



**EnergyAustralia™**

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EnergyAustralia's submission to

Independent Pricing and  
Regulatory Tribunal

EnergyAustralia's  
Public Lighting  
Pricing Proposals

November 2004

**Energy**



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# 1. INTRODUCTION

EnergyAustralia's public lighting business is comprised of a number of individual business operations that are packaged as a consolidated service offering for customers – generally Local Councils. Following the changes to the structure of the electricity industry in 1995 and the subsequent pricing regulations introduced by IPART in 1996, public lighting now has the following business components:

- Retail energy
- Network access (NUOS, network use of system)
- Construction of new street lights
- Maintenance (inspecting luminaires and maintaining equipment to achieve designed illumination and service levels) including 24 hour emergency service
- Asset management (maintaining records, policies and standards relating to street lights as well as coordination and management of contracts for energy, construction, inspection, maintenance, procurement, customer service, billing, etc).

This submission focuses on the construction,<sup>1</sup> maintenance and asset management components of the public lighting business, together categorised as SLUOS, or Street Lighting Use of System. This document does not address the retail supply of electricity to public lighting installations, nor the services provided by the distribution network as a prescribed service under IPART's 2004 Determination.

## 1.1. DESCRIPTION OF ENERGYAUSTRALIA'S PUBLIC LIGHTING SYSTEM

EnergyAustralia provides public lighting services to local councils and other customers throughout its distribution district, ranging from Sutherland in the south to Upper Hunter (formerly Scone and Merriwa) in the north. This includes the major urban area of Sydney as far west as Fairfield, and up into the Hunter Valley.

Street lighting has generally been categorised into "Traffic Route Lighting" (category V) and general "Street Lighting" (category P). The distinction has arisen based primarily on a general expectation of higher illumination and replacement requirements on major traffic routes in line with Australian Standards. Traffic route lighting is equipped with lighting in excess of 100 watts, whereas street lighting features lighting of less than 100 watts. EnergyAustralia also provides public lighting in other areas such as parks, pedestrian malls, etc.

EnergyAustralia currently has 113 public lighting customers (of which 41 are Local Councils, which make up over 99% of total revenues) and 246,000 street lights (luminaires) across its network franchise area.

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<sup>1</sup> The core of this pricing report relates to financing the ownership of public lighting assets. The methodology for pricing new public lighting installations in section 6.5.

## 1.2. HISTORICAL PRICING ARRANGEMENTS

Public lighting has been a service provided by distribution businesses since their inception and agreements for public lighting services were generally between Councils and their respective electricity authorities – predecessors of EnergyAustralia.

In 1992 the Independent Pricing and Regulatory Tribunal of NSW (IPART) was established to oversee regulation of electricity prices in NSW. At that time public lighting was considered as a separate tariff category within the normal operations of electricity distribution businesses. There were no specific regulatory or service standard arrangements for public lighting services or prices other than through general pricing determinations.

### IPART'S 1996 Determination

In 1996 IPART delivered a determination for electricity prices that separated electricity distribution (Network) and energy supply (Retail). In its Determination for Network Revenues, IPART excluded net proceeds for public lighting from total network revenue requirements. This left public lighting revenues (and associated costs) effectively unregulated. Instead, IPART allowed public lighting prices to be regulated through retail price side constraints, which for commercial customers was CPI plus 5%. There was no reference to specific service level requirements.

### IPART'S 1997 Determination

In 1997 IPART revisited the regulation of public lighting charges and segregated the revenues into three components:

- NUOS – Network Use of System Charges for recovery of distribution and transmission access costs.
- SLUOS – Street Lighting Use of System Charges for recovery of dedicated public lighting investments and associated operating and maintenance costs.
- Energy – Recovery of retail energy usage costs.

Applying this model, IPART introduced rates per MWh, which were to be charged to customers for public lighting services.

The result of this determination was a reduction in average revenues for public lighting across the NSW industry of around 14%. This was primarily due to the benchmarking used by IPART in the review which compared NSW prices with those in Victoria on a \$/MWh basis. The financial performance of EnergyAustralia's public lighting business deteriorated dramatically following implementation of that determination, with an estimated reduction of \$4 million in total revenues.

### IPART'S 1999 Determination

In its 1999 determination, IPART bundled the public lighting operations into the Network business. As a result the public lighting building block components were added to those of the network and included in the overall allowable revenues of distributors.

This determination went some way to rectifying the previous shortfalls in allowable revenues delivered under the MWh price cap determinations. Although actual revenues from public lighting customers did not recover public lighting costs, the total Network allowable revenue included these amounts and therefore all allowable public lighting revenues were recovered (or recoverable) from other Network customers. The shortfall in public lighting revenues was recovered from other Network customers.

### 1.2.1. Interaction with IPART 2004 Determination on DUOS pricing

The 1999 IPART Determination considered public lighting as a prescribed service. Under this structure, IPART's Determination set an Aggregate Annual Revenue Requirement at a level to recover the total costs of the distribution network and the public lighting system.

Ideally, the revenues from providing public lighting services should recover the full costs of providing public lighting services. However, largely as a result of historical pricing constraints, the public lighting system recovers less revenue than the cost to provide the public lighting service.

The shortfall in public lighting revenue was made up by distribution network revenue. This resulted in an internal cross subsidy from the distribution network to the public lighting system.

However, IPART's 2004 Determination considers public lighting to be an excluded service; it sets an Aggregate Annual Revenue Requirement to recover the costs of the distribution network excluding the public lighting system. The removal of the public lighting costs from distribution network revenues has meant that the overall revenues (DUOS plus SLUOS) are not sufficient to support the public lighting system.

Going forward, public lighting customers must contribute sufficient revenues to cover the costs of providing the excluded public lighting service. Stated another way, IPART's change to the regulatory treatment of public lighting necessarily means that public lighting customers will now be required to contribute additional revenues to recover the public lighting costs that were previously provided through distribution network revenue.

It should be noted that the public lighting revenue shortfall is relatively small when compared to the total distribution network revenue; however, it is significant in relation to the total public lighting revenue. Where removal of the subsidy impacts distribution network revenues by less than 1 percent, it has an approximately 30 - 40 percent impact on the required revenue from the public lighting service. This is a direct result of IPART's change in regulatory approach that, while removing a historical cross subsidy, requires fewer customers to pay more.

### 1.2.2. Additional public lighting costs

#### DEUS Public Lighting Code

The NSW Department of Energy, Utilities and Sustainability (DEUS) is currently undertaking a consultation process towards finalising the NSW Public Lighting Code. This Code includes a number of minimum service standards, such as provisions requiring the DNSP to repair faulty lights within specified time frames. It is EnergyAustralia's understanding that compliance with this Code may become a condition of the distribution license.

Primarily as a result of historical revenue constraints on the public lighting system, the current service levels generally fall short of the new Public Lighting Code requirements. EnergyAustralia will be required to hire additional staff and source additional equipment to comply with the NSW Public Lighting Code.

### Dedicated public lighting assets

In addition, there are a group of dedicated assets that are required to operate the public lighting system, but that had been removed from the regulatory asset base as part of the previous IPART Determinations. The intent of the previous IPART Determinations was to optimise dedicated public lighting assets operating in parallel to the distribution system, such as an underslung dedicated public lighting control main. These public lighting assets have been correctly removed from the regulatory asset base. However, the assets incorrectly optimised consist of dedicated public lighting mains and poles that are not part of the distribution system.

For example, where the illumination requirements of a major roadway requires lighting on both sides, the distribution system may follow one side of the road. Public lighting mains and poles associated with these distribution system poles are not included in the public lighting asset base. However, the poles and mains on the opposite side of the road, which serve only those street lights, would be part of these dedicated public lighting assets.

As these assets are required to operate the public lighting system, their costs must be included in public lighting charges.

### Summary

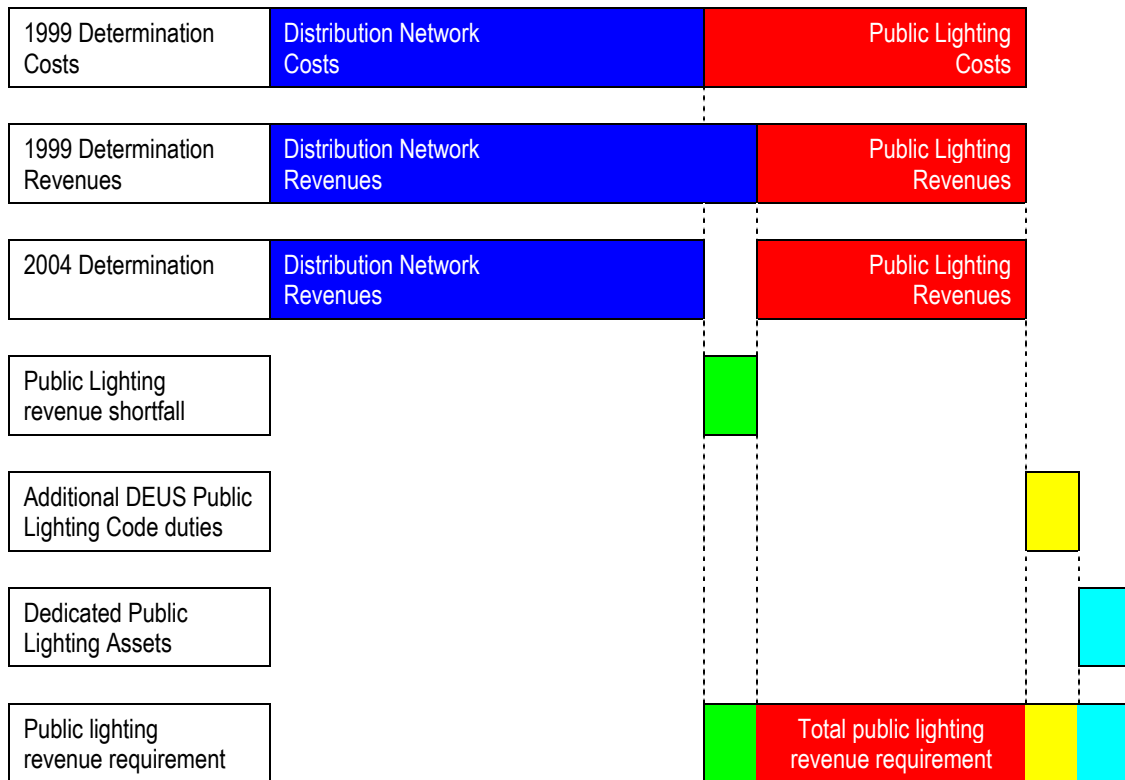
In summary, for public lighting prices to be cost reflective, they must now recover the historical cross subsidy as well as the increased costs imposed as a result of the required compliance with the DEUS Public Lighting Code. In addition, the public lighting revenues must recover the cost of the previously (incorrectly) optimised dedicated assets. This is outlined graphically in Figure 1.1 below.

While EnergyAustralia is entitled to earn a commercial return on its public lighting assets, it recognises that transitioning public lighting customers to the required tariff levels immediately would result in some large price increases that may not be appropriate in a once-off adjustment. It will be necessary, however, to accomplish this transition in a relatively short period in order to sustain the necessary investment in the public lighting system and for EnergyAustralia to achieve a sustainable financial position.

