NETWORKS PRICING:
2004 REGULATORY RESET

FINAL DECISION PAPER:
PRICE REGULATION METHODOLOGY

NOVEMBER 2003

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1

INTRODUCTION

Background

1.1 Prices paid by network users for the conveyance of electricity through prescribed electricity networks in the Northern Territory are regulated under the Electricity Networks (Third Party Access) Code ("the Code")[1] which is a schedule to the *Electricity Networks (Third Party Access) Act 2000*.

1.2 Granting third-party access to an electricity network involves an unbundling of electricity supply into:

- *generation* services (relating to the production of electricity);
- *retail* services (relating to the sale of electricity to end-use customers); and
- *network* services (relating to the transportation of electricity from generators to end-use customers).

1.3 The network service provider occupies a strategic position in the electricity system, since a generator or retailer can only supply electricity to its customers if it can transport this electricity via the network. For effective competition in upstream and downstream markets with a transportation requirement, all parties – irrespective of their affiliation with the network service provider – must have access to the network.

1.4 Part 3 of the Code specifies the price regulation framework to be observed by the Commission and by the network service provider when setting the prices to be paid by network users for the conveyance of electricity through the electricity network. The Commission has been undertaking such regulation using a price regulation methodology that has been constant during the first regulatory control period ending on 30 June 2004.[2]

1.5 In the lead-up to the commencement of the second regulatory control period (the five-year period commencing 1 July 2004), the Code requires the Commission as regulator – in consultation with interested parties – to review the price regulation methodology used in the first regulatory control period. The Commission is referring to this review as the "2004 Regulatory Reset".

1.6 The 2004 Regulatory Reset has two stages:

- in stage 1, the methods used to regulate prices will be reviewed and, if necessary, changed; and

[1] The Code can be viewed on the legislation page of the Commission's website (www.utilicom.nt.gov.au). The Code was amended on 29 October 2003 to incorporate the price regulation-related amendments proposed by the Commission as part of its review of the Code published in April 2003.

[2] A regulatory control period is defined in clause 3 of the Code as the period between major price reviews (or 'resets') during which time the price regulation methodology used in setting prices is held constant.

- in stage 2, new price controls for the second regulatory control period will be implemented using the revised methods from stage 1.

1.7 Stage 1 of the reset was initiated by an Issues Paper published in July 2003.

1.8 Following its consideration of submissions received in response to the Issues Paper, the Commission published a draft decision on price regulation methodology issues in September 2003 ("Draft Decision"). Price regulation *methodology* involves the practical and technical detail for the administration of price regulation over which the Commission as regulator has a degree of discretion. Only when these methodology issues are settled (in stage 1) can the Commission turn to the issues that arise from *implementation* of the preferred methodologies (stage 2 of the reset).

1.9 A submission was received from the Power and Water Corporation ("Power and Water") in response to the Draft Decision.

Purpose of this Paper

1.10 This Paper presents and explains the Commission's final decision on the network price regulation methodology to apply under the Code during the second regulatory control period, including in light of the submissions made to the Commission.

Structure of this Paper

1.11 Chapter 2 overviews and details the Commission's decision.

1.12 Chapter 3 states the rationale for the Commission's decision.

1.13 Chapter 4 outlines the Commission's approach and timetable for implementing the decision.

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CHAPTER

2

DECISION

2.1 This chapter sets out the Commission's final decision regarding the network price regulation methodology to apply during the second regulatory control period.

2.2 The first section of this chapter overviews the final decision. The remaining sections provide more detail about key aspects of the chosen methodology.

Overview

2.3 The Commission has decided to adopt a *price cap* form of regulation in the second regulatory control period (rather than continue with the revenue cap approach used in the first regulatory control period). Hence, the Commission will base its price regulation on a calculation of each year's weighted average network access tariffs.

2.4 Fundamentally, in the second regulatory control period, the Commission will, for the regulated networks combined:

- with respect to 2003-04 ("year 0"), undertake a cost-based 'base year' adjustment of the weighted average of network access tariffs at the end of the first regulatory control period reflecting an updated building blocks analysis of the most recently available actual data; and
- then allow the adjusted weighted average of network access tariffs to be escalated year by year (i.e., years 1 through 5) during the second regulatory control period using a CPI-X price path that is based on relative efficiency improvements that are reasonably expected to be achieved rather than on forecasts of the network service provider's own costs.

Base period adjustment

2.5 The base year (year 0) adjustment is to be made to update the existing (i.e., 2003-04) tariffs, thereby deriving a revised weighted average of network access tariffs for 2003-04 (P_0"), as follows:

$$P_0" = P_0 * (1 + Z) \quad \text{... (1)}$$

where:

P_0 = the weighted average of approved individual network access tariffs being applied in 2003-04 (based on the first regulatory control period revenue cap); and

Z = a factor determined by the Commission prior to commencement of the second regulatory control period which indicates the extent to which the weighted average of network access tariffs applying in the first regulatory control period requires adjustment in order to form an appropriate basis for network access tariffs in the second regulatory control period.

2.6 The Commission will estimate the Z factor by undertaking a building blocks (i.e., cost-based) exercise with respect to the 2002-03 year only. The Commission will use actual data for 2002-03 to determine the Z factor, since no building blocks analysis was undertaken for 2003-04 – the extended year of the first regulatory control period – at the commencement of the first regulatory control period.

2.7 In undertaking the updated building blocks analysis for the 2002-03 year, the Commission will:

- roll forward the capital base from the 2001 revaluation (rather than the January 1999 valuation underlying the June 2000 revenue determination), subject to the Commission being satisfied that, relative to the figures used in the June 2000 revenue determination, (a) any assets 'discovered' since then do not deserve to be optimised, (b) assets acquired since then have been included at cost and (c) the replacement cost of existing assets has been escalated at no more than CPI;
- base the WACC on an updated *pre-tax real* calculation, applying the June 2000 methodology;
- base depreciation expense on the June 2000 methodology; and
- set total operating and maintenance ("O&M") expenses at a determined percentage based on the level considered achievable over time by a recent benchmarking study undertaken by Meyrick & Associates ("Meyrick"),[3] on an O&M base acceptable to the Commission.

Escalation arrangements

2.8 Once the updated base year weighted average tariff (P_0") has been determined by applying equation (1), the network service provider will be required annually to develop tariff schedules during the second regulatory control period that conform with the following constraint on weighted average tariffs (P_t, where 2004-05 is P_1, 2005-06 is P_2, etc.):

$$P_t \leq \left[P_{t-1} * (1 + (CPI_{t-1} / CPI_{t-2})) * (1 - (X_1 + X_2)) \right] \quad \text{... (2)}$$

where:

P_{t-1} = the weighted average of approved individual network access tariffs in the current year (i.e. the year preceding the year for which tariffs are being submitted for approval) where, when t = 1, $P_{t-1} = P_0$" (calculated using equation (1));

CPI = a 100 based index, being the all capital cities headline CPI index published by the Australian Bureau of Statistics ("ABS");

X_1 = a factor determined by the Commission prior to commencement of the second regulatory control period which reflects the difference between annual movements in consumer prices on average and in electricity network access prices on average in Australia, to be based on X factors typically applying to comparable *best practice* (i.e., efficient) network service providers in other jurisdictions;

X_2 = a factor determined by the Commission prior to commencement of the second regulatory control period which reflects the difference between annual movements in electricity network access prices applied on average by comparable best practice network service providers in other jurisdictions in Australia and by the network service provider in the Northern Territory, on the

[3] Meyrick and Associates Pty Ltd, *Benchmarking Power and Water Corporation's Power Networks O&M Costs*, January 2003. The Executive Summary of this report can be viewed on the Commission's website.

basis that any remaining O&M inefficiencies reasonably assessed to be within the control of management are eliminated by the end of the third regulatory control period;

and:

the "t" subscript denotes a particular financial year, with t denoting the forthcoming year, t-1 the current year and t-2 the previous year.

2.9 In applying equation (2), the Commission will measure the CPI_{t-1} term by reference to the most recently published quarterly index at the time.[4] The CPI_{t-2} term in equation (2) involves the published index value in respect of the equivalent quarter in the previous year.

