Public Lighting Pricing Proposal to the Australian Energy Regulator

Delivering efficient and sustainable network services





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Front Cover: Parramatta by night, supported by Integral Energy's Parramatta Field Service Centre.

Contents

| 1. INTRODUCTION | 1 |
|--|---|
| 2. AER'S DRAFT DECISION | 1 |
| 3. INTEGRAL ENERGY'S RESPONSE | 2 |
| 4. AER'S PROCESS FOR ALTERNATE CONTROL SERVICES 4.1 AER's Public Lighting Tariff Classes | 2 2 |
| 5. PRICING FOR ASSETS INSTALLED PRIOR TO 1 JULY 2009 5.1 AER's approach to establishing a proposed schedule of prices for existing assets 5.2 Integral Energy's proposed approach to establishing a proposed schedule prices for existing assets 5.2.1 Opening regulatory asset base as at 1 July 2009 5.2.2 Depreciation 5.2.3 Return on capital and taxation 5.2.4 Operating costs 5.2.5 Proposed prices 5.2.6 Application of prices | 3 of 4 5 6 6 6 7 |
| 6. PRICING FOR ASSETS INSTALLED AFTER 1 JULY 2009 6.1 Modular Prices 6.2 Calculation of the annuity based prices 6.3 Recovery of Capital Contributions Tax Losses 6.4 Capital Provisions 6.5 Operating costs 6.6 Escalators 6.7 Proposed prices | 7 9 9 9 9 9 10 |
| 7. TRANSITIONAL ISSUES | 10 |
| APPENDIX A | |
| Proposed prices for assets installed prior to 1 July 2009 | |

APPENDIX B

Proposed prices for assets installed after 1 July 2009

1. Introduction

On 2 June 2008, Integral Energy submitted a Regulatory Proposal to the Australian Energy Regulator (AER) for the regulatory control period from 1 July 2009 to 30 June 2014, the *2009 regulatory control period*, in accordance with the requirements of the National Electricity Rules (the *Rules*) and the *Transitional Rules*.¹

As part of that proposal Integral Energy included a proposal for the pricing of public lighting which was classified as an alternative control service. On 28 November 2008, the AER published a draft decision on its distribution determination for the NSW electricity distribution businesses (the draft decision) which outlined the proposed approach for alternative control services.

This document has been prepared as a result of a request by the AER in their draft decision.

2. AER's Draft Decision

In accordance with clause 6.12.1(12) of the *Transitional Rules*, the AER decides that the control mechanism for alternative control services is:

- A schedule of fixed prices in the first year of the next regulatory control period for assets constructed before 1 July 2009 and a schedule of fixed prices in the first year of the next regulatory control period for assets constructed after 30 June 2009; and
- A price path, such as CPI, for the remaining years of the next regulatory control period.

Integral Energy is required to submit its proposed schedules of fixed prices and price path to the AER by 16 January 2009 for consideration by the AER and for public consultation. Integral Energy must follow the approach set out in section 17.6.11 of the draft decision when preparing its proposed schedules of fixed prices and price path.

In accordance with clause 6.12.1(13) of the *Transitional Rules*, the AER decided that compliance with the alternative control services control mechanism is to be demonstrated through annual approval of changes in the schedules of prices.

¹ See clause 11.15.2 of the Rules and Appendix 1 of Chapter 11, an amended form of Chapter 6 of the Rules applicable to the NSW and ACT distribution businesses, for the purposes of the 2009-2014 regulatory control period (the *Transitional Rules*).

3. Integral Energy's response

Integral Energy's public lighting is the only direct control service classified as an alternative control service for the *2009 regulatory control period*. The *Transitional Rules* require that a *regulatory proposal* for alternative control services include:

- The proposed control mechanism;
- A demonstration of the application of the proposed control mechanism; and
- The necessary supporting information.

Integral Energy originally proposed the following forms of control to public lighting services over the *2009 regulatory control period*:

- A schedule of fixed prices public lighting services for the first year of the 2009 *regulatory control period*; and
- A price path for the remaining years of the 2009 regulatory control period.

