$130.33	-33.48%
Lamp - SON4x70		$0.00	$0.00	0.00%	$0.00	0.00%		$150.41	$95.21	-36.70%	$78.02	-18.05%
Lamp - SON8x70		$0.00	$0.00	0.00%	$0.00	0.00%		$479.37	$129.82	-72.92%	$120.79	-6.95%
Lamp - SOX1x135		$0.00	$0.00	0.00%	$0.00	0.00%		$52.53	$108.97	107.43%	$51.22	-52.99%
Lamp - SOX1x150		$0.00	$0.00	0.00%	$0.00	0.00%		$84.68	$108.97	28.68%	$84.27	-22.66%
Lamp - SOX1x180		$0.00	$0.00	0.00%	$0.00	0.00%		$167.19	$191.48	14.52%	$166.25	-13.17%
Lamp - SOX1x90		$0.00	$0.00	0.00%	$0.00	0.00%		$73.56	$91.00	23.71%	$73.33	-19.42%
Bracket - SUSPENDED		$57.64	$57.64	0.00%	$57.27	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - T1		$28.52	$33.09	15.99%	$28.34	-14.34%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - T2		$47.02	$53.90	14.63%	$46.71	-13.32%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - T2A		$47.02	$53.90	14.63%	$46.71	-13.32%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - T3		$47.68	$54.57	14.43%	$47.38	-13.17%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - T3A		$47.68	$54.57	14.43%	$47.38	-13.17%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - T4		$45.68	$52.56	15.06%	$45.38	-13.65%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - T5		$45.68	$52.56	15.06%	$45.38	-13.65%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - T6		$65.53	$72.41	10.50%	$65.12	-10.08%		$0.00	$0.00	0.00%	$0.00	0.00%
Bracket - T7		$59.84	$66.73	11.50%	$59.46	-10.89%		$0.00	$0.00	0.00%	$0.00	0.00%
Lamp - TF1x16		$0.00	$0.00	0.00%	$0.00	0.00%		$86.14	$119.21	38.40%	$86.92	-27.09%
Lamp - TF1x176		$0.00	$0.00	0.00%	$0.00	0.00%		$114.81	$164.43	43.22%	$115.98	-29.46%
Lamp - TF1x20		$0.00	$0.00	0.00%	$0.00	0.00%		$86.93	$120.01	38.05%	$87.71	-26.92%
Lamp - TF1x236		$0.00	$0.00	0.00%	$0.00	0.00%		$114.81	$164.43	43.22%	$115.98	-29.46%
Lamp - TF1x26		$0.00	$0.00	0.00%	$0.00	0.00%		$87.01	$120.09	38.01%	$87.79	-26.90%