2.10 The within-period triggers and pass-through arrangements remain unchanged on those currently provided for by clause 71 of the Code, with the addition of price increases also being allowed outside the CPI-X constraint as a consequence of *improvements in service quality* agreed between the network service provider and end users generally. However, any price increases on account of service quality improvements will only be allowed following a process of consultation between the network service provider and affected end users regarding the scope for improvements in service standards and the associated pricing consequences. This consultative process is to be developed by the Commission separately from the 2004 reset, and is therefore unlikely to be in place until well into the second regulatory control period.

2.11 The Commission's decision also involves any out-performance of the X_1 and X_2 factors in the second regulatory control period being carried forward in accordance with a *gains sharing* approach, which involves a network service provider retaining a share of the benefit of any out-performance of an X factor during one regulatory control period through to the end of the subsequent regulatory control period. Hence, the base period adjustment at the commencement of the third regulatory control period (the Z factor) will be implemented in a manner that ensures the network service provider continues to benefit during the third regulatory control period from its efficiency efforts in the second regulatory control period. The Commission expects the gains sharing percentage to apply throughout the third regulatory control period to accord with the percentage observed (or inherent) in the equivalent arrangements applying in other jurisdictions in Australia. Such gains sharing of second period out-performance would cease at the end of the third regulatory control period.

Individual network access tariffs

2.12 Each year within the second regulatory control period, the Commission will consider approving the annual schedule of individual network access tariffs submitted by the network service provider only if the weighted average of tariffs included in the schedule complies with the constraint in equation (2).

2.13 Provided the constraint in equation (2) is met, the network service provider will be free to modify the *structure* of network access tariffs, provided that:

- in conjunction with the submission of the schedule of annual network access tariffs for approval, the network service provider also submits to the Commission a statement of reasons for any modifications proposed to the structure of network access tariffs that is consistent with the approved Pricing Principles Statement and capable of publication (with the Commission only intervening where it considers the proposed change in structure is not consistent with the approved Pricing Principles Statement); and
- the resultant impact on individual customer bills, for the same level and type of consumption as applied in the previous year, does not breach a CPI+S side constraint, where S is a factor applying to a particular year or years determined

[4] This will typically be the December quarter CPI.

by the Commission prior to commencement of the second regulatory control period.

2.14 The Commission will review the network service provider's Pricing Principles Statement (to include principles governing changes in tariff structures) and its Capital Contributions Principles Statement for approval in parallel with its determination of the Z, X_1, X_2 and S factors.

2.15 The price cap will encompass network access tariffs in all regulated networks (Darwin/Katherine, Tennant Creek and Alice Springs). Regional tariffs will then be a pricing structure issue for the network service provider.

Measuring the weighted average of network access tariffs

2.16 The Commission's final decision is that the weighted average of individual network access tariffs already approved for the current year (or any previous years) (P_{t-1}) will be measured in index form as follows:

$$P_{t-1} = \Sigma_{i=1...n}[p^i_{t-1} * q^i_{t-2}] \,/\, \Sigma_{i=1...n}[p^i_{2000\text{-}01} * q^i_{t-2}]$$

$$= P_{t-2} * \left[\Sigma_{i=1...n}[p^i_{t-1} * q^i_{t-2}] \,/\, \Sigma_{i=1...n}[p^i_{t-2} * q^i_{t-2}]\right] \quad \text{... (3)}$$

where:

p = the approved price (or price component) for an individual network access tariff item; and

q = the quantity weight associated with the price (or price component) for the individual network access tariff item;

and:

the "i" superscript denotes an individual network access tariff item, or a component of an individual network access tariff item where a multi-part tariff is involved;

the "Σ" symbol denotes the summation of all relevant values across all individual network access tariff items, or components of such items;

the "t" subscript denotes a particular financial year, with t denoting the forthcoming year, t-1 the current year and t-2 the previous year; and

the "2000-01" subscript denotes a value for the 2000-01 year, the first full year during which network access tariffs were subject to regulation under the Code.

2.17 A single weighted average network price will be calculated combining the regulated networks (Darwin/Katherine, Tennant Creek and Alice Springs).

2.18 The formulation in equation (3) reduces to that used since 2001 by the Victorian regulator (the Essential Services Commission). The Commission's formulation in equation (3) is favoured only for expositional purposes, where the formulation used for implementation and compliance purposes is likely to be the reduced form.

2.19 The tariff basket will contain all the fixed, variable, energy, demand and time of use components of network access tariffs for each of the regulated networks. Taking the current 2003-04 tariff as an example, the basket will contain the price and quantity components shown in Table 2.1 below.

2.20 The tariff basket will not include capital contributions, or charges for services that are declared by the Commission to be excluded services.

2.21 Compared with the tariff schedules approved for 2003-04, streetlights as well as the Darwin to Katherine transmission line ("DKTL") will be included in the tariff basket.

Table 2.1 Network Access Tariff Components 2003-04

Non-contestable customers	**Price**		**Quantity**	
System availability charge				
commercial	$/customer pa		number of customer years	
Domestic	$/customer pa		number of customer years	
Monthly energy charge				
first 1000 kWh per month	$/kWh		kWh sold pa	
above 1000kWh per month	$/kWh		kWh sold pa	
Contestable customers	**Price**		**Quantity**	
System availability charge	$/customer pa		number of customer years	
Monthly demand charge	**Peak**	**Off-peak**	**Peak**	**Off-peak**
first 50 kVA per month	$/kVA	$/kVA	kVA sold pa	kVA sold pa
next 50 kVA per month	$/kVA	$/kVA	kVA sold pa	kVA sold pa
next 100 kVA per month	$/kVA	$/kVA	kVA sold pa	kVA sold pa
next 300 kVA per month	$/kVA	$/kVA	kVA sold pa	kVA sold pa
next 500 kVA per month	$/kVA	$/kVA	kVA sold pa	kVA sold pa
next 1000 kVA per month	$/kVA	$/kVA	kVA sold pa	kVA sold pa
next 1000 kVA per month	$/kVA	$/kVA	kVA sold pa	kVA sold pa
any further kVA per month	$/kVA	$/kVA	kVA sold pa	kVA sold pa
Monthly energy charge	**Peak**	**Off-peak**	**Peak**	**Off-peak**
first 10,000 kWh per month	$/kWh	$/kWh	kWh sold pa	kWh sold pa
next 20,000 kWh per month	$/kWh	$/kWh	kWh sold pa	kWh sold pa
next 50,000 kWh per month	$/kWh	$/kWh	kWh sold pa	kWh sold pa
next 100,000 kWh per month	$/kWh	$/kWh	kWh sold pa	kWh sold pa
next 200,000 kWh per month	$/kWh	$/kWh	kWh sold pa	kWh sold pa
next 200,000 kWh per month	$/kWh	$/kWh	kWh sold pa	kWh sold pa
any further kWh per month	$/kWh	$/kWh	kWh sold pa	kWh sold pa

How will the weights be determined?

2.22 For each tariff component, quantity weights in the tariff basket will be determined as the amounts sold to customers in the most recent year for which actual figures are available. Taking 2003-04 tariffs as an example, the quantity parameters for each tariff component are shown in Table 2.1.

How will new tariffs be incorporated?

2.23 While a tariff basket form of control is in most respects relatively simple to implement and administer compared with other forms of price control, the introduction of new tariffs (and the removal of tariffs) requires rules and procedures for determining the quantity weights that should apply.

2.24 Because the tariff basket uses lagged quantity weights (for example, proposed tariffs for 2004-05 will use 2002-03 quantity weights), there will be a two year delay before data on actual sales for the new tariff (or tariff component) becomes available. If the rate of transfer of customers to the new tariff continues for an extended period, the network service provider may face an associated revenue risk that could act as a disincentive to the introduction of more efficient tariffs.

2.25 The Commission will take an approach to the introduction of new tariffs or tariff components that endeavours to contain revenue risk within reasonable bounds.

2.26 In most cases, new tariffs or tariff components will have a readily identifiable parent tariff or tariff component. When introducing new tariffs or tariff

components, the Commission will require the network service provider to estimate the quantities that would have been sold had the tariff or tariff component been in place in the previous year. In effect, proxy quantities will be used. The Commission will assess the reasonableness of these estimates and the supporting evidence, before determining the weights that will apply.