4. AER's process for alternate control services

The AER has established a separate process to consider public lighting prices that incorporates the following consultation process:

- Integral Energy is to submit proposed schedules of fixed prices and price path by 16 January 2009 for publication on the AER's website;
- On 9 March 2009 the AER will publish its proposed 2009/10 tariffs and proposed price path and seek submissions on the proposal;
- Submissions on the AER's proposed tariffs and price paths will be due by 23 March 2009;
- The AER will include in its final determination a schedule of fixed prices and a price path for public lighting services for Integral Energy.

Appended to this document are Integral Energy's schedule of fixed prices and price paths as requested by the AER. Integral Energy will provide comment on the AER's approach to public lighting pricing in accordance with the AER's timeframes.

4.1 AER's Public Lighting Tariff Classes

The tariff classes put forward in the AER's draft decision along with Integral's amended definitions and response are set out in Table 1 below:

Table 1: Summary of tariff classes

| Tariff Class | Description | Integral Energy Response | | | |
|-----------------|---|--|--|--|--|
| Assets c | Assets constructed prior to 1 July 2009 | | | | |
| 1 | Asset owned and constructed by the DNSP | Preferred definition <i>"Capital funded by DNSP"</i> . Prices discussed below and attached in Appendix A. | | | |
| 2 | Asset owned and constructed by the customer | Preferred definition <i>"Capital not funded by DNSP"</i> . Prices discussed below and attached in Appendix A. | | | |
| Assets c | Assets constructed after 30 June 2009 | | | | |
| 3 | Asset owned and constructed by the DNSP | Preferred definition <i>"Capital funded by DNSP".</i> Prices discussed below and attached in Appendix B. | | | |
| 4 | Asset owned by the customer but gifted to the DNSP | Preferred definition <i>"Capital not funded by DNSP"</i> . Prices discussed below and attached in Appendix B. | | | |
| 5 | Asset owned by the customer but maintained by the DNSP | Integral Energy believes that this work is contestable and therefore unregulated. Integral Energy has not submitted any tariffs for this category. | | | |
| 6 | Asset owned by the DNSP but replaced at the request if the customer before the end of their economic lives | Integral believes that the rates for tariff class 6 would be either tariff class 3 or 4 depending on the capital funding arrangements (based on the Integral Energy definitions above), with an up front payment for the residual asset charge determined at the time of agreement to the customer request for replacement. Integral Energy has not submitted prices other than those for tariff classes 3 and 4 for this category as Integral believes that there are too many variables relating to the residual asset charge to be able to develop an appropriate tariff based charge to cover all scenarios. | | | |

can be more than one luminaire and horizontal support per vertical support.

5. Pricing for assets installed prior to 1 July 2009

5.1 AER's approach to establishing a proposed schedule of prices for existing assets

In its Draft Decision the AER has requested that Integral Energy use the following approach to develop a proposed schedule of prices for public lighting assets constructed before 1 July 2009:

- Determine the 2009 closing asset base for public lighting using IPART's opening asset base and add actual capex less an allowance for depreciation based on average remaining lives;
- Allocate the 2009 closing asset base to individual public lighting customers using individual assets inventories;

- Calculate a total annual capital charge for each customer for each year of the next regulatory control period using the 2009 closing RAB for each customers and an average remaining life for assets related to each customer. No forecast capex or opex is to be applied in this building block model;
- Calculate an annual maintenance charge for each asset based on efficient labour and material costs;
- Calculate the total annual maintenance charge for each customer by multiplying the number of assets in the asset register for the customer by the annual maintenance costs associated with each asset; and
- Determine the total charge payable by a public lighting customer by adding the total annual capital charge to the total annual maintenance charge.

5.2 Integral Energy's proposed approach to establishing a proposed schedule of prices for existing assets

Due to the short timeframe in which to establish the proposed schedule of prices for public lighting assets constructed before 1 July 2009 and the fact that sufficient information regarding the lives and condition of the public lighting assets for individual customers is not available, it was not possible to establish a schedule of prices fully in accordance with the AER's proposed approach.

