

# **Review of DEUS Developer Charges Guidelines for Water Supply, Sewerage and Stormwater**

**Water - Issues Paper**  
April 2007



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**Discussion Paper DP87**

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Submissions in response to this paper are due on **11 May 2007**.

Submissions should be sent to: **Review of DEUS Developer Charges Guidelines for Water Supply, Sewerage and Stormwater**  
Independent Pricing and Regulatory Tribunal  
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# TABLE OF CONTENTS

<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
1.1	Impetus for the review	2
1.2	Terms of Reference	3
1.3	The review process	3
1.4	Purpose and structure of this Issues Paper	3
<b>2</b>	<b>THE DEUS DEVELOPER CHARGES GUIDELINES</b>	<b>5</b>
2.1	Objectives of developer charges	5
2.2	The developer charges concept	6
2.3	Overview of the DEUS guidelines	6
2.3.1	The levying of developer charges	7
2.3.2	Development servicing plans	7
2.4	Calculating the capital charge	8
2.4.1	Which assets should be included in developer charge calculations	9
2.4.2	How assets should be valued	10
2.4.3	Capital charge calculation methods	10
2.4.4	Discount rate	11
2.4.5	Agglomeration of DSPs	12
2.5	Calculating the reduction amount	12
2.5.1	NPV of annual charges method	13
2.5.2	Direct NPV method	14
2.5.3	Under 2000 Assessments method	15
2.6	Comparison with IPART Methodology	15
<b>3</b>	<b>BROAD ISSUES WITH THE DEUS GUIDELINES</b>	<b>17</b>
3.1	Simplicity	17
3.2	Transparency	18
3.3	Consistency of charging across NSW	18
3.4	Cost reflectivity	19
3.5	Treatment of subsidies	19
3.5.1	Treatment of cross-subsidies from existing development	19
3.5.2	Backlog Service Areas	19
3.5.3	Inclusion of subsidies in developer charge calculations	20
3.6	Regulatory oversight	20
3.7	Developer Charges for Non-Residential Development	21
<b>4</b>	<b>TECHNICAL ASPECTS OF THE DEUS GUIDELINES</b>	<b>23</b>
4.1	Which assets should be included in developer charges?	23
4.1.1	Pre-1970 assets	23
4.1.2	Future Assets	24
4.1.3	Definition of system assets	24
4.1.4	Assessing the capacity of assets	24
4.2	Valuation of Assets	25
4.3	Agglomeration of DSPs	26
4.4	Calculation of the capital charge where lot take up is non-uniform	27
4.5	Calculation of the reduction amount	27
4.6	Equivalent tenements	28
<b>APPENDIX 1</b>	<b>GLOSSARY</b>	<b>31</b>
<b>APPENDIX 2</b>	<b>TERMS OF REFERENCE</b>	<b>32</b>
<b>APPENDIX 3</b>	<b>THE IPART DEVELOPER CHARGES METHODOLOGY</b>	<b>33</b>



# 1 INTRODUCTION

Developer charges are up-front charges levied by water supply authorities on land developers to recover the costs of providing water-related infrastructure to new developments. They help signal the cost of developing in a particular area, and also pass on to developers some of the risk associated with the cost of infrastructure provision.

In NSW all non-metropolitan water supply authorities and local government councils are given authority to levy developer charges under section 64 of the *Local Government Act 1993*. These water authorities (with the exception of Gosford and Wyong Councils) are required to set developer charges according to the *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (hereafter called the DEUS guidelines).<sup>1</sup> These guidelines were developed in 2002 pursuant to section 306 of the *Water Management Act 2000* by the then Department of Land and Water Conservation (now regulated by the Department of Energy, Utilities and Sustainability (DEUS)).

Local Water Authorities (LWAs), of which there are over 100, often face vastly different local hydrologic, geographic and demographic conditions. Some authorities service a great many small villages across large areas, while others service relatively large urban centres. Some service communities in economic decline, while others service regional centres or rapidly growing coastal towns. The major challenge for the DEUS guidelines is to provide a consistent approach to calculating developer charges while recognising and accommodating the variety of local conditions.

The approach used in the DEUS guidelines was derived from the Independent Pricing and Regulatory Tribunal's (the Tribunal's) developer charges methodology for the major metropolitan water agencies (Sydney Water Corporation, Hunter Water Corporation, Gosford City Council and Wyong Shire Council). The methodology is based on a net present value (NPV) approach, which calculates developer charges as the capital cost attributable to the development less the future operating profit (or loss) expected to be earned from periodic charges paid by customers in the development area. It is important to note that the IPART methodology did not have the issue of variability of conditions that the DEUS guidelines must accommodate.