2.27 In particular, the Commission will require:

- the network service provider to nominate the 'parent tariff' category associated with the new tariff being introduced. This parent tariff category is the tariff category which currently applies to those customers who are expected to migrate to the new tariff category;
- the value for the 'current' individual price of the new tariff (i.e., p_{t-1}) to be set equal to the current parent tariff;
- the network service provider to submit a 'reasonable estimate' of the relevant quantities *that would have been sold* under the new tariff in year t-2, if the proposed new tariffs had been offered in that year. These estimates of q_{t-2} will be used in applying the tariff basket to the proposed new tariff; and
- consistent with the estimate above, the network service provider to also submit a 'reasonable estimate' of the quantities *that would have been sold* under the existing parent tariff in year t-2 if the proposed new tariffs had also been offered in that year. This estimate of q_{t-2} will be used in applying the tariff basket to the parent tariff.

2.28 In the very limited situations where there is no existing parent tariff, the Commission will consider any evidence presented by the network service provider to support the reasonableness of its estimates, and will take into account any particular difficulties arising in individual cases.

How will non-standard services, and negotiated tariffs, be dealt with?

2.29 In order to facilitate recovery of the associated revenue reduction under the tariff basket control, the network service provider will be required to introduce an *explicit tariff category* for the customer being offered the discount. This 'discounted tariff' will be incorporated into the tariff basket formula in the same way as any other new tariff. The network service provider's proposed tariffs to other customers on non-discounted tariffs may then be increased to the extent permitted by the tariff basket control. In this way, the network service provider will be able to recover part of the cost to it of offering the discounted tariff (subject to the negotiated prices meeting the Commission's discounting guidelines).

Determining the Z factor

2.30 In the first regulatory control period, annual revenue requirements for each full year of the regulatory control period were estimated, based on a building blocks approach, in June 2000. Tariffs were then derived to recover the required revenue. Over time, it is likely that actual results will have diverged from estimates – that is, actual costs will have varied from the cost estimates made in June 2000, while actual revenue generated by the approved tariffs may also have varied from the revenue anticipated.

2.31 Thus, before applying a price cap approach to the second regulatory control period, the Commission will re-examine the network service provider's current costs of operation to ensure the initial cost base from which a tariff basket will be developed reflects a reasonable balance between the interests of customers for prices based on efficient costs and the interest of the network service provider for revenues that recover costs incurred.

What year?

2.32 The Commission has decided to estimate the Z factors by undertaking a building blocks (i.e., cost-based) exercise with respect to the 2002-03 year. This choice of the 2002-03 year reflects the fact that no building blocks analysis was performed for 2003-04, the extended year of the first regulatory control period.

2.33 To ensure consistency with the earlier calculation, streetlighting costs will be excluded from the building blocks update to be undertaken in November 2003.

2.34 The original building blocks calculation underlying DKTL costs was undertaken in May 2001. However, as both the June 2000 and May 2001 calculations were done in real terms, the Commission will add the two together for comparison with the November 2003 update with respect to the 2002-03 year.

What factors will influence the base year revisions?

2.35 There are, in essence, two factors that will influence the Commission's revisions to the base year:

- variations between the building blocks estimate for the 2002-03 financial year in the June 2000 revenue determination and the updated building blocks estimate for 2002-03 based on actual data; and
- variations for any expected under- or over-recovery of revenue in 2002-03 and any under/over recovery in 2003-04.

2.36 Thus, the Z factor can be expressed as follows:

$$Z_r = f(P_0''/P_0, R_0''/R_0)$$

where:

P_0''/P_0 = the extent to which approved tariffs may under- or over-recover the first regulatory control period's revenue cap during the year in question (the "revenue recovery component"); and

R_0''/R_0 = the extent to which the first regulatory control period's revenue cap may under- or over-estimate the underlying costs evident during the year in question (the "building blocks component").

What is the Commission's approach to determining the revenue recovery component of the Z factor?

2.37 The Commission will give consideration to both:

- the extent to which under- or over-recovery is evident in the 2003-04 year (rather than the 2002-03 year), as the resultant Z factor is to be applied to the 2003-04 year's weighted average of approved individual tariffs; and
- the extent to which end-users deserve some clawback of the over-recoveries evident in the 2001-02 and 2002-03 years and the impact this may have upon incentives for the network service provider.

What is the Commission's approach for determining the building blocks-based component of the Z factor?

2.38 The Commission will undertake an updated building blocks analysis for all regulated networks combined to establish the level of efficient costs required to provide network access services in these networks.

2.39 The building blocks methodology will be settled as part of the implementation stage that is to follow the final decision set out in this paper. The

building blocks methodology will be based closely on the approach adopted in the Commission's June 2000 revenue determination. This will not preclude incorporating improvements where considered appropriate. The Commission will consult with the network service provider when considering possible improvements to the building blocks methodology.

Determining the X_1 factor

2.40 In translating anticipated cost savings to the determination of an X factor, X_1 only involves account being taken of the future scope for productivity improvements in the regulated industry as a whole, whereas X_2 accounts for the scope for productivity improvements in the network service provider relative to productivity growth in the regulated industry generally.

2.41 The X_1 factor is a pre-determined annual scaler applied to the network service provider's forecast revenue without reference to its actual earned rate of return. It represents the percentage reduction in revenue all network service providers are deemed capable of achieving, taking account of efficiency improvements, without jeopardising their financial integrity. If a network service provider can realise efficiency gains at a faster rate, it retains the resulting profits during the regulatory control period. If there is under performance, the network service provider's rate of return suffers.

2.42 The Commission considers that it is too early to use the total factor productivity (TFP) based approach to determining the X_1 factor. Instead, the Commission will choose an X factor that typically applies to best practice (i.e., efficient) network service providers in other jurisdictions. In applying this approach, the Commission will document its sources. In doing so, the Commission will use its best endeavours to exclude the "movement towards best practice" component evident in X factors applying in other jurisdictions.

Determining the X_2 factor

2.43 The X_2 factor will be determined by the Commission prior to commencement of the second regulatory control period to reflect the extent to which additional efficiency gains are required in the Northern Territory to close the gap relative to the efficiency benchmark provided by the sector in general.

2.44 In the benchmarking study of Power and Water's network O&M costs undertaken in 2002, Meyrick concluded that:

> *"After allowing for differences in functional coverage and factors beyond management control, PWPN's current unit O&M costs would have to be reduced by around 20 per cent to reach best practice. Ten years appears to be a reasonable timeframe for removing the performance gap implying a reduction in the current unit O&M cost of two per cent per annum."*

2.45 The Commission will adopt the following approach:

- a reasonable period in which such a percentage differential should be eliminated will be taken to be 10 years, that is by the end of the third regulatory control period; and
- the Commission will assume that a proportionate effort has been achieved between 1999-00 and the timing of the benchmarking study, with the 2002-03 O&M data for use in the building blocks update being the actual 2000-01 O&M data reduced (in real terms) by this proportionate effort.

2.46 The Commission will then calculate the X_2 factor using a 10 year glide path to eliminate a percentage differential based on the Meyrick benchmarking study. The

resultant annual efficiency factor will be scaled to reflect the relative size of O&M costs in total network costs (including capital costs). The Commission will take account of the inter-relationship between the Z and X_2 factors.

Determining the S factor

2.47 The Commission has decided to apply a side to each individual customer's per unit network charge. The level and profile of the constraint will be determined as part of the next, implementation stage of the reset.

2.48 The Commission currently has an open mind on whether the constraint should apply equally to each year or, as an alternative, have a larger value in year 1 in recognition that tariff structure changes are reasonably expected to be greater initially than – after the desired cost reflectivity of tariff structures has been achieved – over the longer term.

CHAPTER

3

STATEMENT OF REASONS

The Commission's objectives

3.1 The Commission has made its decision against the background that the 2004 Regulatory Reset provides an important opportunity to improve the performance of network regulation and to ensure that these improvements are fully realised.

3.2 In developing the approach adopted, and as well as taking into account submissions received, the Commission has carefully considered the lessons learnt during the current period, together with the experience of other network regulators and the evidence available from the continuing reassessment of regulatory best practice.