Integral Energy has used an alternate approach to establish the proposed schedule of prices which it believes achieves a similar outcome to that envisaged by the AER. Integral Energy's approach to developing the proposed schedule of prices for public lighting assets constructed before 1 July 2009 is as follows:

- Determine the 2009 closing asset base for public lighting consistent with the roll forward methodology accepted by IPART in its 2008 public lighting decision. Integral Energy proposes that the RAB value for public lighting at 1 July 2009 is \$37.5 million;
- Allocate the 2009 closing asset base to individual public lighting asset classes using individual asset class inventories. (Asset classes were established for the various different luminaires and structural components such as brackets and columns. Some aggregation was carried out for items with similar age and cost characteristics.);
- Calculate a total annual capital charge for each asset class for each year of the next regulatory control period using the 2009 closing RAB for each public lighting asset class and an average remaining life for the asset classes. No forecast capex has been applied in this building block model;
- Calculate the capital charge per asset by dividing the asset class total annual capital charge by the known inventory for that asset class;
- Calculate an annual maintenance charge per asset for each asset class based on efficient labour and material costs;
- Real cost escalators were applied to the operating component of the charges, consistent with those applied to the costs for direct standard control services;

- Determine the total annual charge payable per asset for each public lighting asset class by adding the total annual capital charge to the total annual maintenance charge; and
- Determine the total annual bill for each customer by multiplying the total charge payable for each asset class by the inventories of those asset classes for the respective customers and then summing the asset class totals.

5.2.1 Opening regulatory asset base as at 1 July 2009

Integral Energy has determined that its RAB value at 1 July 2009 is \$37.5 million as shown in Table 2.

| Nominal \$m | 30 June | | | | |
|---|---------|-------|-------|-------|-------|
| Details | 2005 | 2006 | 2007 | 2008 | 2009 |
| Opening RAB 1 July | 24.1 | 26.8 | 30.3 | 33.0 | 35.2 |
| Actual Capital | | | | | |
| expenditure/additions | 4.6 | 5.6 | 4.9 | 5.0 | 5.1 |
| Depreciation | (2.6) | (2.9) | (3.3) | (3.6) | (4.0) |
| Actual disposals | - | - | - | - | - |
| Indexation | 0.6 | 0.8 | 1.2 | 0.8 | 1.1 |
| Closing balance 30 June | 26.8 | 30.3 | 33.0 | 35.2 | 37.5 |
| Note: numbers may not add due to rounding | | | | | |

Table 2: Establishing RAB at 1 July 2009

The opening value as at 1 July 2009 is consistent with IPART's February 2008 public lighting decision, updated for CPI application adjustments note by the AER in their Draft Decision.

5.2.2 Depreciation

Integral Energy has used the 2009 closing RAB and average remaining lives shown in Table 3 for each asset class along with straight line depreciation to calculate the depreciation allowance for assets installed prior to 1 July 2009. The PTRM has been used to carry out this calculation for each asset class.

| Asset class | Remaining lives | |
|--------------------|-----------------|-------------------|
| Luminaires | Life | Remaining Life |
| 1x20W Fluorescent | 20 | 0 |
| 2x20W Fluorescent | 20 | 0 |
| 2x14W Fluorescent | 20 | 18 |
| 1x40W Fluorescent | 20 | 0 |
| 2x40W Fluorescent | 20 | 0 |
| 80W Mercury | 20 | 8 |
| 250W Mercury | 20 | 8 |
| 400W Mercury | 20 | 8 |
| 150W Sodium | 20 | 10 |
| 250W Sodium | 20 | 10 |
| 400W Sodium | 20 | 10 |
| 60W Incandescent | 20 | 0 |
| 100W Incandescent | 20 | 0 |
| 500W Incandescent | 20 | 2 |
| 1000W Incandescent | 20 | 5 |

| Asset class | Remaining lives | |
|------------------------------|-----------------|----|
| 1500W Incandescent | 20 | 5 |
| 100W Metal Halide | 20 | 5 |
| 150W Metal Halide | 20 | 5 |
| 250W Metal Halide | 20 | 5 |
| 400W Metal Halide | 20 | 5 |
| 1000W Metal Halide | 20 | 5 |
| 600W Sodium | 20 | 17 |
| | | |
| Brackets | | |
| Pole bracket minor (< 150W) | 20 | 10 |
| Pole bracket major (>= 150W) | 20 | 10 |
| Outreach minor (< 150W) | 20 | 10 |
| Outreach major (>= 150W) | 20 | 10 |
| | | |
| Columns | | |
| Minor (< 150W) | 35 | 18 |
| Major (>= 150W) | 35 | 18 |

For establishing the prices for assets installed prior to 1 July 2009, Integral Energy has assumed that the recovery of the capital costs associated with wood poles has been included in the direct control service prices.