EnergyAustralia proposes that those costs that have been imposed on EnergyAustralia as a result of regulatory change (the public lighting revenue shortfall and the Public Lighting Code compliance costs) should be recovered via a step adjustment, consistent with the pass through arrangements for a Regulatory Change Event as described in IPART's 2004 Determination. However, EnergyAustralia is prepared to adopt a transitional strategy to recover the cost of dedicated assets. The proposed transitional plan is discussed in section 6.3.



**Figure 1.1 – Summary of changes in of public lighting costs and revenues**



The costs and required revenues associated with providing the public lighting service are developed more fully in this submission.

### 1.3. STRUCTURE OF THIS SUBMISSION

IPART’s Rule 2004/1 Regulation of Excluded Distribution Services (the Rule) provides the requirements for public lighting pricing.

#### 2.3 Public Lighting Regulatory Arrangements

(a) Any DNSP undertaking the construction or maintenance of Public Lighting Infrastructure must comply with all of the following requirements:

(1) clause 2.2(a) requirements: the DNSP must comply with each of the requirements set out in clauses 2.2(a)(1) [Pricing Principles] and (2); [Information disclosure.]

(2) additional information requirements: no later than two months prior to changing its prices for the construction or maintenance of Public Lighting Infrastructure, the DNSP must provide to the Tribunal a report setting out the following information:

(A) the overall costs of the construction and maintenance of Public Lighting Infrastructure that has been undertaken by the DNSP (during the period since the commencement of the Regulatory Control Period or the publication of the last report under this clause, whichever is the later), together with the basis of the costing methodology used by the DNSP to calculate those costs;

(B) the service standards allowed for by the DNSP (for the provision of those Excluded Distribution Services during the same period) having regard to those costs;

(C) any prospective changes in the DNSP's prices or rates for the construction or maintenance of Public Lighting Infrastructure and an explanation of the reasons for the prospective changes; and

(D) an explanation of how the DNSP has considered the impact of its prospective price change on customers and how it has structured its prospective prices to take account of those impacts.

(b) Each DNSP must provide the Tribunal with such information as the Tribunal may require to enable the Tribunal to investigate any complaint received by the Tribunal concerning any alleged non-compliance with this clause by the DNSP.

This submission follows the structure of those requirements.

Pricing Principles are addressed in section 2.

Information disclosure is provided in section 3.

Overall Costs of Construction and Maintenance are developed in section 4.

Service Standards are discussed in section 5.

Prospective Changes in Prices or Rates, the impact of Changes on Customers, including a transitional plan and the proposed term of the public lighting pricing arrangements, and provisions for review, are developed in section 6.

## 2. PRICING PRINCIPLES

### 2.1. IPART REQUIREMENTS

#### 2.2 Excluded Services Regulatory Arrangements

(a) Any DNSP providing Excluded Distribution Services to which this clause applies (by virtue of clause 2.1) must comply with the following requirements:

(1) pricing principles: the DNSP must use its reasonable endeavours to comply with the following pricing principles :

(A) prices are to signal the economic costs of service provision by being subsidy free (ie between incremental costs and stand alone costs); and

(B) the underlying service classifications, cost data, cost allocations and other elements that contribute to the prices charged by the DNSP for these Excluded Distribution Services should be periodically reviewed and updated where relevant to reflect industry developments and changes in user requirements and preferences, methods of service provision and costs.

The structure of this section closely follows IPART's *Pricing Principles and Methodologies for Prescribed Electricity Distribution Services* published by IPART under clause 6.2.1(f) of the National Electricity Code in respect of its 1999 Determination for NSW Electricity Distribution Networks (the PPM). The pricing principles in the Rule reflect the concepts from the PPM, so it is useful to use the PPM as a guide to the implementation of these pricing principles.

### 2.2. OBJECTIVES

In order to provide appropriate cost and consumption signals to customers, public lighting services need to reflect the underlying costs of providing those services. This enables customers to make informed decisions regarding service levels and equipment. Customers can then balance the costs against other criteria such as aesthetic amenity, safety and energy costs, as well as being informed regarding the trade off between higher capital costs and potentially lower operating costs.

Public lighting prices will also need to balance a number of conflicting priorities. First, they will need to encourage competition and contestability; this will be best achieved by signalling the cost of public lighting services based on a replacement cost of assets. However this may impose unacceptable price increases to public lighting customers in the very short term.

This pricing report seeks to balance these objectives: to signal the replacement cost of investment (the ceiling of the subsidy free zone), but ramp prices to recover a DORC valuation on the public lighting asset base over a reasonable time frame.

## 2.3. REFLECTING ECONOMIC COSTS

This pricing submission develops prices for public lighting services that reflect economic costs by being subsidy free, and signalling the cost of future investment. This is developed more fully below.

### 2.3.1. The subsidy free zone

With public lighting separated as an excluded service, the question of stand alone vs incremental costs does not rest as much on the allocation of joint and common costs as on the basis of asset valuation in the public lighting system.

However, significant parts of the public lighting system do rely on the distribution system, and some allocation of joint and common costs is inevitable.

#### Cost Allocation Principles

In preparing this pricing report, EnergyAustralia constructed a detailed inventory of the public lighting assets in service for each Council. Each asset was valued, and operating costs were assigned to each asset in service.

There are certain classes of operating costs that are not recovered directly from public lighting customers. For example, inspection and maintenance of dedicated public lighting poles is undertaken as part of the normal maintenance cycle on distribution system poles. Also, 24 hour emergency response is managed through the distribution network operations. These costs are recovered through DUOS tariffs.

In general, EnergyAustralia's approach to cost allocation tends to favour the public lighting system; the public lighting system is in receipt of an unfunded subsidy from the distribution system. This will manifest itself in a lower target revenue requirement, and a lower stand alone cost used to define the ceiling of the subsidy free zone than would be the case if all public lighting functions were charged appropriately, as discussed below.

#### Incremental Costs

Normally, incremental costs would be defined by recovering only the long term marginal costs associated with providing the public lighting service, assuming that the shared and common costs were recovered through DUOS tariffs.

In many ways, these pricing proposals embrace this concept through the definition of assets included in the public lighting capital base. Assets used by the distribution system are assigned to the distribution system; no asset costs are included for distribution poles which also support public lighting fixtures.

IPART's *Pricing Principles and Methodology* discusses incremental and average costs in terms of congestion. Due to the nature of the public lighting system, there is no concept of congestion to consider in the treatment of incremental costs. Under the public lighting pricing model used to support this submission, assets are priced according to their use; an additional public lighting fixture (for example, an additional luminaire) provides an incremental service.

## Stand Alone Costs

As discussed above, the concept of sharing the available capacity between different services is not applicable to the public lighting system. Therefore, a different concept of “stand alone costs” must be used.

In this case the top of the subsidy free zone is defined by the revenue requirement determined by the building block approach based on valuing the assets at the full replacement costs. This will signal the bypass cost of the public lighting network, and set the stage for new entrants to the marketplace.

## The Hypothetical New Entrant Test

EnergyAustralia proposes to use the Hypothetical New Entrant Test (HNET) to estimate the ceiling of the subsidy free zone. The ACCC has acknowledged that “the HNET is one mechanism for deriving a competitive (hypothetical) market price for an industry that may not be subject to competition.”

NECG has articulated the hypothetical new entrant test as follows:<sup>2</sup>

*This test asks what tariff level (or permitted revenue level) would just be sufficient to encourage an efficient hypothetical new firm to enter the market, assuming it could completely displace the incumbent service provider.*

Similarly, NERA<sup>3</sup> expresses the hypothetical new entrant test as asking:

*What is the maximum price an incumbent could charge if there was a credible threat of entry? In other words what is the maximum price consumers would be willing to pay an existing infrastructure owner if they had the hypothetical option to overcome transaction costs and negotiate as a coalition with a new entrant to provide substitute services?*

The construct of the Hypothetical New Entrant Test has been hotly debated by eminent consultants NERA<sup>4</sup> and NECG<sup>5</sup> in the context of the ACCC’s review of the Gas Access Arrangement proposed by East Australian Pipelines Limited for the Moomba-Sydney pipeline.

NECG and NERA agree on the following key elements of the HNET:<sup>6</sup>

*“Contestable market prices can be estimated by applying the hypothetical new entrant test”*

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<sup>2</sup> NECG, Appendix 1 to APT submission to the NCC, *Response to National Competition Council Draft Recommendation on Application for Revocation of Coverage of the Moomba-Sydney Pipeline and Canberra Lateral*, 11 February 2002

<sup>3</sup> National Economic Research Associates, *The Hypothetical New Entrant Test in the Context of Assessing the Moomba to Sydney Pipeline Prices - A Report for the ACCC Prepared by NERA*, September 2002, Sydney.

<sup>4</sup> Ibid

<sup>5</sup> EAPL’s submission to the National Competition Council of 11 February 2002 and NECG attachment in support of EAPL’s response to NERA/ACCC submissions (September 2002) - Submissions to NCC regarding revocation of coverage of the MSP.

<sup>6</sup> NERA and NECG differ in opinion on the gas transportation volumes that should be used in the MSP application of the HNET, but strongly agree on the test’s fundamental principles.

*“A hypothetical new entrant is not likely to inherit the baggage of an incumbent, whether the baggage is unfavourable (such as obsolete equipment, gold plated assets or outmoded work practices) or favourable (such as peculiarities in the tax position of an incumbent or below budget construction outcomes on some assets).”*

*“Selectively adopting the best elements from each scenario (hypothetical versus actual) will not yield the contestable market price. If the hypothetical new entrant test is to be used effectively it must be used in its entirety.”*

*“A hypothetical new entrant must, according to the thought experiment, construct an optimal new asset”.*

Using these agreed arguments, the Hypothetical New Entrant would have to establish tariffs to recover the following costs:

- Economic return on the capital associated with a new optimal public lighting system;
- Return of the capital associated with a new optimal public lighting system; and
- Efficient operating costs.

The cost to the hypothetical new entrant of constructing an optimal new asset to provide the public lighting service would be required to include some costs associated with the poles used to elevate the public lighting assets. While the costs of the poles and wires dedicated to the public lighting system are included in this pricing report, no costs associated with the use of distribution system poles has been included in the current pricing proposal.

It should be noted that, while a new entrant may reasonably expect to be able to gain access to the distribution system assets, it would not be reasonable to expect that access to be given free. In particular, it would be reasonable to expect that the local distribution business would levy a charge to the new entrant in order to hang the new public lighting assets from the existing distribution system poles. Therefore, in calculating the HNET for the purpose of establishing the ceiling of the subsidy free zone, EnergyAustralia has included an approximation of pole rental charges in the ceiling test opex. EnergyAustralia has used the market value levied to broadband providers to deploy cable on distribution system poles multiplied by the number of luminaires in the current system. This increases the operating cost of a hypothetical new entrant by approximately \$6.1 million. To maintain the integrity of the HNET, the alternative to including a pole rental charge would be to include the capital costs of poles and wires for the hypothetical new entrant public lighting system.