3.3 Nevertheless, the Commission has been wary of making change an objective in its own right. The Commission's focus has been directed squarely at the key performance objectives of network economic regulation. The case for changing the method of price regulation rests entirely on the benefits assessed against these key objectives.

3.4 Clause 63 of the Code requires the Commission to administer access price regulation under the Code in a way that achieves the following outcomes:

(a) efficient costs of supply;

(aa) expected revenue for a regulated service or services that is at least sufficient to meet the efficient long-run costs of providing that regulated service or services, and includes a return on investment commensurate with the commercial and regulatory risks involved;

(b) prevention of monopoly rent extraction by the network provider;

(c) promotion of competition in upstream and downstream markets and promotion of competition in the provision of network services where economically feasible;

(ca) an efficient and cost-effective regulatory environment;

(d) regulatory accountability through transparency and public disclosure of regulatory processes and the basis of regulatory decisions;

(e) reasonable certainty and consistency over time of the outcomes of regulatory processes;

(f) an acceptable balancing of the interests of the network provider, network users and the public interest; and

(g) such other outcomes as the regulator determines are consistent with the underlying principles set out in clause 2 [of the Code].

3.5 These and other generic objectives within the Commission's statutory framework consistently emphasise the importance of promoting efficiency, competition, protecting the interests of customers and maintaining the financial viability of network access services.

3.6 In applying objectives of this broad nature in a manner that is relevant to the Northern Territory electricity market, the Commission has placed particular

emphasis on the opportunities for making regulation *cost effective*, and the scope for giving increased weight to regulatory stability and predictability. This approach reflects the Commission's concern at the cost and complexity of regulation in a small market.[5]

3.7 For a small system, the cost effectiveness of regulation is a key consideration in assessing 'best practice'. In this context, cost effectiveness does not mean minimum cost, but a balancing of costs and benefits.

Why the Commission rejects continuation of the current approach

3.8 In considering the form of regulation for the second regulatory control period, the Commission regards the primary choice to have been between:

- continuing with the multi-year building blocks approach used in the first regulatory control period, in which allowed *revenues* in each year of a regulatory control period are built up from a detailed assessment of projected demand, costs and efficiency levels and then capped at a fixed amount determined at the start of the regulatory control period (the "revenue cap approach"); or
- moving to an approach in which *prices* are controlled through a CPI cap on the allowed increase in average prices less an efficiency (or productivity) factor determined by reference to industry-wide benchmarks (the "price cap approach").

3.9 The Commission considers the current revenue cap approach to be deficient in three key respects:

- the fixed revenue cap provides no incentives for efficient, cost-reflective pricing and output by the network service provider;
- the fixed revenue cap is inflexible with regard to volume changes; and
- the combination of a building blocks approach and the fixed revenue cap is costly and complex to apply and administer.

3.10 Under a fixed revenue cap, the network service provider's income is fixed, regardless of how much electricity it distributes. This has a number of consequences. While the network service provider faces an incentive to reduce total costs since, with revenue fixed, lower total costs increases total profits, a primary means of achieving lower costs is to restrict output. There is the potential for a deterioration in the provision of network access services, to both new and existing customers, resulting from an incentive to reduce units distributed.

3.11 This works against the efficient utilisation of the existing asset base. It also diminishes the role of prices in the management of profit risk arising from volume changes. The network service provider faces no clear incentive to align prices with costs, since cost reflectivity requires revenue flexibility.

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[5] In this regard, the Commission acknowledges the four criteria advanced by ESCOSA in its submission on the Issues Paper which serve as a useful generic base when assessing forms of regulation:

"• the power of the incentive mechanism – which considers both whether a form of regulation can provide strong incentives and whether the industry being assessed requires, or can respond to, incentives;

• regulatory risk – which considers the likely consequences of over and under regulation;

• information and administration costs – which considers whether the necessary information is available and whether the industry, or market power concerns within it, warrant the various costs that regulation impose; and

• robustness to change – which considers whether the form of regulation selected will be able to keep up with industry and market dynamics, or indeed, whether it would stifle them."

3.12 In the face of a fixed revenue cap, variations in volumes from those forecast at the time that the cap was determined are accommodated by adjusting price. Greater-than-anticipated volumes lead to reduced prices and vice versa, potentially creating considerable price instability. Revenue inflexibility in the face of volume uncertainty adds to aggregate financial risk both for customers and the network service provider.

3.13 Volume forecasts are also required for annual tariff setting. Where actual sales vary from the level assumed in setting tariffs, a subsequent revenue adjustment is required to bring actual revenues back to the level of the cap. The timing of the tariff setting process results in these revenue adjustments being considerably delayed. As a result, the customers whose prices are subsequently adjusted may not be the same as those initially involved. The Commission's experience with administering this system during the first regulatory control period has not been positive, a view it shares with the NSW network regulator (IPART) which has also recently decided not to continue with a fixed revenue cap.

3.14 As discussed further below, the Commission has major reservations concerning the benefits, in terms of the primary objectives of regulation, achievable from applying a detailed multi-year building blocks analysis of the network service provider's projected revenue requirements over the second regulatory control period. While in the larger jurisdictions this approach can be supported by extensive consultancy studies and detailed investigations, this is not a cost-effective option in the Northern Territory context. As a consequence, the scope of a building blocks approach for Power and Water is necessarily limited and generalised, undermining the basic rationale for the use of this methodology.

3.15 The Commission recognises that a fixed revenue cap may be more conducive to the development of demand management options, and that there are positive environmental aspects to the absence of volume incentives. These are not unimportant considerations. Nevertheless, the Commission is of the view that the balance of interests clearly favours a move away from the current revenue cap approach.

The Commission's revised approach

3.16 The approach to be taken by the Commission to the regulation of network access prices in the second regulatory control period in place of the current revenue cap approach involves *moving towards* a price cap methodology.

3.17 The Commission's approach combines three primary elements:

- a tariff basket form of price control;
- a cost-based adjustment of base year average prices; and
- externally-determined annual price cap escalation factors.

3.18 Additionally, the Commission will apply a number of secondary elements, notably:

- additional price adjustments on account of improvements in service standards are to be allowed only following a consultation process with end users which is to be developed separately by the Commission;
- confirmation that any cost-based adjustments of base year prices at the commencement of the third regulatory control period are to be undertaken in a manner consistent with gains maintenance principles; and

- a side constraint mechanism will limit the maximum annual increase allowed in any individual customer's per unit network charge.[6]

3.19 The Commission has argued in the Draft Decision that each of these elements is required to implement a transition at the 2004 reset from the current cost-based revenue cap to a simpler, more transparent, and less costly indexed price cap.

3.20 The different elements signal that the Commission's approach does not involve the application of a *pure* price cap. This is attributable in particular to the starting level of prices for the second regulatory control period being adjusted and reset to reflect an up-to-date view of efficient costs. However, beyond the application of the building blocks analysis to adjust the starting point prices, no further analysis of *projected* network demand, costs and revenues over the regulatory control period will be undertaken.

3.21 Once the starting level of prices has been established, the weighted average network access price will be allowed to increase each year by a maximum amount based on the level of consumer price inflation less an efficiency factor determined by the Commission at the start of the regulatory control period.

3.22 The focus of the new approach is on the weighted average of network access prices, alternatively referred to as a 'tariff basket'. Each network access tariff component is represented within the basket, weighted according to the quantity sold. The Commission will apply quantity weights based on the most recently observed level of actual sales. No forecasts of sales volumes, and hence mechanisms to correct for forecast errors, will therefore be required.

3.23 Similarly, the latest actual consumer price inflation data will be used in the calculation of the tariff basket cap, eliminating the need for CPI forecasts.

3.24 Consequently, the only forward-looking data required for the year-by-year operation of the price cap will be the proposed tariffs themselves. Once compliance of the proposed tariffs with the price cap has been confirmed, no further regulatory involvement is required with regard to average prices.

3.25 The principal attractions of this approach are that:

- it is light handed, with no reliance on forecast information and minimal within-period regulatory intervention or compliance activity;
- it greatly increases incentives on the network service provider to structure individual tariffs in line with costs (thereby managing the associated risks);
- it provides the network service provider with the flexibility necessary to deal with the network implications of offshore gas developments without regulatory adjustments, at the same time as ensuring that existing users are not expected to subsidise new users; and
- it provides a basis for price movements over time that is readily understandable to end users.