5.2.3 Return on capital and taxation

Integral Energy has applied the rate of return for its alternative control services at the same rate of a nominal vanilla WACC of 10.02% proposed for its standard control services set out in Integral Energy's revised regulatory proposal section 13.1.

Integral Energy has calculated its tax depreciation allowance in accordance with tax law on a straight line basis and consistent with the requirements of the PTRM.

5.2.4 Operating costs

Maintenance costs have been developed for each asset class based on efficient labour and material costs. These costs have been developed on a common basis for new and existing assets and are essentially the same between new and existing, other than some minor variations due to averaging resulting from asset class rationalisation.

5.2.5 Proposed prices

Integral Energy's proposed prices for each year of the *2009 regulatory control period* for assets installed prior to 1 July 2009 are provided as Appendix A. The proposed prices are shown in \$2008/09 and would need to be inflated by the relevant CPI each year during the *2009 regulatory control period*. The proposed prices listed in Appendix A are exclusive of GST.

It should be noted that Integral Energy has developed these prices at the request of the AER. Should the AER choose to implement these proposed prices there will be both beneficial and adverse impacts on various customers. The extent of any impact

would be driven by the relevant type and mix of lights that the customer has installed in their area.

5.2.6 Application of prices

The prices listed in Appendix A will apply to all assets installed prior to 1 July 2009.

When an asset installed prior to 1 July 2009 is replaced after 1 July 2009 the prices will change to the relevant price listed in Appendix B.

6. Pricing for assets installed after 1 July 2009

Integral Energy has followed the approach requested by the AER in the Draft Decision to develop a proposed schedule of prices for public lighting assets constructed after 30 June 2009. The approach used by Integral Energy was as follows:

- Determined an annual capital charge based on efficient material and installation costs for public lighting assets currently made available to customers. The annual capital charge is based on an annuity approach using a standard life of 20 years for luminaires and brackets, 35 years for columns and poles and a WACC of 10.02% as per the AER's Draft Decision;
- Determined an annual maintenance charge for each public lighting asset currently made available to customers based on efficient labour and material costs;
- Calculated an annual charge for each asset by adding the relevant annual capital charge and the annual maintenance charge where appropriate;
- Calculated subsequent year prices by multiplying the 2009/10 prices by an appropriate escalator which incorporates CPI and real input cost escalators consistent with those used in Integral Energy's capex and opex forecasts for standard control services.

6.1 Modular Prices

Integral Energy has adopted a modular approach to pricing for assets installed after 30 June 2009. That is prices have been developed for the following components of public lighting:

- 1. Luminaire.
- 2. Vertical support. (Poles and Columns)
- 3. Horizontal support (Brackets and Outreaches)

The price which a customer pays for a particular installation would be made up of a combination of the above three component prices.

This approach simplifies pricing, increases flexibility and reduces the number of items requiring specific approval when compared to the historic practice of submitting a specific price for every different combination

Prices have been established for the luminaires that are currently made available Integral Energy to customers and for a 1x42W Compact Fluorescent which Integral Energy proposes to install from 1 July 2009. Prices have not been established for lights which are obsolete and are no longer being installed by Integral Energy.

Vertical and Horizontal supports are further disaggregated into small and large groupings.

Poles are vertical supports that will typically be wood or concrete poles but may in the future be of composite material fabrication. Poles are distinguished as small or large by the following criteria:

- Small pole \leq 11m (name plate)
- Large pole > 11m (name plate)

Similarly brackets which are the horizontal support mechanism for poles are also disaggregated into small of large on the following criteria:

- Pole bracket minor (< 150W)
- Pole bracket major (>= 150 W)

For every luminaire installed on a wood pole a charge will apply for the luminare and the relevant bracket. The pole charge will only apply when the pole serves no other network related purpose and is solely installed as the vertical support for the luminaires.