### 2.3.2. Having regard to the level of available capacity

Due to the nature of the public lighting system, there is no concept of congestion to consider in the treatment of incremental costs. Network congestion costs would be reflected in the DUOS component of the total public lighting charges. As this pricing report addresses only the SLUOS component, it is not necessary to make any additional provision for system capacity.

### 2.3.3. Signalling future investment costs

Generally speaking, IPART’s PPM encourages prices to signal when the network is reaching capacity, ideally through some form of congestion pricing. In this pricing submission, it is not appropriate to attempt to signal congestion on the distribution network.

However, it may be possible for public lighting prices to signal investment costs in additional public lighting services. The current pricing proposal provides this signal in two ways:

- It provides the cost of individual public lighting assets, so customers can determine the price of additional services; and
- It maintains the return on and return of capital components constant in real terms over the course of the pricing proposal.

#### 2.3.4. Discouraging uneconomic bypass

Bypass is a difficult concept in the context of public lighting. It may be notionally possible to bypass the public lighting system by engaging another party to replicate the system. Prices at which this type of bypass would become economic are defined by the ceiling of the subsidy free zone as defined by the Hypothetical New Entrant Test, discussed above.

#### 2.3.5. Allowing negotiation

... to better reflect the economic costs of specific services.

Consistent with IPART's final Determination, EnergyAustralia has been willing to pursue entering into negotiated public lighting agreements with the individual councils to better meet their specific needs. EnergyAustralia had established a healthy dialogue with the councils and their advisers to promote negotiated outcomes for the public lighting service. However, it now appears that negotiations will not progress until all parties are able to assess the outcomes of the regulatory process.

### 2.4. RETURNING THE ALLOWED REVENUE STREAM

...while recovering the gap between marginal and average costs in the least distorting manner possible.

The nature of the public lighting system does not lend itself to a large gap between marginal and average costs as might be expected in a capacity-constrained distribution system.

The allowed revenue stream, mirroring the cost structure, does not vary by the amount of energy consumed by the public lighting system. Rather, it varies in the same way as costs; by the number of specific public lighting assets in service.

### 2.5. PROMOTING EQUITY, STABILITY AND CONSISTENCY OF OUTCOMES

The current price proposal assumes a steady state age of assets being, on average, half their useful life.<sup>7</sup> This assumption is held throughout the price period.

While there will be some variability in outcomes to individual customers arising from the particular portfolio of public lighting assets in service, and from historical pricing arrangements (as discussed in section 6.2), the current pricing proposal is designed to deliver consistency and stability of outcomes over time.

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<sup>7</sup> Dedicated public lighting assets are depreciated on the basis of their actual lives.

### 2.5.1. Having regard to the impact of price changes on customers

The pricing transitional path is discussed in section 6.2.

### 2.5.2. Being transparent

Over the 12 months prior to filing this pricing report, EnergyAustralia has engaged frequently with the Local Councils and the Street Lighting Improvement Program (SLIP). EnergyAustralia has held ongoing discussions with these parties, including sharing modelling results, consultant reports, etc.

While the development of unit prices in this pricing report are in themselves transparent, EnergyAustralia has also conducted a process with the customers and their representatives that could best be characterised as one of information sharing and openness with the Councils and their representatives.

### 2.5.3. Being based on published costs and methods

The target revenue requirement in the public lighting price modelling is based firmly on a building block approach, as developed in section 4.1.



### 3. INFORMATION DISCLOSURE

#### 3.1. IPART REQUIREMENTS

The public lighting information disclosure requirements in IPART's Rule 2004/1 include:

##### 2.2 Excluded Services Regulatory Arrangements

(a) Any DNSP providing Excluded Distribution Services to which this clause applies (by virtue of clause 2.1) must comply with the following requirements: ...

(2) information disclosure: the DNSP must make available to any person to whom those Excluded Distribution Services are provided and on its website for downloading (and must provide to the Tribunal upon request) a written document or documents:

(A) accurately describing the Excluded Distribution Services;

(B) setting out the standard prices and rates at which they are provided by the DNSP, or (where it is not reasonably practicable to determine standard prices or rates), the methodology by which the prices or rates may be determined; and

(C) setting out the terms and conditions on which they are provided by the DNSP.

(b) Each DNSP must provide the Tribunal with such information as the Tribunal may require to enable the Tribunal to investigate any complaint received by the Tribunal concerning any alleged non-compliance with this clause 2.2 by the DNSP.

and

##### 2.3 Public Lighting Regulatory Arrangements

(2) additional information requirements: no later than two months prior to changing it[s] prices for the construction or maintenance of Public Lighting Infrastructure, the DNSP must provide to the Tribunal a report setting out the following information:

(A) the overall costs of the construction and maintenance of Public Lighting Infrastructure that has been undertaken by the DNSP (during the period since the commencement of the Regulatory Control Period or the publication of the last report under this clause, whichever is the later), together with the basis of the costing methodology used by the DNSP to calculate those costs;

(B) the service standards allowed for by the DNSP (for the provision of those Excluded Distribution Services during the same period) having regard to those costs;

(C) any prospective changes in the DNSP's prices or rates for the construction or maintenance of Public Lighting Infrastructure and an explanation of the reasons for the prospective changes; and

(D) an explanation of how the DNSP has considered the impact of its prospective price change on customers and how it has structured its prospective prices to take account of those impacts.

While these items will be addressed in this pricing proposal, a document covering these items will be available on request, and available for downloading from the EnergyAustralia web site at the conclusion of the Tribunal's assessment process and in accordance with the requirements of clause 2.3(f) of the Rule.

Overall Costs of Construction and Maintenance are developed in section 4.

Service Standards are discussed in section 5.

Prospective Changes in Prices or Rates are developed in section 6.

Impact of Changes on Customers, including a transitional plan, are provided in section 6.2.

### **3.2. DESCRIPTION OF SERVICE**

The draft DEUS NSW Public Lighting Code defines the following services as public lighting services:

- a) operation of Public Lighting Assets, including handling enquiries and complaints about Public Lighting, and dispatching crews to repair Public Lighting Assets;
- b) maintenance, repair, alteration, relocation and replacement of Public Lighting Assets;
- c) design of new Public Lighting Assets;
- d) installation of new Public Lighting Assets; and
- e) financing of Public Lighting Assets.

Whilst IPART's Rule regulates the construction or maintenance of Public Lighting Infrastructure which is defined as:

the structures, wiring, globes and other equipment:

- (1) used for, or associated with, the provision of public lighting to streets, roads and other public places; and
- (2) which are connected or attached to (or which form part of) a DNSPs Distribution System (as that term is defined in the Determination).

This pricing report addresses services a), b) and e) of the Public Lighting Code definition as those are the services which are regulated by IPART's Rule. Design and installation of new public lighting assets are addressed in the context of the methodology for constructing new assets, as discussed in section 6.5.

The services provided vary according to how the Local Council has chosen to finance the assets. For most Local Councils, EnergyAustralia owns and operates the majority of the public lighting system. In this case (Rate 1), the service includes the full range of items a), b) and e) above.

Other Local Councils have funded the design and construction of some of the public lighting assets, and transferred the ownership and maintenance responsibilities to EnergyAustralia. In

this case (Rate 2), the public lighting service includes asset management costs as well as operating and maintenance expenses consistent with categories a) and b) above, but does not include any return on or return of invested capital under category e).

Still other Local Councils and other customers have retained ownership of the public lighting assets, and also retained responsibility for operation and maintenance. In this case, EnergyAustralia provides services on a “do and charge” basis, either in response to a customer request or an urgent issue. For these customers, known as “Rate 3” customers, this pricing submission does not develop a tariff for providing these services.

### **3.3. PRICES AT WHICH PUBLIC LIGHTING SERVICES ARE PROVIDED**

Consistent with the requirements of the (draft) NSW Public Lighting Code, this pricing proposal develops prices according to the assets in service:

#### 13 Billing

13.1 Bills provided by a Service Provider must identify separately the charge for each type of Public Lighting Service provided and must contain at least the following information:

- (a) Details of the number and type of lights operated and maintained; and
- (b) Any other information necessary for the Customer to verify the accuracy of an amount charged on the bill.

These prices are listed in Appendix 1.

### **3.4. TERMS AND CONDITIONS OF SERVICE**

As discussed in the DEUS NSW Public Lighting Code, the terms and conditions of services are encapsulated by the Service Level Agreement and the public lighting Management Plan.

### **3.5. OTHER INFORMATION**

Other information will be provided on request.

## 4. OVERALL COSTS OF CONSTRUCTION AND MAINTENANCE

...together with the basis of the costing methodology used by the DNSP to calculate those costs;

### 4.1. BUILDING BLOCK APPROACH

The pricing report has been developed using a building block approach, as used in the IPART distribution network Determination. The building block approach represents regulatory convention in Australia for determining appropriate revenues and/or prices relating to energy infrastructure. While not precluding a move to a different framework in the future, EnergyAustralia considers this approach to be the most appropriate methodology at this point in time.

The building block approach calculates the overall public lighting revenue requirement in terms of:

- a return on invested capital at the approved Weighted Average Cost of Capital;
- a return of capital based on depreciation; and
- efficient operating and maintenance costs.

These are developed more fully below.

EnergyAustralia also conducted a benchmarking exercise to compare its costs of providing public lighting services with those recently approved by the Essential Services Commission Victoria. EnergyAustralia compared its costs to those built up by the ESCV on a like for like basis. Adjusting for differences in the structure of public lighting prices to account for return and depreciation,<sup>8</sup> EnergyAustralia's analysis indicates that the proposed public lighting prices would be found to be fair and reasonable according to the ESCV criteria.

### 4.2. ASSET RELATED COSTS

Consistent with the building block approach, asset related costs include a return on and a return of invested capital, as discussed below.

#### 4.2.1. Asset valuation methodology

For the purpose of determining the target revenue requirement, assets have been valued using a Depreciated Optimised Replacement Cost methodology using actual replacement costs based on current supply contracts.

Each asset has been valued independently, according to its replacement cost. It should be noted that each asset class (for example, luminaires) has multiple individual types of assets, all of which have been costed separately.

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<sup>8</sup> Victoria's public lighting prices only allow for a return on and return of capital invested since public lighting became an excluded service in 2001.

In calculating the ceiling of the subsidy free zone, an Optimised Replacement Cost asset valuation methodology has been used, consistent with the Hypothetical New Entrant Test discussed above. Again this approach has used actual replacement costs based on current supply contracts.

In the optimisation process, the cost of dedicated overhead mains used to serve public lighting assets mounted on distribution poles has been excluded from the valuation. Similarly, the cost of dedicated underground public lighting cables in shared distribution system trenches has been excluded from the valuation.

Assets are generally valued as having half their useful life remaining.<sup>9</sup> This half life assumption means that new services are indeed charged at an average rate, assuming that the asset is already ten years old when installed.<sup>10</sup>

In both cases, the following adjustments have been made:

- No value has been ascribed to poles whose principal use is to support the distribution system; and
- The valuation of dedicated public lighting underground cables in dedicated trenches has excluded the cost of site rehabilitation.