3.26 Aside from the particular advantages that the Commission considers this approach will bring to the regulation of network access charges over the next five years, the Commission is seeking to build a foundation for an enduring, effective, low cost form of regulation tailored to the circumstances of the Northern Territory electricity market. By establishing a datum at the 2004 reset that includes a cost-based review of opening prices and externally-benchmarked indexation combined with a tariff basket form of price control, further movement away from a cost-based approach and towards a pure price cap should be possible at future resets.

[6] The side constraint will apply to the annual change in a customer's bill for the same quantity and level of consumption as in the previous year.

3.27 In its response to the Draft Decision, Power and Water argues that the Commission's approach represents a move away from incentive-based regulation and, in its effect, is closer to cost-of-service regulation. While the Commission accepts that some assessment of the company-specific costs is involved in its approach, the reliance on detailed cost-of-service projections as a basis for price setting is, in the Commission's view, much less than is required by the multi-year building blocks approach advocated by Power and Water.

3.28 The Commission considers that the choice is not between cost-of-service or incentive-based regulation, and that this is not the real point of distinction. Most practitioners acknowledge that the building blocks approach is firmly grounded on an analysis of costs of service, yet is also incentive-based because it is applied within a forward-looking CPI-X framework. The Commission's approach is incentive-based because it is forward-looking, but it also substantially reduces the reliance on detailed projections of costs of service.

3.29 However, a second key attribute of incentive-based regulation is the avoidance of retrospective claims by the regulator on earned profits – so-called "clawback". Clawback of profits is recognised as weakening the efficiency and performance incentives that are central to the CPI-X approach, and its exclusion (except in exceptional and limited circumstances),[7] is a basic tenet of incentive regulation.

3.30 The Commission is committed to and fully supports the principles of incentive-based regulation, including the avoidance of retrospective adjustments. In setting the values for the price cap, and in particular the efficiency targets, the Commission is concerned only with the *forward-looking* gains that are achievable and the appropriate sharing of those gains between customers and shareholders.

3.31 To the extent that Power and Water may have interpreted the Commission's proposals as potentially opening the door to retrospective adjustments, such concerns can be put aside.

Supporting rationale for the use of a tariff basket form of price control

3.32 In considering the particular form of price control for the second regulatory control period, the Commission has assessed the options according to:

- the impact of the form of control on the network service provider's incentives for efficient behaviour;
- the extent to which the controls ensure that total revenue tracks total cost;
- the implications of the form of control for risk allocation; and
- transparency and complexity.

3.33 The Commission considers that a tariff basket approach brings material benefits under each of these performance criteria.

Incentives on the network service provider's behaviour

3.34 There are several key features of a tariff basket control that can be expected to impact on network service provider incentives.

Link between marginal revenue and tariff structure

3.35 Under a tariff basket formula, the revenue earned by the network service provider will depend upon the actual tariffs applying to the actual quantities sold of

[7] Such as where the regulator has been deliberately mislead through the provision of false information, for example.

each of the charging parameters. If the network service provider sells an additional unit, of whatever charging parameter (that is, whether peak kWh, off-peak kWh, kVA, customer number or some other parameter), the marginal revenue it earns will be equal to the tariff applying to that extra unit.

3.36 As a result, there is a direct link between the revenue earned and the tariff structure. This link between marginal revenue and tariff structure creates an incentive to set tariff structures to reflect the underlying cost structure, in order to minimise profit risk.

3.37 A tariff basket therefore supports the development of efficient prices – that is, prices that reflect the marginal costs incurred in providing services. Efficient prices are desirable because they promote economically-efficient consumption and investment decisions and hence an efficient allocation of resources.[8]

Absence of forecasts and correction factors

3.38 The tariff basket formula adopted is based on information which is known at the time the formula is applied – the tariffs proposed for the coming year, current tariffs and the quantities sold last year. There is therefore no need to use forecast quantities, and to apply a later correction factor to account for the difference between the forecast and actual quantities.

3.39 While the absence of forecasts minimises the complexity of the formula and the workload associated with verifying compliance, it also limits the scope (and incentive) for strategic behaviour on the part of the network service provider, in terms of under- or over- forecasting in order to increase total allowed revenue.

Introduction of new tariffs and charging parameters

3.40 One of the key features of the tariff basket approach is that it uses information that is already available on past tariffs and previous quantities sold. As discussed above, this is one of the desirable features of the control, since it removes the need for forecasting and complicated correction factors and limits the potential for strategic behaviour.

3.41 However, where a new tariff (or a new charging parameter) is introduced, this past information is not available. Arrangements are therefore required for incorporating new tariffs into the tariff basket. The Commission's approach is that, where data on previous quantities sold is not available, the network service provider will be required to make a 'reasonable estimate' of the quantities *that would have been sold* if the tariffs had been offered in the previous year.

3.42 The Commission is of the view that this approach will facilitate the introduction of new tariffs and new charging parameters, and hence support the development of more efficient and responsive tariffs.

Efficient discounting

3.43 For economic efficiency reasons, the form of price control should not preclude the recovery of costs due to prudent discounting – in order to prevent uneconomic bypass, for example.

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[8] In expecting price structures to be more efficient under a tariff basket approach, the Commission does not wish to over-emphasise the price signaling role played by prices. In this regard, the Commission takes note of the perspective offered by ESCOSA in its submission on the Issues Paper:

> *"Cost reflective price signals can provide efficiency benefits in so far as they create an incentive for consumers to modify their consumption patterns in response. However, ESCOSA observes that the extent to which this occurs is limited for many consumers, especially households, which tend to display very inelastic energy demand. The potential benefits from cost reflective price signaling should be seen in context.*
>
> *Furthermore, it is uncertain whether cost reflective distribution tariffs would be passed through in the same manner to retail tariffs – thus undoing efforts at the distribution level."*

3.44 Under the tariff basket control, the revenue earned by the network service provider is determined by the *actual* tariffs charged and the quantities sold. In a situation where the network service provider *discounts* its tariff to certain customers below the level which has been approved by the Commission, the revenue it earns will therefore be less than anticipated at the time it set its prices.[9]

3.45 Provided discounted tariffs comply with the Commission's discounting guidelines, the Commission will allow the discounted tariffs to be included within the tariff basket as new tariffs at the next tariff approval. The effect of this will be to allow the value of the discount to be recovered by the network service provider from other network users. This approach to the treatment of efficient discounting is consistent with general practice in the national electricity market.

3.46 This treatment of discounted tariffs also has the advantage of making the extent of such discounts transparent.

Relationship between revenues and costs

3.47 Under a tariff basket form of control, there is a direct link between revenue earned and tariff structure. This in turn creates an incentive to align tariffs with underlying costs, in order to minimise the exposure to profit risk. Where tariffs reflect marginal costs, revenue will track total costs as demand varies.

3.48 For example, consider a network service provider that levies a single rate tariff, which is comprised of a fixed component and a per kWh usage component. The network service provider may choose to charge below cost for the fixed component, and above cost for the per kWh component. For some forecasts of expected quantities sold, the network service provider's anticipated loss from its fixed charges will be more than outweighed by the profit it makes on its usage charge.

3.49 Such a pricing strategy may well satisfy the tariff basket constraint. However, it will leave the network service provider exposed to a higher degree of profit risk than if it had set its tariffs to reflect its costs. If its customer numbers increase by more than anticipated, for example, the loss it incurs on the additional fixed charges will reduce profitability as a whole, and vice versa.

3.50 In its response to the Draft Decision, Power and Water argues that it faces a number of constraints in aligning prices with costs. For example, customers may resist increases in fixed charges even though these may be offset by reductions in variable charges. Accordingly, Power and Water argues that the benefits brought by an increased incentive for cost reflective prices are overstated.

3.51 The Commission does not dispute the fact that there is a range of factors on which pricing decisions are based, of which cost reflectivity is only one. However, in a choice between forms of regulation that either remove price structure as a commercial consideration (which is what a revenue cap effectively does) or maintain it as both a commercial consideration and a service provider's responsibility (as under a tariff basket), the Commission considers that the latter provides the more desirable mix of incentives, opportunities and accountabilities.