Lamp - TF1x40		$0.00	$0.00	0.00%	$0.00	0.00%		$87.08	$120.16	37.98%	$87.86	-26.88%
Lamp - TF1x60		$0.00	$0.00	0.00%	$0.00	0.00%		$87.84	$120.92	37.66%	$88.61	-26.72%
Lamp - TF1x80		$0.00	$0.00	0.00%	$0.00	0.00%		$87.84	$120.92	37.66%	$88.61	-26.72%
Lamp - TF2x14 T5		$0.00	$0.00	0.00%	$0.00	0.00%		$46.25	$49.18	6.34%	$41.78	-15.06%
Lamp - TF2x20		$0.00	$0.00	0.00%	$0.00	0.00%		$53.20	$65.96	24.00%	$51.93	-21.27%
Lamp - TF2x26		$0.00	$0.00	0.00%	$0.00	0.00%		$88.72	$120.96	36.34%	$88.20	-27.08%
Lamp - TF2x40		$0.00	$0.00	0.00%	$0.00	0.00%		$88.94	$121.11	36.17%	$140.45	15.98%
Lamp - TF2x58		$0.00	$0.00	0.00%	$0.00	0.00%		$86.14	$119.21	38.40%	$86.92	-27.09%
Lamp - TF2x80		$0.00	$0.00	0.00%	$0.00	0.00%		$91.19	$122.63	34.48%	$141.96	15.77%
Lamp - TF3x20		$0.00	$0.00	0.00%	$0.00	0.00%		$90.83	$121.61	33.89%	$88.47	-27.25%
Lamp - TF3x40[a]		$0.00	$0.00	0.00%	$0.00	0.00%		$91.70	$122.05	33.10%	$193.05	58.17%
Lamp - TF3x80		$0.00	$0.00	0.00%	$0.00	0.00%		$96.17	$124.33	29.28%	$195.32	57.10%
Lamp - TF4x20		$0.00	$0.00	0.00%	$0.00	0.00%		$93.92	$122.40	30.32%	$88.85	-27.41%
Lamp - TF4x40		$0.00	$0.00	0.00%	$0.00	0.00%		$95.37	$123.00	28.96%	$245.65	99.72%
Lamp - TF4x80[a]		$0.00	$0.00	0.00%	$0.00	0.00%		$102.80	$126.04	22.61%	$248.67	97.30%
Lamp - TF5x58		$0.00	$0.00	0.00%	$0.00	0.00%		$86.14	$119.21	38.40%	$86.92	-27.09%
Lamp - TF5x65		$0.00	$0.00	0.00%	$0.00	0.00%		$86.14	$119.21	38.40%	$86.92	-27.09%
Lamp - TF5x80[a]		$0.00	$0.00	0.00%	$0.00	0.00%		$111.06	$127.74	15.02%	$302.02	136.43%
Lamp - TF6x20		$0.00	$0.00	0.00%	$0.00	0.00%		$102.41	$124.00	21.07%	$89.61	-27.73%
Lamp - TF6x36		$0.00	$0.00	0.00%	$0.00	0.00%		$105.44	$124.89	18.44%	$90.11	-27.84%
Lamp - TF6x80[a]		$0.00	$0.00	0.00%	$0.00	0.00%		$120.96	$129.45	7.01%	$355.38	174.54%
Luminaire - TH FLOODLIGHT		$150.04	$150.94	0.60%	$149.08	-1.23%		$0.00	$0.00	0.00%	$0.00	0.00%
Lamp - TH1x1000		$0.00	$0.00	0.00%	$0.00	0.00%		$74.18	$94.71	27.68%	$73.57	-22.32%
Lamp - TH1x1500		$0.00	$0.00	0.00%	$0.00	0.00%		$71.94	$92.47	28.54%	$71.35	-22.84%
Lamp - TH1x400		$0.00	$0.00	0.00%	$0.00	0.00%		$80.17	$100.70	25.61%	$79.53	-21.03%
Lamp - TH1x500		$0.00	$0.00	0.00%	$0.00	0.00%		$67.87	$88.40	30.25%	$67.30	-23.87%
Lamp - TH1x750		$0.00	$0.00	0.00%	$0.00	0.00%		$74.97	$95.50	27.39%	$74.36	-22.14%
Connection - UG2		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Connection - UGORDA		$10.47	$10.47	0.00%	$10.41	-0.64%		$40.10	$40.10	0.00%	$39.84	-0.64%
Connection - UGR1		$14.53	$14.53	0.00%	$14.44	-0.64%		$73.52	$73.52	0.00%	$73.05	-0.64%
Connection - UGR2		$10.47	$10.47	0.00%	$10.41	-0.64%		$26.73	$26.73	0.00%	$26.56	-0.64%

Connection - UGS		$10.47	$10.47	0.00%	$10.41	-0.64%		$0.00	$0.00	0.00%	$0.00	0.00%
Connection - UG-SP		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - UNKNOWN		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - WALL		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - WOOD POLE NON-TRL		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - WOOD POLE TRL		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Connection - EMPTY		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Lamp - EMPTY		$0.00	$0.00	0.00%	$0.00	0.00%		$36.13	$41.06	13.65%	$35.26	-14.13%
Luminaire - EMPTY		$1.37	$1.97	43.88%	$1.36	-30.94%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - EMPTY		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%
Lamp - MBF1x160		$0.00	$0.00	0.00%	$0.00	0.00%		$40.41	$45.34	12.20%	$39.52	-12.83%
Bracket - PRIVATE		$10.40	$14.96	43.88%	$10.33	-30.94%		$0.00	$0.00	0.00%	$0.00	0.00%
Luminaire - PRIVATE		$1.37	$1.97	43.88%	$1.36	-30.94%		$0.00	$0.00	0.00%	$0.00	0.00%
Support - SUSPENDED		$0.00	$0.00	0.00%	$0.00	0.00%		$0.00	$0.00	0.00%	$0.00	0.00%

(a) Assets not in service and therefore not subject to maintenance by EnergyAustralia.