### Public Lighting Inventory

In preparing this pricing report, EnergyAustralia has established a comprehensive, up-to-date inventory of public lighting assets, consisting of approximately 250,000 installations comprising luminaires, lamps, brackets, connections and supports.

These assets are tracked by customer, such that an inventory of public lighting assets can be prepared for each Local Council. This inventory listing forms the basis of charges levied for public lighting services in accordance with the draft NSW Public Lighting Code.

#### 4.2.2. Cost of Capital

Consistent with IPART's final Determination on the distribution network, EnergyAustralia has applied, for the purpose of these public lighting pricing proposals, a pre-tax real cost of capital of 7.0%. This pricing report does not discuss the derivation of this cost of capital; readers are referred to IPART's final Determination on the distribution network.

EnergyAustralia's adoption of this cost of capital for these pricing proposals should not be read as implying that EnergyAustralia believes this to be a reasonable return on investment, nor that it is reasonable that the public lighting system should earn the same return as the distribution network. Rather, EnergyAustralia has adopted this cost of capital as a matter of convenience to aid in the transition to pricing public lighting as an excluded service.

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<sup>9</sup> Dedicated public lighting assets have been valued according to their actual age and lives, supported by a more detailed asset inventory.

<sup>10</sup> This assumption results in a capital contribution being required to make up the NPV loss associated with construction of new public lighting installations, as discussed in section 6.5.

### 4.2.3. Depreciation

Depreciation is calculated using a straight line methodology based on a 20 year asset life for supports, brackets, luminaires and connections. Depreciation expenses are based on asset lives determined using the NSW Treasury Asset Valuation Guidelines and IPART's asset roll forward methodology. For tariff determination purposes, assets are assumed to have a steady state average age of half their useful life.<sup>11</sup>

EnergyAustralia's 2002/03 regulatory accounts indicate the average age of the public lighting system at 11.2 years. Allowing for an additional year of depreciation indicates that the 10 year average life assumption is reasonable at the end of the 2003/04 year.

Lamps are not depreciated, but rather included in operating and maintenance costs.

### 4.3. OPERATING AND MAINTENANCE COSTS

Operating costs for the public lighting system are primarily driven by lamp replacement requirements, which fall into two categories:

- bulk lamp replacement; and
- spot lamp replacement.

The cost of spot lamp replacement also includes the cost of servicing connections and luminaires where these are the cause of the outage.

Operating and maintenance expenses are driven by the time required for a crew to identify (through fault reports or night patrols) and repair a light under spot replacement, and the cost of the bulk lamp replacement program.

Based on discussions with Councils, the bulk replacement cycle will be 30 months for Traffic Routes and for Street Lights alike. Bulk lamp replacement is sourced by competitively tendered contract.

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<sup>11</sup> In the case of dedicated public lighting poles, wires and underground cables, the depreciation is based on the actual useful and remaining life.

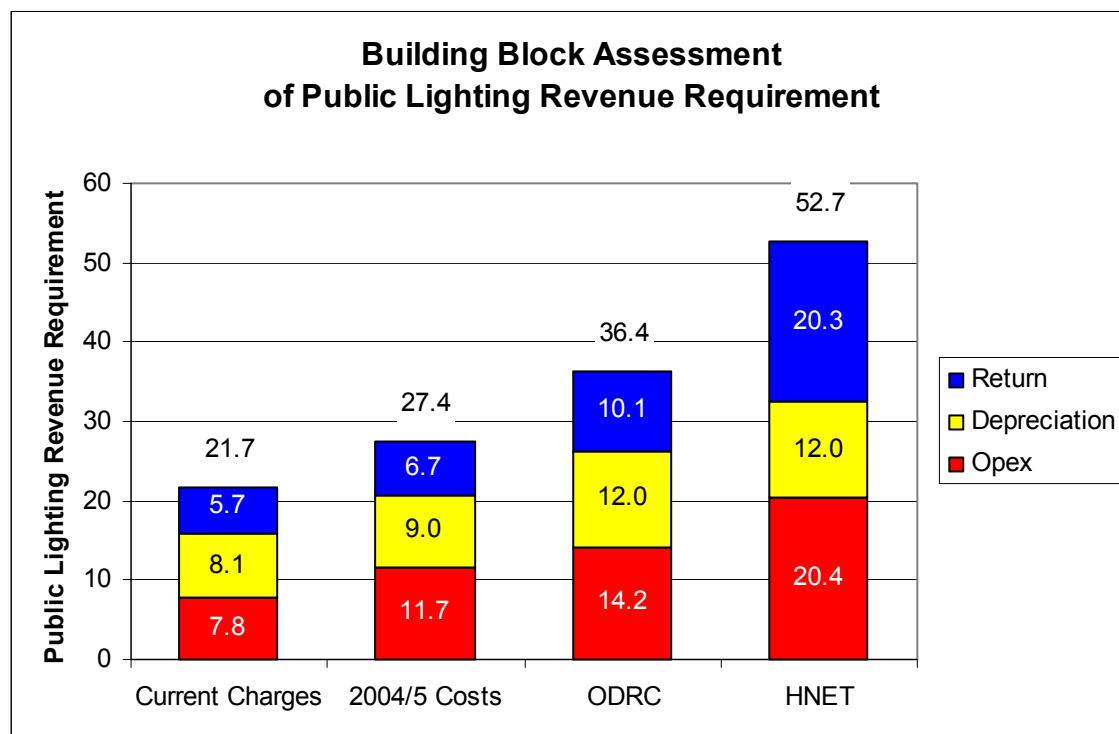
#### 4.4. SUMMARY

The following table summarises the calculation of the target revenue requirement and the top of the subsidy free zone.

**Table 4.2 – Summary of public lighting revenue requirement**

(\$000)	Current Revenues	Required Revenues	Subsidy free zone ceiling
<b>Return on capital:</b>			
Public lighting capital base		144,451	289,715
WACC		7.0%	7.0%
Return on capital		10,111	20,280
<b>Return of capital:</b>			
Depreciation		12,049	12,049
Total asset related costs		22,161	32,329
<b>Operating and maintenance costs:</b>			
Operating and maintenance		14,222	20,368
<b>Total building block costs</b>	<b>21,689</b>	<b>36,383</b>	<b>52,697</b>

**Figure 4.1 – Building block assessment of public lighting revenue requirement**



## 5. SERVICE STANDARDS

### 5.1. IPART REQUIREMENTS

#### 2.3 Public Lighting Regulatory Arrangements

(a) Any DNSP undertaking the construction or maintenance of Public Lighting Infrastructure must comply with all of the following requirements: ...

(2) additional information requirements: no later than two months prior to changing it prices for the construction or maintenance of Public Lighting Infrastructure, the DNSP must provide to the Tribunal a report setting out the following information: ...

(B) the service standards allowed for by the DNSP (for the provision of those Excluded Distribution Services during the same period) having regard to those costs;

### 5.2. ENERGYAUSTRALIA PROPOSAL

The service standards inherent in this pricing proposal reflect the Minimum Maintenance Standards and Guaranteed Service Levels in draft NSW Public Lighting Code:

As a minimum, the Public Lighting Service Provider must:

- a) operate a 24 hour call centre to receive public and Public Lighting Customer Fault Reports;
- b) ensure the maximum level of Luminaire outages at any one time is not greater than 5% of the Luminaire population;
- c) establish a system for the repair of faulty Public Lighting Assets, defining the relevant times for the repair of different types of equipment;
- d) repair a Public Lighting Asset within five working days from receipt of a Fault Report. However, in priority cases, such as high crime areas, or areas with high night time activity, Service Providers must endeavour to complete repairs more quickly;
- e) repair a Public Lighting Asset within three working days from receipt of a Fault Report involving supplementary floodlights at pedestrian crossings or groups of three or more lights on 'Category V' roads (as defined in the AS/NZS1158 series of standards); and
- f) undertake cyclic maintenance of Public Lighting Assets to ensure the efficient and safe operation of the system. A lamp replacement program must be established to achieve agreed maintenance standards and to maintain the designed lighting technical parameters of the Luminaire.



10.4 It is recognised that longer response times may be unavoidable in the following circumstances:

- a) severe weather conditions;
- b) major structural or cable damage;
- c) unavailability of non-standard equipment;
- d) large scale power outages and high risk situations where public safety and the restoration of power to consumers receive priority;
- e) restricted access to equipment; and
- f) remote locations as agreed with the Public Lighting Customer.

Consistent with the NSW Public Lighting Code, other service standards are open to negotiation with the individual public lighting customers.

The Local Councils participated extensively in developing the draft NSW Public Lighting Code, and are keen to see the improvements in service that will arise from the Code's implementation. EnergyAustralia also agrees that these improvements in service standards are reasonable and desirable.

However, EnergyAustralia understands that these improvement in service standards may be imposed as a licence condition, and that compliance will be mandatory. As the Public Lighting Code's required service standards are higher than those EnergyAustralia currently delivers, there will be additional operating costs associated with the required improvements in service standards. This is discussed in section 6.3.2.

## 6. PROSPECTIVE CHANGES IN PRICES OR RATES

... together with an outline of any changes in costs, the DNSP's costing methodology, or the service standards allowed for by the DNSP;

### 6.1. IPART REQUIREMENTS

#### 2.3 Public Lighting Regulatory Arrangements

(a) Any DNSP undertaking the construction or maintenance of Public Lighting Infrastructure must comply with all of the following requirements: ...

(2) additional information requirements: no later than two months prior to changing its prices for the construction or maintenance of Public Lighting Infrastructure, the DNSP must provide to the Tribunal a report setting out the following information: ...

(C) any prospective changes in the DNSP's prices or rates for the construction or maintenance of Public Lighting Infrastructure and an explanation of the reasons for the prospective changes; and

(D) an explanation of how the DNSP has considered the impact of its prospective price change on customers and how it has structured its prospective prices to take account of those impacts.

and

(3) customer impact: if the DNSP's prospective price changes for the construction and maintenance of Public Lighting Infrastructure would reasonably be expected to impose significant adjustment costs on those that must bear those price changes, the DNSP must implement transitional price options, a phased approach or other measures (whether as part of its prospective price changes or otherwise) which in the Tribunal's opinion are reasonable necessary to mitigate the effects of those adjustment costs, having regard to the nature and extent of those adjustment costs and the prospective changes.

This pricing proposal addresses IPART's requirements in this area on two levels:

- by item of public lighting inventory; and
- at an aggregate level.

The prospective changes in prices by public lighting inventory item is disclosed in Appendix 1. The aggregate price path is discussed in more detail in the following section.

However, charges for individual Councils will vary according to the inventory of brackets, luminaires, supports and dedicated assets in service. The charges incurred by individual Councils are confidential to those individual public lighting customers.

The reasons for these changes in prices have been developed throughout this document. In summary, they are:

- Recovery of the historical subsidy previously contributed by the distribution system charges during the period when public lighting assets were considered a distribution service. This subsidy is now unfunded;
- Recovery of the additional costs which are anticipated to be imposed upon EnergyAustralia in complying with the draft DEUS NSW Public Lighting Code; and
- Recovery of costs associated with dedicated public lighting assets, which have historically not been recovered under public lighting or distribution system pricing.