3.52 An underlying issue is whether the network service provider considers itself to be a purely reactive provider of services, with a fixed cost structure over which it has little control. This fits the business model to which a fixed revenue cap is best suited. The risk is that a revenue cap, by its nature, will ensure that the network service provider behaves as if that particular business model applied, in the process closing off the possibility of more active engagement with customers and a more

[9] In a situation where the network service provider discounts its tariff to avoid a customer bypassing the network, the revenue earned will be greater if the customer remains connected and pays the discounted tariff, than if it bypasses the network. Providing that the discounted tariff is above the avoided cost of supplying the customer, it will still be more profitable for the network service provider to offer the discounted tariff than to lose the customer.

flexible approach to the management of commercial opportunities for both costs and revenues. In opting to reject a fixed revenue cap in favour of a tariff basket, the Commission's intention is to avoid a regulatory approach that unnecessarily constrains the role and responsibilities of the network service provider's board and management.

Risk allocation

3.53 A tariff basket approach provides the network service provider with both the means and the incentive to manage volume risk. This is an efficient allocation of volume risk.

3.54 To the extent that prices reflect costs, a decision that rests entirely with the network service provider, the network service provider will not be exposed to risks associated with changes in profitability as volumes change.

3.55 By placing the management of volume risk squarely with the network service provider, the tariff basket approach promotes network service provider management autonomy and accountability, and provides the flexibility, within the overall price cap, to respond to market developments.

Transparency and complexity

3.56 A key attribute of the tariff basket approach is its transparency and ease of administration.

3.57 In particular, the tariff basket approach operates on the basis of known rather than forecast variables, removing the need for complex correction factors. It lowers the administrative burden on the Commission and the cost of compliance on the network service provider.

3.58 Under the tariff basket approach, outcomes are stable and predictable once the proposed tariffs are confirmed at the start of each year. Negotiations over adjustments to revenues collected in preceding years is avoided.

3.59 In the case of new tariffs, where previous information is not available, the network service provider will be required to submit 'reasonable estimates' of the quantities that would have been sold had those tariffs been offered in previous years. The Commission will verify the reasonableness of these estimates and will reserve the right not to approve any tariff where the relevant quantity estimates provided do not appear to it to be reasonable. However, there will be no correction factor applied at a later date. Hence, even in the case of new tariffs, the tariff basket will operate with a minimum of complexity.

Supporting rationale for resetting opening price levels

3.60 The international experience has been that price cap (and benchmark) approaches have been adopted within mature regulatory regimes where the existing price levels and initial cost base are 'about right'. In these circumstances, regulators can have more confidence that, in rolling forward a price cap, they are not moving away from their primary objectives by compounding the extraction of monopoly rents or the under-recovery of efficient costs.

3.61 Where the required level of confidence is lacking, but a more light-handed approach is still favoured, the response of regulators has been to address the issue of opening prices directly by undertaking a 'base year' cost analysis and, if necessary, an opening price level adjustment.

3.62 By undertaking a base year cost analysis, the Commission will be able to explicitly incorporate updated asset values, WACC estimates and operating costs. The Commission also intends to examine the evidence on the relative efficiency of Power

and Water. If, as the Commission believes, there is an efficiency gap, the Commission will make a decision to allocate a portion of that gap to the base year price adjustment (Z) and the remainder to the escalation factor (X_2) incorporated into the price cap.

3.63 In its response to the Draft Decision, Power and Water raises concerns regarding the extent to which special factors could distort the base year cost analysis.

3.64 The Commission is alert to the possibility that, in undertaking the base year building blocks cost analysis, there may be factors relevant to that year that may distort the outcome as a basis for the future indexation of prices. In addition, because the analysis will be conducted on data relating to 2002-03, and yet it is tariffs from 2003-04 that will form the base for indexation, a relevant consideration will be the extent to which 2003-04 tariffs either over- or under-recover the revenue cap. The Commission will consult with the network service provider on this analysis and will take into account any information presented to it that it considers to be relevant and material.

Supporting rationale for the use of external benchmarks in setting X

3.65 The value of the X factor is the amount by which network access tariffs (on average) are allowed to escalate relative to the rate of consumer price inflation. X therefore determines the amount by which network access tariffs change in *real terms*. Because productivity (or cost per unit of output) is a primary driver of real-terms price movements, X is often referred to as a productivity or efficiency factor.

3.66 There are two main approaches to setting the value of X.

3.67 The first is on the basis of a full building blocks approach of projected required revenues for each year of the regulatory control period. This entails projecting network demand, capital expenditure and operating costs. Once required revenues have been projected, projected quantities of each tariff element are used to determine projected tariff revenues. The value of X is then determined so that the present value of tariff revenues equals the present value of required revenues.

3.68 Because projected quantities are subject to forecast risk, and the rate of change in tariffs can influence quantities through the price elasticity of demand, scenario analysis is usually employed to estimate the likely range of X, before a final determination is made. This is a complex and costly approach, but nevertheless one which has been employed by the Commission in the first regulatory control period and by network regulators in Victoria and New South Wales in their current and pending determinations.

3.69 The second approach avoids detailed analysis of projected demand and costs specific to the network being regulated. Instead, X is based on an external benchmarked estimate of the trend annual rate of productivity (or efficiency) performance for the industry. This then becomes the performance target that the regulated network service provider must equal to maintain its profitability. Performance which betters this target increases profit during the regulatory control period and provides the key incentive properties of the CPI-X form of regulation.

3.70 This is the approach favoured *in principle* by the Commission.[10] Generically it is a relatively common approach applied to networks (both electricity and telecommunications) and transport utilities in the United States.

3.71 The method adopted by the Commission effectively splits the conventional notion of X into two components – an industry-wide performance benchmark (which the Commission designates as X_1), and a company-specific 'stretch factor' (designated

[10] In practice, the Commission will adopt an X factor based on values typically used in other jurisdictions rather than on a total factor productivity (TFP) analysis.

as X_2). The use of company-specific stretch factors has been developed by regulators in the United States to address cases where either an initial efficiency gap exists or circumstances are expected to be particularly favourable to the regulated business. In either case, there are grounds for arguing that customers should share in the potential additional profitability available from improved performance. In Power and Water's case, the Commission considers that an initial efficiency gap exists that would cause an externally-determined efficiency factor to understate the gains available from an improvement in performance that could reasonably be expected to occur over the regulatory control period.

3.72 In its response to the Draft Decision, Power and Water raises three primary concerns regarding the approach that the Commission proposed for determining the X_1 and X_2 escalation factors:[11]

- the double-counting of efficiency gains;
- the arbitrariness involved in establishing the X factors; and
- revenue adequacy.

3.73 The identification of two real-terms components to price escalation (X_1 and X_2) is useful in distinguishing between the separate factors at play, and in structuring the analytical approach. In practice, however, it is the combined effect that they have on the price cap that is relevant to the outcome for customers and the network service provider, and it is this aspect that the Commission will ultimately focus most closely on. In this context, the Commission considers that Power and Water's concerns regarding the possible double-counting of potential efficiency gains is manageable.

3.74 Power and Water is also concerned that the estimation of the X_1 and X_2 escalation factors will necessarily be arbitrary. The Commission sees no benefit in disguising the fact that considerable judgment will be required in setting these values. There is no deterministic formula to follow. Equally, there is no formula for determining efficient operating costs and levels of capital expenditure for inclusion within a building blocks analysis. The Commission reiterates its view that the presence of detail (as required by the building blocks approach) does not remove uncertainty and the role of judgment, although it may mask them.

3.75 The Commission's objective is to develop estimates of improvements in unit cost efficiency that can reasonably be expected to be achieved by the network service provider over the next five years. In pursuing this it will look at X factors recently set in other jurisdictions to gain an idea of what efficiency improvements may be available to (small) efficient network service providers Australia-wide, and the available evidence on the existing efficiency gap between the network service provider in the Northern Territory and (small) efficient network service providers Australia-wide. In doing this, the Commission will consult with Power and Water to gain an understanding of any special factors that may need to be taken into account.

3.76 Fundamentally, Power and Water is concerned that the Commission's price cap approach could erode its financial viability by neglecting revenue adequacy considerations. The Commission has given these concerns particular attention, and considers them to be misplaced for three main reasons.