Columns are also vertical supports and are typically associated with underground reticulated areas of the network. Columns are distinguished as small or large by the following criteria.

- Small column ≤ 9m (name plate)
- Large column > 9m (name plate)

Similarly outreaches which are the horizontal support mechanisms for columns are also disaggregated into small or large on the following criteria.

- Outreach minor (< 150W)
- Outreach major (>= 150W)

For all column supported luminaires there will always be at least one luminaire charge, one outreach charge and one column charge.

The above is summarised in the following Table 4.

| | Network Pole | Dedicated Public Lighting Pole | Column |
|--------------------|--|--|--|
| Vertical Support | Not applicable | Large or small | Large or small |
| Horizontal Support | Large or small [#] | Large or small # | Large or small |
| Luminaire | Nominated style [#] and rating | Nominated style [#] and rating | Nominated style [#] and rating |

Table 4: Summary of support and luminaire combinations

Can be more than one luminaire and horizontal support per vertical support.

6.2 Calculation of the annuity based prices

Integral Energy has used the current capital costs for each component of public lighting and these have then been escalated to 2009/10 on the same basis as the capital expenditure escalation used in Integral Energy's revised regulatory proposal for standard control services.

A pre-tax real WACC of 8.09% has then been used to derive the annuity associated with each capital cost component, based on a 20 year life for luminaires, brackets and outreaches and a 35 year life for poles and columns. The pre-tax real WACC is the pre-tax equivalent of the nominal vanilla WACC of 10.02% proposed for its standard control services set out in Integral Energy's revised regulatory proposal section 13.1.

6.3 Recovery of Capital Contributions Tax Losses

For the proposed Tariff Class 4 prices, an annuity has been added to the proposed prices to recover the tax loss suffered when assets are gifted by the Customer to Integral Energy and the Capital Contribution is added to Integral Energy's asset base. The tax loss occurs due to the timing of tax paid on installation against the tax relief provided by claiming depreciation of the asset over its life.

The annuity is calculated using the Nominal Vanilla WACC applied against post tax cash flows – one for assets with 20 year life and the other for assets with 35 year life. This is based on a nominal capital contribution of \$100 and the resulting annuity is then applied as a percentage against each Tariff Class 4's actual expected Capital Contribution.

6.4 Capital Provisions

The continuation of Integral Energy's capital provision allowance has been factored into the new schedules. The capital provision that will be paid or allowed to customers for provision of public lighting as part of other work such as subdivision reticulation will equate to the full capital expense used in the derivation of the applicable annuity price.

6.5 Operating costs

Maintenance costs have been developed for each asset class based on efficient labour and material costs. These costs have been developed on a common basis for new and existing assets and are essentially the same between new and existing, other than some minor variations due to averaging resulting from asset class rationalisation.

6.6 Escalators

Real cost escalators consistent with those applied to the operating and capital cost forecasts submitted for direct standard control services were applied to the operating and capital components of the charges respectively. The methodology used NPV

smoothed the impact of the escalators, resulting in a single real escalation factor to be applied in addition to CPI.

6.7 Proposed prices

Integral Energy's proposed prices for 2009/10 for assets installed after 1 July 2009 are provided as Appendix B. The proposed prices are shown in \$2009/10. The proposed prices listed in Appendix B are exclusive of GST.

Also provided in Appendix B are the proposed relevant escalators for the remaining four years of the 2009 regulatory control period. As noted above the escalators submitted are real escalators and are applied in addition to CPI.

7. Transitional issues

The AER have specified that the two different pricing regimes set out above will apply to assets constructed before 1 July 2009 and after 30 June 2009 respectively. Integral Energy notes, however, that some form of transitional arrangements will be required due to the fact that there is potential for customers to commit to new public lighting installations before the new rates are finalised, but for construction of those assets to not be completed until after 1 July 2009. There is some potential for confusion regarding whether the new rates would apply to assets commissioned after the cut-off date, substantively constructed but not commissioned, or committed via acceptance of a quotation.

It is proposed that the transitional arrangements be further refined as part of the public lighting consultation process outlined by the AER.

Appendix A

Proposed prices for assets installed prior to 1 July 2009

Appendix B

Proposed prices for assets installed after 1 July 2009