## **6.2. IMPACT OF CHANGES ON CUSTOMERS**

Each public lighting customer is served by a unique composition of assets. As public lighting prices are stated in terms of the cost of each public lighting component, the changes in particular public lighting customers' bills will vary according to the unique inventory of assets used to serve them. This public lighting report therefore focuses more on the impact on customers in aggregate.

It should be noted that the SLUOS component (the subject of this price report) makes up about two-thirds of the total public lighting costs to a local council. The balance is made up of energy costs and network use of system costs. Therefore, an increase in SLUOS charges will translate in a proportionately smaller increase in public lighting costs to the Local Council. For example, a 10 per cent increase in SLUOS costs would cause an increase in public lighting costs of about 6.7 per cent.

## **6.3. TRANSITIONAL ARRANGEMENTS**

IPART's PPM requires that:

10. Where distributor price strategies lead to proposed price movements or price restructuring that may be expected to impose significant adjustment costs on users, transitional price options, a phased approach or other measures should be offered to assist in the management of adjustment costs.

This requirement is mirrored in the Rule for the regulation of public lighting services.

EnergyAustralia recognises that it may be impractical to implement a one-time step change to recover the required increase in revenue requirement for the public lighting business. EnergyAustralia's approach is to examine the causes of the cost increases, and develop transitional plans responsive to those causes.

### **6.3.1. Change in regulatory framework**

In its 1999 determination, IPART bundled the public lighting operations into the Network business. As a result the public lighting building block components were added to those of the network and included in the overall allowable revenues of distributors.

Although actual revenues from public lighting customers did not recover public lighting costs, the total Network allowable revenue included these amounts and therefore all allowable public

lighting revenues were recovered (or recoverable) from other Network customers. The shortfall in public lighting revenues was recovered from other Network customers.

However, IPART's 2004 Determination classified public lighting as an Excluded Service, and removed any revenues associated with public lighting. Under this treatment, the network revenues were determined to recover only network costs; there was no scope for any additional revenues to support the historical revenue shortfall in the public lighting business.

Consistent with clause 14.2(a)(7) of IPART's final Determination on the distribution network, EnergyAustralia considers that this revenue shortfall in the public lighting business has occurred solely as a consequence of the change in the regulatory framework. EnergyAustralia considers that, were such a change in the regulatory framework applicable to the distribution network, its impact would qualify as a pass through event under the distribution network Determination.

EnergyAustralia therefore proposes to apply this same reasoning to the revenue shortfall accruing to the public lighting system arising from the imposed change in regulatory framework. While no formal pass through arrangement is applicable to the public lighting revenue requirement, the same result can be achieved by recovering this revenue shortfall via a  $P_0$  adjustment.

As demonstrated below, the amount of revenue shortfall resulting from the change in regulatory framework is above the 1% materiality threshold envisioned in subsection 14.6 of the network Determination.

### Calculating the status quo public lighting revenue requirement

In the lead up to the 2004 Determination, one of IPART's decisions was whether or not to move public lighting from a distribution service to an excluded service. While a decision on this issue was pending, EnergyAustralia and the other distribution businesses were required to submit information relating to the public lighting business. Similarly, the consultant conducting IPART's total cost review reported on the appropriate levels of operating and capital expenditure for the public lighting business. These amounts were included in the IPART financial model. IPART's financial model also included a roll forward of the public lighting capital base, conducted in the same manner as for the distribution network assets. The IPART model includes a switch to allow the total Revenue Requirement to be calculated with public lighting as an excluded service or as a prescribed service.

To calculate the status quo public lighting revenue requirement, EnergyAustralia set the switch in the IPART financial model to calculate public lighting as a prescribed service.<sup>12</sup> The resulting 2005 revenue requirement (including the public lighting system) was then compared to the 2005 revenue requirement in the 2004 Determination (excluding the public lighting system). The difference between these two amounts represents the revenue requirement applicable to the public lighting business on the assumption that it had not been treated as an excluded service:

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<sup>12</sup> Assuming 10 years remaining of a 20 year life.

2004/05 revenue requirement including public lighting (\$000)	766,240
2004/05 distribution system revenue requirement	738,879
2004/05 public lighting status quo revenue requirement	27,361

EnergyAustralia believes that, in the absence of the regulatory change classifying public lighting as an excluded service, this amount would have been included in the revenue requirement and recovered from distribution and public lighting customers through the weighted average price cap.

The difference between the 2004/5 public lighting status quo revenue requirement and the current revenues represents the shortfall caused by the change in the regulatory framework:

2004/05 public lighting status quo revenue requirement (\$000)	27,361
2003/04 public lighting revenues	21,689 <sup>13</sup>
Revenue shortfall caused by change in regulatory framework	5,672

Consistent with the approach to passing through additional costs caused by regulatory change in the IPART 2004 distribution Determination, EnergyAustralia proposes to implement a  $P_0$  adjustment to recover this revenue shortfall caused by the change in regulatory framework.

It should be noted that this amount would have been recovered had the proposed  $P_0$  adjustment been implemented effective 1 July 2004. However, if the  $P_0$  adjustment is implemented effective 1 January 2005, only half of this amount will be recovered; the balance will be lost.

### 6.3.2. Costs imposed by regulatory change

The 2004 network Determination also provides for a pass through of costs resulting from changes to relevant regulation “imposing minimum standards on a DNSP in respect of the provision of ... Services that are different from the minimum standards imposed on that DNSP in respect of the provision of ... Services immediately prior to that event.”

In this case, the regulatory change is the adoption of the NSW Public Lighting Code. The Public Lighting Code has been released for an abbreviated public comment period, and could be recognised by the end of the current year.

Among other things, the Public Lighting Code sets out minimum maintenance standards with associated service level guarantees and minimum requirements for inventories, management plans, performance reporting and billing. These standards exceed the standards currently maintained by EnergyAustralia’s public lighting business.

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<sup>13</sup> It should be noted that EnergyAustralia did not implement a CPI price increase effective 1 July 2004. Therefore public lighting customers have indeed received a real price decrease.

EnergyAustralia proposes a “P<sub>1</sub>” treatment for costs imposed by this regulatory change, similar to the approach adopted for pass through in the distribution Determination. The increase in public lighting revenues would coincide with the expected timing of the Public Lighting Code coming into effect, and the timing of the consequential increased costs for compliance.

Additional costs of complying with the Public Lighting Code include the cost of establishing and equipping six additional dedicated public lighting crews, night patrols, additional bulk lamp replacement programs, and additional requirements for record keeping and data management. EnergyAustralia estimates additional operating costs of \$2.28 million per year to meet these new requirements.

These amount are above the 1% materiality threshold embodied in the network Determination.

### 6.3.3. Costs associated with dedicated public lighting assets

As discussed in Appendix 2, there are a number of dedicated public lighting assets which were not included in the 1999 network Determination. These assets are genuinely required to provide the public lighting service.

These dedicated public lighting assets should be distinguished from the concept of “found assets” discussed in the 2004 Determination. In rejecting the DNSPs’ applications to include “found assets” in the capital base, IPART argued that the 1999 Regulatory Asset Base represented a financial investment in the business rather than an inventory of specific assets. It was incongruous, under the financial capital approach according to IPART, to later adjust the asset base for specific assets.

However, it is not the case that the dedicated public lighting assets in question were not counted in determining the 1999 regulatory asset base. In contrast, these dedicated public lighting assets were identified and excluded from the calculation of the financial investment in the distribution network.

It is therefore consistent that these public lighting assets, which:

- were previously excluded from the financial capital base of the distribution network; and
- are required to provide service to public lighting customers;

should be included in the asset base for the public lighting service.

While excluding these assets from the 1999 network Determination does represent an error in that Determination, correctly including these assets in the cost of providing the public lighting service is not caused by a change in legislation or regulation. EnergyAustralia therefore proposes that these additional costs be recovered through a transitional mechanism rather than a P<sub>0</sub> adjustment in order to provide a reasonable transition path to achieve a commercial return on these assets.<sup>14</sup>

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<sup>14</sup> It should be noted that EnergyAustralia’s approach will still result in an NPV loss on these assets; however, to ameliorate the ongoing financial cost on the business, EnergyAustralia has proposed a transitional solution that is not unduly onerous to its customers.

## 6.4. TERM OF PRICING PROPOSALS

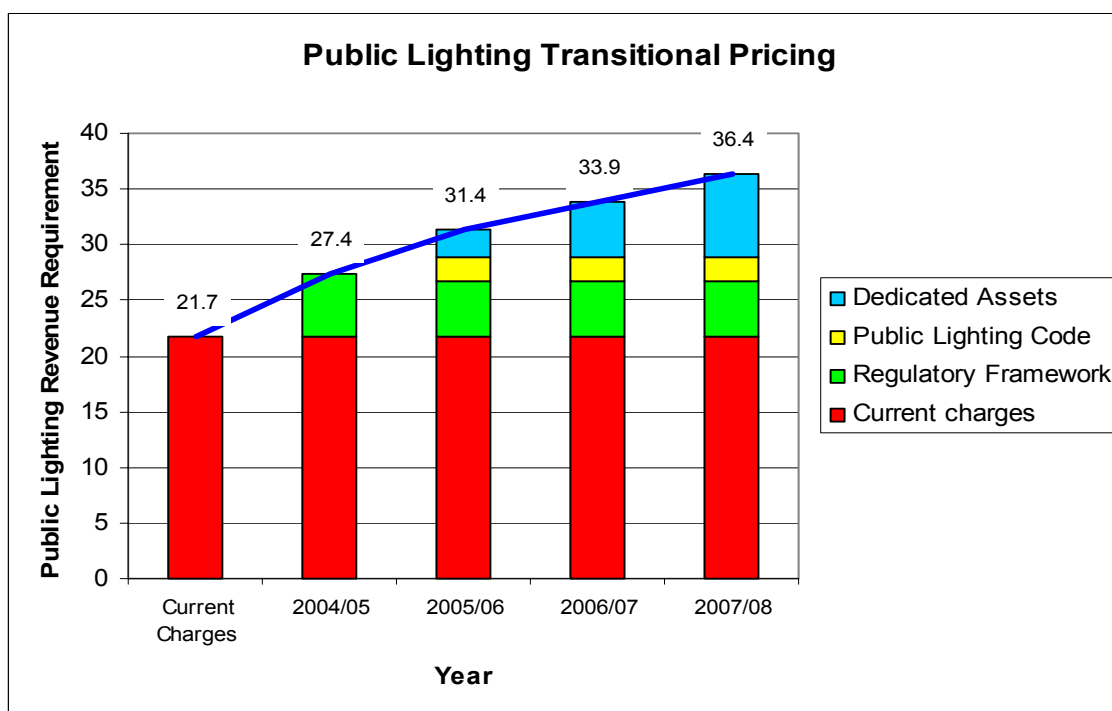
As discussed previously, EnergyAustralia proposes to recover the costs associated with regulatory framework changes through  $P_0$  and  $P_1$  adjustments. EnergyAustralia then proposes to transition prices to recover the target revenue requirement over the following two years, using a CPI+X escalation to transition prices to recover costs over the term of the price path.