3.77 First, the Commission considers that once an appropriate opening level of prices is set that takes into account updated asset values, operating costs and costs of capital, and this opening level is indexed to inflation less a reasonable target for efficiency improvements, then the criterion of establishing a *reasonable expectation* of efficient cost recovery (or revenue adequacy) will have been met.

3.78 Secondly, at the Draft Determination stage, the Commission will examine the proposed values of X_1 and X_2 against the record of price movements over the

[11] In the Draft Decision, X_1 and X_2 were referred to as X and Y.

current period as a cross-check on their reasonableness from a revenue adequacy perspective. For example, a price cap that implied significantly greater real price declines than achieved over the current period may not be regarded as reasonable from this perspective.

3.79 Finally, some of the key 'revenue adequacy' arguments put by Power and Water in favour of continuing with a cost-based revenue cap approach are misplaced or overstated.

3.80 One such argument involves additional revenues to finance capital expenditures that may be required to support the connection of new large customers. If this is to suggest that additional revenue may be required across the board, it amounts to asking existing customers, whose costs are fully covered by current prices, to accept price increases in order to finance the connection of new customers.

3.81 There are more acceptable alternatives. In particular, the tariff basket allows for greater flexibility in pricing than Power and Water may have assumed. Negotiated tariffs for large customers may involve either discounts or premia, depending on the economic and commercial circumstances of connection and service provision. The tariff basket approach allows new tariffs to be applied to new customers without impacting on the price cap, provided that the Commission accepts that the new tariff does not represent an increase from the level it would have been in the previous year that is in excess of that allowed under the cap.

3.82 In other regards, the Commission reiterates that customer connections that are uneconomic under current price levels may be more suitably addressed through other means, including the use of upfront capital contributions from customers wishing to connect.

3.83 Another argument put by Power and Water is that factors specific to its corporate governance arrangements may constrain its ability to respond to funding requirements in a manner that would normally be expected of a commercial enterprise, through varying debt levels for example. The concern is that government as shareholder may limit commercial flexibility. This is a difficult issue for the Commission to respond to. In determining the WACC, for example, the Commission assumes that Power and Water is a commercial, risk-taking enterprise that is entitled to a risk-adjusted return determined from capital market benchmark returns. The Commission considers this assumption to be entirely consistent with the public enterprise-related clauses of the *Competition Principles Agreement* in general and with the Northern Territory's *Government Owned Corporations Act* in particular. Moreover, if the Commission were to attempt to incorporate the effect of possible constraints arising from government ownership, then presumably it should also reflect the possible benefits provided by the backdrop of ultimate government support.

3.84 A final set of arguments put by Power and Water relate to the greater certainty it attaches to a revenue cap approach based on a multi-year building blocks analysis. The two primary objectives for regulators when capping prices or revenues are the prevention of monopoly rents – that is, the ability of network service providers to charge prices that are above efficient costs – and providing the regulated business with a reasonable prospect of cost recovery. The benefit of a multi-year cost-based building blocks approach stressed by Power and Water is that it allows the regulator to demonstrate that, on the basis of the best available information, forecasting and modelling techniques, these two objectives are met.

3.85 From the Commission's perspective, however, this apparent robustness masks – but does nothing to reduce – the uncertainties inherent in the projections that form the basis for the building blocks approach. The fact that a multi-year cost-based building blocks approach may allow a regulator to demonstrate the prospect of full cost recovery does not remove the risk that is inherent to the task of projecting outcomes over a five year period.

3.86 In addition to considerations of cost and complexity, the building blocks approach has been further criticised for potentially leading the regulator into a situation where it, *de facto*, micro-manages the regulated business by prescribing management responses to future developments. It relies heavily on regulatory judgments about the appropriateness of planned expenditure levels. For many critics, the intrusive nature of the building blocks approach is counter to the basic premise of incentive-based regulation.

3.87 Because a benchmark-based price cap approach is more light-handed and does not provide detailed projections of demand, costs and revenues, it cannot counter challenges that a particular future scenario may lead to stresses on the regulated business, or above normal profits. However, the Commission is satisfied that, provided opening prices reasonably reflect efficient costs, the escalation of average prices by general inflation less an empirically-based efficiency factor will provide a *reasonable expectation* of cost recovery for the business and avoidance of monopoly rents across a range of plausible scenarios over the regulatory control period.

3.88 None of this is to deny that a multi-year cost-based building blocks approach gives the regulator the advantage that it can demonstrate that what could be done has been done. Essentially, the detail required by the building blocks approach provides the regulator with a basis for decision-making that is robust to challenge – in many cases, this means robust to legal challenge. For many regulators, robustness of this kind is an attribute worth paying for. In the Commission's view, this is not a reasonable position to take in the Northern Territory context.

Supporting rationale for the secondary elements

3.89 The main 'secondary elements' of the approach to be used by the Commission to the regulation of network access prices in the second regulatory control period are:

- price adjustments on account of improvements in service standards only being allowed following a process of consultation with end users that is to be developed separately by the Commission;
- cost-based adjustments of base year prices at the commencement of the third regulatory control period that are consistent with gains maintenance principles; and
- a side constraint mechanism limiting the maximum annual increase allowed in any individual customer's average tariff.

Service standards

3.90 Standards of service are an important feature in any industry, especially in those dominated by monopolies where consumers, effectively, have limited choice of the quality of products and services they receive. It is common practice among regulators to impose minimum standards of service to ensure that (non-contestable) consumers receive a quality and level of service at a price they are willing to pay and at a price at which service providers are willing to deliver.

3.91 The Commission acknowledges that the price escalation arrangement provided in the decision set out in this paper assume constancy in service standards. The resultant price cap will be developed on the basis that existing levels of service are maintained. The Commission recognises that increased levels of service that are sought by and provided to customers should be subject to commensurately higher prices.

3.92 Likewise, while the incentive provided by price caps for the network service provider to seek cost savings is a strength, it also places a requirement on the Commission to monitor service levels or enforce service quality standards. Otherwise,

cost savings could be made by service levels being cut rather than by increasing efficiency. A measurement methodology and tracking mechanism for the standards of service provided are therefore important components of incentive regulation.

3.93 Separately, the Commission will consider whether (and how) service quality performance should be taken into account in escalating prices. This will be the subject of an Issues Paper to be published by the Commission shortly.

3.94 Initially, this is likely to see arrangements that ensure quality standards do not deteriorate in response to price regulation during the second regulatory control period, by:

- establishing service quality benchmarks that reflect the actual levels of service quality that are consistent with the basis of pricing; and
- monitoring and publishing the network service provider's actual performance against these benchmarks.

3.95 Following that, the Commission expects to develop a process – through public consultation – whereby a dialogue is facilitated between end users and the network service provider regarding the scope for improvements in service standards and the associated pricing consequences. Only through such a process will additional average price adjustments be allowed in addition to those allowed by the CPI-X price path. It is possible that such a mechanism will not be in place until well into the second regulatory control period.

3.96 Finally, consideration may also be given to developing a performance incentive scheme to sharpen the incentives for the network service provider to meet and exceed established service standards or benchmarks. This could include mechanisms for adjusting future price caps where under-performance against the established benchmarks has occurred or is expected to occur. Such a scheme would be developed only after an extensive process of public consultations by the Commission. Any performance incentive scheme that may be developed in this way would not apply until the third regulatory control period.

Gains sharing into the third regulatory control period

3.97 Part of the desirability of incentive regulation stems from the fact that customers should ultimately share in any benefit of out-performance of the X factor by a regulated entity. However, the incentive to out-perform is likely to be undermined if the entity believes its out-performance will be immediately returned to customers at the end of the period (especially if the period of time until the end of the regulatory control period is relatively short). A key feature of incentive regulation therefore involves offering the regulated entity an incentive to out-perform the X factor.

3.98 There are several possible approaches that may be adopted to share the benefits of out-performance of X with customers, including:

- one-off price reductions – where gains in excess of those represented by X in the previous period are passed on directly and in full to consumers in the setting of prices at the next reset (usually referred to as a "P_0 adjustment");
- a glide path – where gains are passed on to customers either entirely (full glide path) or partially (partial glide path) over time, thereby allowing the regulated entity to realise profit benefits of efficiency gains for a period beyond the regulatory control period (for example the out-performance may be spread over the next regulatory control period); and
- gains maintenance – where the full gains for each year are retained by the regulated entity for a pre-specified time (for example, five to ten years) unconnected to any regulatory reset whereupon gains are passed onto customers in a one-off or phased reduction.