It should be noted that the target revenue requirement has been calculated in 2004/05 dollars; therefore, the necessary price increases must reflect the ongoing indexation of the capital base and ongoing increases in operating costs. They are therefore stated in real terms.

**Table 8.1 – Public lighting transitional price path**

Current public lighting revenues		\$21.7 m
$P_0$ Adjustment – change to regulatory framework		\$5.7 m
Total public lighting revenues, Year 1	CPI+ 26%	\$27.4 m
$P_1$ Adjustment – Public Lighting Code costs <sup>15</sup>		\$1.5 m
Dedicated asset costs transition		\$2.5 m
Total revenues, Year 2	CPI+ 15%	\$31.4 m
Dedicated asset costs transition		\$2.5 m
Total revenues, Year 3	CPI+ 8%	\$33.9 m
Dedicated asset costs transition		\$2.5 m
Total revenues, Year 4	CPI+ 7%	\$36.4 m

**Figure 8.1 – Public Lighting transitional pricing**



<sup>15</sup> Also included in this amount is an adjustment reflecting reductions in operating costs from that forecast in the IPART 2004/5 public lighting modelling.

## Price movements during the term of this pricing proposal

Once the price changes proposed in this submission are in place, EnergyAustralia will seek further IPART approval for any changes during the five year period other than in the circumstances set out below in relation to CPI changes and unforeseen changes in costs.

The prices listed in Appendix 1 are stated in real terms. Therefore, EnergyAustralia will change prices each year by the change in the Consumer Price Index in a manner consistent with that outlined in the IPART Determination on the distribution network.

During the term of this pricing proposal, EnergyAustralia will also amend prices to take account of any material unforeseen changes in costs, applying the same materiality protocols as the IPART Determination on the distribution network with respect to general cost pass through.

## 6.5. ADDING NEW PUBLIC LIGHTING INSTALLATIONS

### New dedicated public lighting installations

The design and construction of new public lighting installations using dedicated assets is a distinct service from the ownership, management and maintenance of public lighting assets. Therefore, EnergyAustralia does not propose to publish a price for these services; rather it will provide a competitive quote for new public lighting installations based on the relevant pricing principles.

Consistent with EnergyAustralia's proposed disclosure document in accordance with clause 2.2 of IPART's June 2004 *Regulation of Excluded Distribution Services Rule 2004/1*, the pricing of new dedicated public lighting installations will be conducted in a similar fashion to that for Customer Funded Connections:

Price	=	direct labour
	+	direct materials
	+	other direct costs
	+	profit margin
	+	10% GST.

The direct labour and materials charges outlined above include oncosts. These oncosts reflect the actual associated costs of providing the direct labour and materials and include employee privileges, local and corporate overheads relevant to the service.

The other direct costs refer to contracted services such as tree trimming, roadway under-bores, footway/roadway reinstatement etc.

The profit margin varies depending on the prevailing market conditions in which the service is provided.

The Rate 1 tariffs provided in Appendix 1 of this pricing report can apply in cases where the customer accepts EnergyAustralia's quote to install the new public lighting assets and provides a capital contribution equal to any shortfall between the cost of the installation and the present value of the public lighting tariffs over the life of the asset.

Where the public lighting customer constructs the assets using equipment on the standard luminaire list and transfers the operation and maintenance of those assets to EnergyAustralia,



then the Rate 2 tariffs provided in Appendix 1 will apply.

Where the public lighting customer constructs the public lighting installation using non-standard equipment, EnergyAustralia is pleased to provide a negotiated tariff for the operation and maintenance on these assets. Those charges will be developed using the same principles as those underpinning the tariffs provided in this pricing report.

#### [New public lighting installations on existing EnergyAustralia assets](#)

Where a public lighting customer requires new public lighting assets to be constructed on existing EnergyAustralia dedicated or network poles, the Rate 1 tariffs in Appendix 1 apply. Where the public lighting customer elects to finance the capital cost of the installation, then the operating and maintenance of the installation will be conducted under Rate 2.

This category also applies to the replacement of existing assets on EnergyAustralia infrastructure that are currently charged at Rate 2. Subject to customer agreement, EnergyAustralia will fund the replacement poles, steel standards, luminaires and lamps. These installations will then transition from Rate 2 to Rate 1.

# APPENDIX 1

## PUBLIC LIGHTING PRICE LIST

This Appendix provides the inventory of standard public lighting assets and current list of supported non-standard assets (per the NSW Public Lighting Code) and prices over the term of this price proposal.

Note that these prices are in 2004/5 currency and are subject to annual CPI escalation.

### Application

The Rate 1 prices are applicable to:

1. Existing public lighting installations on EnergyAustralia dedicated and network poles where EnergyAustralia has funded the installation. Most of these installations predate contestability.
2. New installations of brackets, luminaires and lamps on EnergyAustralia dedicated public lighting poles or existing network poles.
3. Replacement of existing assets where
  - a) EnergyAustralia has funded the initial asset installation cost, or
  - b) The assets are currently mounted on EnergyAustralia infrastructure and charged at Rate 2. Subject to customer agreement, EnergyAustralia will fund the new poles, steel standards, luminaires and lamps. These installations will then transition from Rate 2 to Rate 1.
4. Installation of dedicated lights on dedicated steel standards where the customer agrees to pay a capital contribution to cover any shortfall between the present value of the scheduled tariffs and the quoted installation costs.

The charges for dedicated public lighting assets are for those assets in service (pre-dating the contestability regime) which are dedicated to the public lighting system and do not operate in parallel to the EnergyAustralia distribution system.

The Rate 2 tariffs are for assets built under the contestable framework where EnergyAustralia has accepted the transfer of the assets and EnergyAustralia is responsible for the ongoing operation and maintenance of those assets.

EnergyAustralia will accept the transfer of new standard public lighting assets which meet network standards, and will charge for their ongoing operation and maintenance as Rate 2 tariff assets.

BRACKET	Prices 2004-05 (Excluding GST)		Prices 2005-2008 (Excluding GST)	
	Rate 1	Rate 2	Rate 1	Rate 2
Type 1 ( 2m outreach )	\$27.54	Nil	\$27.54	Nil
Type 2 ( 3m outreach )	\$46.92	Nil	\$46.92	Nil
Type 3 ( 3m outreach )	\$47.25	Nil	\$47.25	Nil
Type 4 ( 2m outreach )	\$52.65	Nil	\$52.65	Nil
Type 5 ( 2m outreach )	\$52.65	Nil	\$52.65	Nil
Type 6 ( 6m outreach )	\$53.84	Nil	\$53.84	Nil
Type 7 ( 4m outreach )	\$53.96	Nil	\$53.96	Nil
Type 2A ( 3m outreach )	\$46.92	Nil	\$46.92	Nil
Type 3A ( 4.5m outreach )	\$47.25	Nil	\$47.25	Nil
0.5 m Outreach Bracket	\$15.42	Nil	\$15.42	Nil
0.6 m Outreach Bracket	\$15.42	Nil	\$15.42	Nil
1 m Outreach Bracket	\$15.10	Nil	\$15.10	Nil
1.5 m Outreach Bracket	\$30.02	Nil	\$30.02	Nil
2m Outreach Bracket	\$20.07	Nil	\$20.07	Nil
2.5 m Outreach Bracket	\$34.17	Nil	\$34.17	Nil
3 m Outreach Bracket	\$43.35	Nil	\$43.35	Nil
3.5 m Outreach Bracket	\$42.49	Nil	\$42.49	Nil
4 m Outreach Bracket	\$42.49	Nil	\$42.49	Nil
4.5 m Outreach Bracket	\$46.60	Nil	\$46.60	Nil
5 m Outreach Bracket	\$47.25	Nil	\$47.25	Nil
6 m Outreach Bracket	\$53.84	Nil	\$53.84	Nil
6.5 m Outreach Bracket	\$53.84	Nil	\$53.84	Nil
7 m Outreach Bracket	\$53.96	Nil	\$53.96	Nil
8 m Outreach Bracket	\$53.96	Nil	\$53.96	Nil
SUSPENDED	\$47.01	Nil	\$47.01	Nil
Private supplied bracket	Nil	Nil	Nil	Nil
1.2 m Outreach Bracket	\$15.10	Nil	\$15.10	Nil
C4	\$203.90	Nil	\$203.90	Nil

CONNECTION	Prices 2004-05 (Excluding GST)		Prices 2005-2008 (Excluding GST)	
	Rate 1	Rate 2	Rate 1	Rate 2
Overhead connection	Nil	Nil	Nil	Nil
Overhead rate 2 connection	Nil	Nil	Nil	Nil
Overhead special connection	Nil	Nil	Nil	Nil
Underground rate 1 connection	\$68.75	N/A	\$68.75	N/A
Underground rate 2 connection ( 2 <sup>nd</sup> light)	N/A	Nil	N/A	Nil
Underground special connection	Nil	Nil	Nil	Nil
Underground rate 2 connection	\$25.00	\$25.00	\$25.00	\$25.00
Underground / Overhead	\$75.00	\$75.00	\$75.00	\$75.00
Underground connection , Newcastle , 2 arm	\$37.50	\$37.50	\$37.50	\$37.50

LAMP	Prices 2004-05 (Excluding GST)		Prices 2005-2008 (Excluding GST)	
	Rate 1	Rate 2	Rate 1	Rate 2
Incandescent 1*40	\$132.07	\$132.07	\$163.71	\$163.71
Incandescent 1*60	\$132.07	\$132.07	\$163.71	\$163.71
Incandescent 1*75	\$132.07	\$132.07	\$163.71	\$163.71
Incandescent 1*100	\$132.07	\$132.07	\$163.71	\$163.71
Incandescent 3*100	\$138.43	\$138.43	\$171.29	\$171.29
Incandescent 1*150	\$134.12	\$134.12	\$166.16	\$166.16
Incandescent 1*200	\$135.81	\$135.81	\$168.17	\$168.17
Incandescent 1*300	\$155.08	\$155.08	\$191.13	\$191.13
Incandescent 1*500	\$185.01	\$185.01	\$226.80	\$226.80
Incandescent 1*1000	\$222.44	\$222.44	\$271.39	\$271.39
Mercury Fluorescent 1*50	\$22.98	\$22.98	\$24.45	\$24.45
Mercury Fluorescent 1*80	\$22.86	\$22.86	\$24.33	\$24.33
Mercury Fluorescent 2*80	\$24.48	\$24.48	\$26.00	\$26.00
Mercury Fluorescent 3*80	\$26.12	\$26.12	\$27.68	\$27.68
Mercury Fluorescent 4*80	\$27.75	\$27.75	\$29.36	\$29.36
Mercury Fluorescent 7*80	\$34.27	\$34.27	\$36.05	\$36.05
Mercury Fluorescent 1*125	\$32.14	\$32.14	\$35.86	\$35.86
Mercury Fluorescent 2*125	\$33.74	\$33.74	\$37.53	\$37.53
Mercury Fluorescent 6*125	\$43.09	\$43.09	\$47.26	\$47.26
Mercury Fluorescent 1*250	\$34.37	\$34.37	\$38.18	\$38.18
Mercury Fluorescent 3*250	\$44.98	\$44.98	\$49.23	\$49.23
Mercury Fluorescent 1*400	\$46.21	\$46.21	\$53.11	\$53.11
Mercury Fluorescent 2*400	\$52.89	\$52.89	\$60.24	\$60.24
Mercury Fluorescent 3*400	\$59.59	\$59.59	\$67.39	\$67.39
Mercury Fluorescent 1*700	\$69.12	\$69.12	\$77.55	\$77.55
Mercury Fluorescent 1*800	\$87.65	\$87.65	\$97.31	\$97.31
Mercury Fluorescent 1*1000	\$77.52	\$77.52	\$83.11	\$83.11
Mercury Fluorescent 4*1000	\$352.09	\$352.09	\$369.03	\$369.03
Metal Halide 1*70	\$51.92	\$51.92	\$56.82	\$56.82
Metal Halide 1*100	\$66.61	\$66.61	\$75.55	\$75.55
Metal Halide 1*150	\$108.07	\$108.07	\$119.99	\$119.99
Metal Halide 1*250	\$63.24	\$63.24	\$71.93	\$71.93
Metal Halide 1*400	\$59.95	\$59.95	\$66.74	\$66.74
Metal Halide 1*500	\$77.36	\$77.36	\$85.15	\$85.15
Metal Halide 1*1500	\$103.54	\$103.54	\$115.13	\$115.13
High Pressure Sodium 1*50	\$43.31	\$43.31	\$49.20	\$49.20
High Pressure Sodium 1*70	\$38.30	\$38.30	\$42.84	\$42.84
High Pressure Sodium 2*70	\$46.90	\$46.90	\$52.21	\$52.21
High Pressure Sodium 3*70	\$54.52	\$54.52	\$60.34	\$60.34
High Pressure Sodium 1*100	\$52.03	\$52.03	\$58.36	\$58.36
High Pressure Sodium *150	\$45.58	\$45.58	\$51.54	\$51.54
High Pressure Sodium 1*220	\$49.67	\$49.67	\$55.86	\$55.86
High Pressure Sodium 1*250	\$45.58	\$45.58	\$51.54	\$51.54
High Pressure Sodium 2*250	\$58.71	\$58.71	\$66.12	\$66.12
High Pressure Sodium 4*250	\$81.08	\$81.08	\$90.30	\$90.30

	<b>Prices 2004-05</b> (Excluding GST)		<b>Prices 2005-2008</b> (Excluding GST)	
High Pressure Sodium 1*310	\$57.12	\$57.12	\$63.75	\$63.75
High Pressure Sodium 1*400	\$46.29	\$46.29	\$52.29	\$52.29
High Pressure Sodium 2*400	\$61.80	\$61.80	\$69.74	\$69.74
High Pressure Sodium 4*600	\$158.83	\$158.83	\$173.22	\$173.22
High Pressure Sodium 6*600	\$218.49	\$218.49	\$236.84	\$236.84
High Pressure Sodium 1*1000	\$89.34	\$89.34	\$97.83	\$97.83
Low Pressure Sodium 1*90	\$81.13	\$81.13	\$89.34	\$89.34
Low Pressure Sodium 1*135	\$95.21	\$95.21	\$105.37	\$105.37
Low Pressure Sodium 1*180	\$147.17	\$147.17	\$160.78	\$160.78
Tubular Fluorescent 4*15	\$55.09	\$55.09	\$65.83	\$65.83
Tubular Fluorescent 1*20	\$55.99	\$55.99	\$66.84	\$66.84
Tubular Fluorescent 2*20	\$56.90	\$56.90	\$67.87	\$67.87
Tubular Fluorescent 3*20	\$57.81	\$57.81	\$68.88	\$68.88
Tubular Fluorescent 4*20	\$58.71	\$58.71	\$69.89	\$69.89
Tubular Fluorescent 6*20	\$60.53	\$60.53	\$71.93	\$71.93
Tubular Fluorescent 1*26	\$55.99	\$55.99	\$66.84	\$66.84
Tubular Fluorescent 6*36	\$60.64	\$60.64	\$72.06	\$72.06
Tubular Fluorescent 1*40	\$56.01	\$56.01	\$66.86	\$66.86
Tubular Fluorescent 2*40	\$56.94	\$56.94	\$67.91	\$67.91
Tubular Fluorescent 3*40	\$57.86	\$57.86	\$68.95	\$68.95
Tubular Fluorescent 4*40	\$58.80	\$58.80	\$69.99	\$69.99
Tubular Fluorescent 1*80	\$57.02	\$57.02	\$68.00	\$68.00
Tubular Fluorescent 2*80	\$58.95	\$58.95	\$70.17	\$70.17
Tubular Fluorescent 3*80	\$60.89	\$60.89	\$72.34	\$72.34
Tungsten Halogen 1*400	\$236.26	\$236.26	\$292.61	\$292.61
Tungsten Halogen 1*500	\$199.78	\$199.78	\$249.14	\$249.14
Tungsten Halogen 1*750	\$220.83	\$220.83	\$274.22	\$274.22
Tungsten Halogen 1*1000	\$46.68	\$46.68	\$52.38	\$52.38
Tungsten Halogen 1*1500	\$44.17	\$44.17	\$49.73	\$49.73
Mercury Fluorescent 1*500	\$87.65	\$87.65	\$97.31	\$97.31
Tubular Fluorescent 2*14W (T5)	\$18.73	\$18.73	\$19.29	\$19.29

	Prices 2004-05 (Excluding GST)		Prices 2005-2008 (Excluding GST)	
	Rate 1	Rate 2	Rate 1	Rate 2
<b>SUPPORT</b>				
Distribution system Wood Pole non-Traffic route light	Nil	Nil	Nil	Nil
Distribution system Wood Pole Traffic Route Light	Nil	Nil	Nil	Nil
Wall	\$21.70	Nil	\$21.70	Nil
Suspended	\$203.90	Nil	\$203.90	Nil
Bollard	\$121.94	Nil	\$121.94	Nil
Decorative Column	\$247.15	Nil	\$247.15	Nil
Private supplied support	Nil	Nil	Nil	Nil
Rocks Standard	\$162.64	Nil	\$162.64	Nil
Macquarie Standard	\$179.03	Nil	\$179.03	Nil
Hyde Park Standard	\$278.50	Nil	\$278.50	Nil
Column 2.5m-3.5m	\$185.20	Nil	\$185.20	Nil
Column 4m-6.5m	\$203.90	Nil	\$203.90	Nil
Column 7m-10m	\$230.93	Nil	\$230.93	Nil
Column 10.5m-13.5m	\$209.30	Nil	\$209.30	Nil
Column 14m-15m	\$214.71	Nil	\$214.71	Nil
Mast 15.5m-30m	\$225.52	Nil	\$225.52	Nil
Mast 23m	\$225.52	Nil	\$225.52	Nil
Mast 25m	\$225.52	Nil	\$225.52	Nil
Orion Double Arm	\$10.56	Nil	\$10.56	Nil
Column 4-6.5m Orion Water Pipe	\$203.90	Nil	\$203.90	Nil
Polo 10.5m decorative 2m outreach	\$10.56	Nil	\$10.56	Nil

	Prices 2004-05 (Excluding GST)		Prices 2005-2008 (Excluding GST)	
<b>Luminaire</b>	<b>Rate 1</b>	<b>Rate 2</b>	<b>Rate 1</b>	<b>Rate 2</b>
2*20W Tubular Fluorescent	\$9.72	Nil	\$9.72	Nil
4*20W Tubular Fluorescent	\$44.34	Nil	\$44.34	Nil
1*40W Tubular Fluorescent	\$9.81	Nil	\$9.81	Nil
2*40W Tubular Fluorescent	\$22.80	Nil	\$22.80	Nil
4*40W Tubular Fluorescent	\$55.23	Nil	\$55.23	Nil
1*80W Tubular Fluorescent	\$7.87	Nil	\$7.87	Nil
50W Mercury Fluorescent	\$9.33	Nil	\$9.33	Nil
80W Mercury Fluorescent	\$9.33	Nil	\$9.33	Nil
125W Mercury Fluorescent	\$11.83	Nil	\$11.83	Nil
50W High Pressure Sodium	\$10.24	Nil	\$10.24	Nil
70W High Pressure Sodium	\$10.37	Nil	\$10.37	Nil
100W High Pressure Sodium	\$18.96	Nil	\$18.96	Nil
90W Low Pressure Sodium	\$44.42	Nil	\$44.42	Nil
250W Mercury Fluorescent	\$17.34	Nil	\$17.34	Nil
400W Mercury Fluorescent	\$24.68	Nil	\$24.68	Nil
700W Mercury Fluorescent	\$27.39	Nil	\$27.39	Nil
1000W Mercury Fluorescent	\$27.39	Nil	\$27.39	Nil
150W High Pressure Sodium	\$18.74	Nil	\$18.74	Nil
250W High Pressure Sodium	\$18.63	Nil	\$18.63	Nil
400W High Pressure Sodium	\$24.68	Nil	\$24.68	Nil
1000W High Pressure Sodium	\$141.1	Nil	\$141.1	Nil
135W Low Pressure Sodium	\$29.77	Nil	\$29.77	Nil
180W Low Pressure Sodium	\$35.17	Nil	\$35.17	Nil
125w/250w Mercury Fluorescent Floodlight	\$25.01	Nil	\$25.01	Nil
400W Mercury Fluorescent Floodlight	\$64.36	Nil	\$64.36	Nil
700W Mercury Fluorescent Floodlight	\$60.69	Nil	\$60.69	Nil
70W High Pressure Sodium Floodlight	\$18.46	Nil	\$18.46	Nil
100W High Pressure Sodium Floodlight	\$48.04	Nil	\$48.04	Nil
150W High Pressure Sodium Floodlight	\$48.04	Nil	\$48.04	Nil
250W High Pressure Sodium Floodlight	\$32.64	Nil	\$32.64	Nil
2*250W High Pressure Sodium Floodlight	\$56.80	Nil	\$56.80	Nil
400W High Pressure Sodium Floodlight	\$69.99	Nil	\$69.99	Nil
2*400W High Pressure Sodium Floodlight	\$132.16	Nil	\$132.16	Nil
1000W High Pressure Sodium Floodlight	\$74.31	Nil	\$74.31	Nil
100W Metal Halide Floodlight	\$27.39	Nil	\$27.39	Nil
150W/250W Metal Halide Floodlight	\$63.72	Nil	\$63.72	Nil
400W Metal Halide Floodlight	\$43.83	Nil	\$43.83	Nil
2*400W Metal Halide Floodlight	\$121.13	Nil	\$121.13	Nil
500W Metal Halide Floodlight	\$60.69	Nil	\$60.69	Nil
750W Metal Halide Floodlight	\$60.69	Nil	\$60.69	Nil
1000W/1500W Metal Halide Floodlight	\$107.40	Nil	\$107.40	Nil
Tungsten Halogen Floodlight	\$782.83	Nil	\$782.83	Nil
4*600W High Pressure Sodium	\$110.86	Nil	\$110.86	Nil
4*1000W Mercury Fluorescent	\$101.34	Nil	\$101.34	Nil
6*600W High Pressure Sodium	\$126.00	Nil	\$126.00	Nil