3.99 The approach adopted will impact on the regulated entity's incentive to pursue efficiency gains. For example, where out-performance is passed on to customers as a P_0 adjustment, the regulated entity will have little incentive to invest in efficiency enhancements towards the end of any regulatory control period. The glide path and gains maintenance approaches offer the regulated entity the opportunity to retain some if not all of the benefits of any out-performance achieved in one regulatory control period during a subsequent regulatory control period.

3.100 The glide path and gains maintenance approaches are both forms of *gains sharing*. Such gains sharing mechanisms permit the network service provider:

- during a regulatory control period, to retain in full any returns to the network service provider from the sale of the regulated access service that exceed the level of returns expected during that regulatory control period; and
- during the subsequent regulatory control period, to retain a share of any returns to the network service provider from the sale of the regulated access service that exceed the level of returns expected during the preceding regulatory control period where the additional returns are attributable (at least in part) to the efforts of the network service provider.

3.101 While the Commission cannot bind the future exercise of statutory powers, it wishes to place clearly on the record that:

- it considers that only a long-term approach to determining the future sharing of the out-performance of efficiency targets is consistent with the Commission's statutory objectives;
- it is important that the regulatory arrangements do not influence the timing of any efficiency initiatives on the part of the network service provider; and
- its preferred approach is to allow the sharing of out-performance beyond the regulatory control period during which such out-performance occurs.

3.102 The Commission therefore believes that out-performance in the second regulatory control period should be carried forward in accordance with a gains sharing approach during the third regulatory control period. In particular, any Z-like base period adjustment at the commencement of the third regulatory control period should be implemented in a manner that preserves a reasonable share of the benefits of out-performance observed during the second regulatory control period throughout the third regulatory control period.

Use of side constraints

3.103 An essential precondition for achieving the benefits of the tariff basket approach is the requirement that the network service provider has the flexibility necessary to align – and keep aligned – its price structures with the structure of its costs.

3.104 The Commission acknowledges that the network access tariff structure that has developed during the first regulatory control period may not be as reflective of the network service provider's cost structure as will be required under the price cap approach being used in the second regulatory control period. Some adjustment to the structure of tariffs may therefore be expected during the first year of the second regulatory control period.

3.105 It is possible, however, that absolute price flexibility may see the network service provider take a short-term view of tariff structures, in the knowledge that year-on-year adjustments in individual tariffs (within the cap on average prices) may enable it to revenue optimise or otherwise manage volume risk. Hence, some limits on price flexibility – once a cost reflective price structure is initially achieved – may encourage the network service provider to take a longer-term view when setting tariff structures.

3.106 Likewise, as substantial or frequent price changes can impose unreasonable or inequitable adjustment costs on end users (who make decisions on location, production and investment in electricity-consuming equipment that are influenced by existing prices), there is a role to be played by side constraints on the annual movement of individual network access tariffs to prevent (or phase in) 'price shocks'.

3.107 The Commission's decision to impose a side constraint mechanism is intended to balance both these requirements.

3.108 Power and Water has raised the concern that the side constraint, S, has the potential to materially constrain the opportunities for the network service provider to price efficiently and recover the allowed revenues implied by the price cap.

3.109 The Commission understands this concern. In the Draft Decision, the Commission acknowledged that excessive side constraints could dampen the incentive for the network service provider to move towards a cost-reflective tariff structure. Encouraging such movements is among the key objectives of moving to a price cap approach. The only rebalancing that should be discouraged is that associated with attempts at revenue optimisation rather than efficiency. Regrettably, it is hard to distinguish between these two types of rebalancing.

3.110 While the Commission is committed to the use of a side constraint on each individual customer's per unit network charge, the level and profile of the constraint is yet to be determined. This will occur as part of the next, implementation stage of the reset. The Commission currently has an open mind on whether the constraint should apply equally to each year or, as an alternative, have a larger value in year 1 in recognition that tariff structure changes are reasonably expected to be greater initially than – after the desired cost reflectivity of tariff structures has been achieved – over the longer term. The Commission will explore these options further and consult with the network service provider prior to making a decision on the level and profile of the constraint.

3.111 In setting any side constraints, the Commission expects to err on the high side, but not too high. Side constraints are intended to assign some risk to the network service provider, to increase the incentive on the network service provider to make the pricing structure as cost reflective as possible in advance rather than to rely on reactive year-on-year tariff changes as developments unfold.

CHAPTER

4

NEXT STEPS

4.1 The decision set out in this paper only addresses methodological issues (i.e., formulations and estimation procedures) and not *actual quantification* (i.e., values and estimates). Likewise, the decision only relates to the approval of the average level of network access tariffs, and not any approval of the related *structure* of such tariffs or the method for calculating associated *capital charges*.

Draft Determination

4.2 Values and estimates will be the subject of a draft decision in the Draft Determination paper to be published by mid-December.

4.3 The Draft Determination will set out the following:

- the re-calculation of WACC applicable in respect of the 2002-03 year;
- an updated building blocks calculation in respect of the 2002-03 year, with the DKTL included in the main calculation;
- the calculation of the resultant Z factor;
- the calculation of the weighted average of approved network access tariffs applying in 2003-04, being tariffs based on the first regulatory control period revenue cap;
- the calculation of an adjusted base year (2003-04) weighted average of network access tariffs, by applying the relevant Z factor to the weighted average of network access tariffs approved by the Commission to apply in 2003-04;
- the insertion of a base streetlighting tariff;
- the value of X_1 to apply during the second regulatory control period, with the Commission's rationale and any calculations;
- the value of X_2 to apply during the second regulatory control period, with the Commission's rationale and any calculations; and
- the value of S to apply during the second regulatory control period (possibly distinguishing between the first and subsequent years), with the Commission's rationale and any calculations.

4.4 To facilitate this Draft Determination, the Commission has separately written to Power and Water seeking the necessary information to allow the Commission to quantify certain parameters and estimates. The information requested of the network service provider includes the following:

- with respect to the 2002-03 year, the assets, depreciation and operating cost information necessary for the building blocks calculation involved in estimating the Z factor; and

- with respect to the 2002-03 year, the quantity values (q^i) associated with each of the individual network access tariffs and their components (p^i).

Principles Statements

4.5 Before the network service provider can submit to the Commission for approval the proposed tariff schedules for 2004-05, the network service provider must submit, and the Commission approve, both:

- a Pricing Principles Statement (clause 75(5) of the Code); and
- a Capital Contributions Principles Statement (clause 81(2) of the Code).

4.6 The Commission expects that Power and Water will progress development of draft Statements in parallel with its submission on the Draft Determination, since the numerical outcome of the determination should not affect the principles that apply in relation to network price structures and capital contributions.

4.7 While there is no requirement on the Commission to undertake specific consultation on these draft Statements, clause 62(2) of the Code contains a general consultation requirement in relation to all price and pricing methodology determinations and approvals. On this basis, the Commission proposes to make Power and Water's draft Statements available for any comment during the period of its own deliberations.

Timetable

4.8 The Commission's timetable for the remainder of the 2004 reset is as follows:

Target	Event
28 November 2003	Power and Water to provide data for the Draft Determination
12 December 2003	Publication of the Commission's Draft Determination of the numerical value of the parameters required by the price regulation methodology applying in the second regulatory control period
end December 2003	Submissions on the Draft Determination due
	Submission of Power and Water's Draft Pricing Principles Statement and Draft Capital Contribution Principles Statement due
	Publication of Draft Statements for comment (without covering commentary by the Commission)
end January 2004	Publication of the Commission's Final Determination of the numerical value of the parameters required by the price regulation methodology applying in the second regulatory control period
	Submissions due on Draft Pricing Principles Statement and Draft Capital Contribution Principles Statement
mid February 2004	Publication of the Commission's approval of Draft Pricing Principles Statement and Draft Capital Contribution Principles Statement
end February 2004	Power and Water to submit proposed tariff schedules for 2004-05 to the Commission for approval
end March 2004	Publication of the Commission's approval of the tariff schedules for 2004-05