	Prices 2004-05 (Excluding GST)		Prices 2005-2008 (Excluding GST)	
4*250W High Pressure Sodium	\$66.32	Nil	\$66.32	Nil
50W Mercury Fluorescent Bollard	\$32.52	Nil	\$32.52	Nil
80W Mercury Fluorescent Bollard	\$32.52	Nil	\$32.52	Nil
70W High Pressure Sodium Bollard	\$44.64	Nil	\$44.64	Nil
2*20W Tubular Fluorescent - WAVERLEY	\$22.80	Nil	\$22.80	Nil
4*20W Tubular Fluorescent - WAVERLEY	\$44.34	Nil	\$44.34	Nil
4*40W Tubular Fluorescent - WAVERLEY	\$50.30	Nil	\$50.30	Nil
70W High Pressure Sodium -PLAIN	\$10.37	Nil	\$10.37	Nil
100W High Pressure Sodium -PLAIN	\$18.96	Nil	\$18.96	Nil
150W High Pressure Sodium - Parkway 1	\$34.85	Nil	\$34.85	Nil
250W High Pressure Sodium - Parkway 1	\$34.85	Nil	\$34.85	Nil
400W High Pressure Sodium - Parkway 1	\$34.85	Nil	\$34.85	Nil
50W Mercury Fluorescent - PLAIN	\$9.33	Nil	\$9.33	Nil
80W Mercury Fluorescent - PLAIN	\$9.06	Nil	\$9.06	Nil
125W Mercury Fluorescent -PLAIN	\$11.83	Nil	\$11.83	Nil
250W Mercury Fluorescent - Parkway 1	\$54.09	Nil	\$54.09	Nil
2*175W Mercury Fluorescent - Parkway 2	\$119.08	Nil	\$119.08	Nil
400W - Mercury Fluorescent Parkway 1	\$56.80	Nil	\$56.80	Nil
2*400W Mercury Fluorescent - Parkway 2	\$119.08	Nil	\$119.08	Nil
3*400W Mercury Fluorescent - Parkway 3	\$119.08	Nil	\$119.08	Nil
70W MBI - Macquarie Dec. Ball	\$107.94	Nil	\$107.94	Nil
2*26W TF Macquarie Dec. Ball	\$94.59	Nil	\$94.59	Nil
125W Mercury Fluorescent - Hyde Park	\$51.39	Nil	\$51.39	Nil
150W High Pressure Sodium - Hyde Park	\$51.39	Nil	\$51.39	Nil
50W Mercury Fluorescent - Nostalgia	\$58.58	Nil	\$58.58	Nil
80w Mercury Fluorescent - Nostalgia	\$58.58	Nil	\$58.58	Nil
50W High Pressure Sodium - Nostalgia	\$28.20	Nil	\$28.20	Nil
70W High Pressure Sodium - Nostalgia	\$63.02	Nil	\$63.02	Nil
50W Mercury Fluorescent - Bourke Hill	\$42.37	Nil	\$42.37	Nil
80W Mercury Fluorescent - Bourke Hill	\$42.37	Nil	\$42.37	Nil
2*80W Mercury Fluorescent - Bourke Hill	\$65.83	Nil	\$65.83	Nil
125W Mercury Fluorescent - Bourke Hill	\$72.37	Nil	\$72.37	Nil
70W High Pressure Sodium - Bourke Hill	\$68.64	Nil	\$68.64	Nil
80W Mercury Fluorescent - Regal/Flinders Enc	\$117.94	Nil	\$117.94	Nil
70W High Pressure Sodium - Regal/Flinders Enc	\$122.81	Nil	\$122.81	Nil
250W Mercury Fluorescent - Parkville	\$97.46	Nil	\$97.46	Nil
150W High Pressure Sodium - Parkville	\$105.23	Nil	\$105.23	Nil
250W High Pressure Sodium - Parkville	\$115.19	Nil	\$115.19	Nil
80W Mercury Fluorescent - Bega+Curve Bracket	\$107.02	Nil	\$107.02	Nil
250W High Pressure Sodium GEC 'Boston 3'	\$96.70	Nil	\$96.70	Nil
80W Mercury Fluorescent - GEC Boston 2	\$96.70	Nil	\$96.70	Nil
Incandescent	\$4.42	Nil	\$4.42	Nil
70W High Pressure Sodium - GEC Boston 2	\$53.96	Nil	\$53.96	Nil
80W Mercury Fluorescent - Sylvania Suburban	\$9.33	Nil	\$9.33	Nil
2x14W Tubular Fluorescent - T5 Pierlight	\$9.72	Nil	\$9.72	Nil



<b>Dedicated public lighting system assets (Rate 1 only)</b>	<b>2004/05 (Excl GST)</b>	<b>2005/06 (Excl GST)</b>	<b>2006/07 (Excl GST)</b>	<b>2007/08 (Excl GST)</b>
Dedicated wood pole (each)	Nil	\$46.00	\$93.00	\$139.00
Dedicated overhead main (per metre)	Nil	\$0.30	\$0.60	\$0.90
Dedicated underground cable (per metre)	Nil	\$2.76	\$5.51	\$8.27

## APPENDIX 2

### DEDICATED PUBLIC LIGHTING ASSETS

The 1998 public lighting asset valuation had been conducted according to the NSW Treasury Guideline, which states in part:

#### Public Lighting

C.38 The standard costs for public lighting assume that separate control low voltage mains are not required. The cost of lamps erected on wood poles allow for light, bracket, connection cable, control cell and installation. For lamps using light standards the cost of the mast is included.

Accordingly, the cost of separate control low voltage mains on distribution system poles has not been included in the asset valuation. Similarly, the cost of dedicated public lighting underground cables operating in parallel to distribution system cables has also been excluded.

However, this exclusion process was applied with excess vigour in preparing the 1998 asset valuation. The result is that there are a series of assets which were not included in the original IPART asset valuation, which are genuinely required to provide the public lighting service:

- Dedicated public lighting poles and overhead wires.

Where a public lighting fixture is attached to a pole supporting distribution system assets, the pole is treated as a distribution system asset. No charges associated with these poles are assigned to the public lighting system; SLUOS charges do not include any costs associated with distribution system assets. Similarly, the cost of dedicated public lighting control wires attached to distribution system poles has also been excluded.

However, where a pole has been erected solely to support a public lighting fixture or a wire feeding a dedicated public lighting fixture, the full cost of this pole, and the circuit to power the attached light, relates exclusively to the public lighting system. This might occur, for example, on major traffic routes where the illumination requirements of Australian Standard AS/NZS1158 Road Lighting necessitates street lighting assets to be in place on both sides of the roadway. Where the distribution system might run down one side of the roadway, the series of poles on the other side would be dedicated street lighting poles.

Under the NSW Treasury Asset Valuation Guideline, the cost of dedicated public lighting overhead wires (as distinct from underbuilt wires) inherently includes the cost of the supporting poles. The process of excluding the separate control low voltage mains inadvertently excluded the cost of these dedicated mains and the supporting poles. Similarly, where the NSW Treasury Asset Valuation Guideline provided values for “street lighting wood pole”, the related value is for the public lighting equipment attached to the pole rather than for the pole itself.

EnergyAustralia conducted an extensive search of its systems to identify those poles in service which support only public lighting assets, and has included them in the public lighting asset inventory. Similarly, this process identified dedicated public lighting mains, which have also been included in the asset inventory. The valuation of these assets has been built up including the value of the pole, the value of the attached public lighting

equipment, and the value of the dedicated public lighting circuit (valued at the same rate as underbuilt circuit).

- Dedicated public lighting underground cables.

As with the case with dedicated overhead public lighting wires, there are also dedicated underground public lighting cables in areas where the distribution system is underground. This is generally the case in urban areas such as Sydney CBD. Using a similar reasoning to the dedicated poles assessment, where a public lighting cable shares a trench with the distribution system assets, the costs of the trenching etc are borne by the distribution system and recovered through DUOS charges. However, where the public lighting cable exists in a dedicated trench (no distribution system cables within 1 metre either side), then the cost of trenching is assigned to the public lighting system.

It should be noted that the cost of dedicated underground public lighting cables has been based on a “greenfields” asset valuation methodology. As most of the underground public lighting cables tend to be in urban areas, a “brownfields” asset valuation is dominated by site rehabilitation costs in urban areas. A good example is on George Street in the Sydney CBD, where the cost of site rehabilitation is greater than the cost of the cable and installation. EnergyAustralia has purposefully understated the replacement cost of these assets by using the greenfields valuation rather than the brownfields valuation.

No adjustment is required for standards used to support the public lighting assets serviced by dedicated underground circuits. These assets were previously included in the asset valuation conducted according to the NSW Treasury Asset Valuation Guideline.

These are assets which are required to operate the public lighting system which were not included in the asset valuation used by IPART in regulating DUOS charges. The costs of these excluded assets is summarised below.

**Table A2.1 – Excluded public lighting assets**

	Replacement cost	Depreciated replacement cost
Public lighting poles & overhead wires	57,002,863	26,124,178
Public lighting underground cables	59,156,536	31,550,152
Total	116,159,396	57,674,330

The revenue requirement impact of these dedicated assets, when valued at DORC, consists of a return and depreciation component, as follows:

**Table A2.2 – Excluded public lighting assets at DORC**

	Depreciation	Return on DORC	Impact on revenue requirement
Public lighting poles & overhead wires	2,453,934	1,828,692	4,282,627
Public lighting underground cables	985,942	2,208,511	3,194,453
Total	3,439,876	4,037,203	7,477,080

And when valued at replacement cost for the purposes of the Hypothetical New Entrant Test:

**Table A2.3 – Excluded public lighting assets at Replacement Cost**

	Depreciation	Return on Replacement Cost	Impact on HNET revenue requirement
Public lighting poles & overhead wires	2,453,934	3,990,200	6,444,135
Public lighting underground cables	985,942	4,140,957	5,126,900
Total	3,439,876	8,131,158	11,571,034

It should be noted that there are no additional operating costs calculated for these previously unincorporated assets. The assets have been in place and in service throughout the previous regulatory period. Therefore, any operating and maintenance costs associated with these assets has been incurred over the period, and is included in the operation and maintenance expenses amounts included here. There is not expected to be any increased operating costs associated with including these dedicated public lighting assets in the capital base.

It should be noted that the depreciation of dedicated public lighting assets does not follow the "half life" convention applied to other public lighting assets. In the transition from replacement costs to Depreciated Replacement Cost, EnergyAustralia's systems indicate that the dedicated poles and wires are, on average, 30 years old of a 45 year life. The dedicated underground cables are estimated to be 28 years old on average, out of a 60 year useful life.

## APPENDIX 3 (CONFIDENTIAL)