A number of changes to the Tribunal's developer charges methodology have been made in the DEUS guidelines. These were for ease of calculation and adoption by the LWAs. The result is that the guidelines provide alternative options that LWAs may use when calculating their developer charges. The DEUS guidelines also give the LWAs the flexibility to establish a combination of developer charges and periodic charges that best reflect the needs of their communities, including socio-economic factors, development objectives and achieving revenue adequacy.

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<sup>1</sup> Developer charges for the four major metropolitan water authorities (Sydney Water Corporation, Hunter Water Corporation, Gosford City Council and Wyong Shire Council) are regulated by the Independent Pricing and Regulatory Tribunal.

## **1.1 Impetus for the review**

A number of factors have contributed to the timing of this review of the guidelines including:

- LWAs have made improvements towards best practice management and therefore now have better data available from which to calculate developer charges.
- A review of the guidelines now is timely as changes would be in time for the 5 yearly review of the LWA's charges, due for adoption by July 2009.
- Comments from the development industry that in attempting to simplify the methodology the guidelines provide too many options, and in doing so have become overly complex, vague and inconsistent.
- Criticism from the development industry about the way LWAs are interpreting and implementing the guidelines.
- Experience with implementing the guidelines resulting in suggestions from stakeholders on how they can be improved.

When the DEUS guidelines were released in 2002, LWAs had limited data on costs of servicing development and future demand from new developments. To accommodate this, the guidelines departed significantly from the Tribunal's developer charges methodology for the metropolitan water agencies.

Since that time, the NSW Government has released the *Best-Practice Management of Water Supply and Sewerage – Guidelines* (best practice guidelines) to encourage continuing improvement in performance and identify 6 criteria for best-practice management of water supply and sewerage. LWAs must comply with these guidelines in order to be able to pay a dividend from the surplus of their water supply or sewerage businesses to their shareholder (the Council).

One requirement of the best practice guidelines is that LWAs develop a strategic business plan, including demand forecasts, regulatory requirements, asset plans and performance indicators. The development of these plans will mean that LWAs now have better quality data available to calculate developer charges and the DEUS Guidelines may need to be amended to reflect this.

A further factor prompting this review is that following a number of years in operation, LWAs and developers now have experience with calculating and implementing charges in accordance with the guidelines. There have been a number of comments from stakeholders criticising elements of the DEUS guidelines and recommending improvements to them.

Finally, a number of stakeholders have expressed concern that LWAs are not interpreting and implementing the existing DEUS guidelines consistently. In addition, there have been criticisms that the guidelines do not provide enough certainty and clarity for developers to understand the basis for developer charges.

## 1.2 Terms of Reference

In response to these concerns, the NSW Government has asked the Tribunal “to review the Water Supply, Sewerage and Stormwater Developer Charges Guidelines and provide recommendations for any improvements”<sup>2</sup>. The Tribunal has been asked to provide a final report by 30 September 2007. A copy of the terms of reference can be found in Appendix 2.

## 1.3 The review process

In conducting its review, the Tribunal will rely on its own research and analysis, as well as public consultation. As part of this consultation the Tribunal invites submissions to the review from DEUS, local water authorities, the development industry and community organisations, and members of the public. Details on how to make submissions are provided at the front of this document, on the page facing the table of contents. To assist in identifying and understanding the key issues for this review the Tribunal has prepared this issues paper to encourage stakeholder comment. The Tribunal will also hold two public workshops as part of the review to provide a further opportunity for stakeholders to present their views.

An indicative timetable for the review is provided below.

**Table 1.1 Indicative timetable for the review**

<b>Task</b>	<b>Timeframe*</b>
Release issues paper	3 April 2007
Submissions due	11 May 2007
Public workshop in Nowra	1 June 2007
Public workshop in Port Macquarie	18 June 2007
Release final report	28 September 2007

\* Please note that these dates are indicative and may be subject to change.

## 1.4 Purpose and structure of this Issues Paper

This issues paper explains the context and key issues for the Tribunal’s investigation, to assist stakeholders in making their submissions:

- Chapter 2 provides an overview of the current DEUS developer charges guidelines
- Chapter 3 outlines a range of broad issues and questions that stakeholders may wish to consider when preparing their submissions
- Chapter 4 sets out some of the technical aspects of the DEUS guidelines that stakeholders may wish to raise when making their submissions.

<sup>2</sup> Letter from Premier Iemma to the Tribunal, dated 18 January 2007.



## 2 THE DEUS DEVELOPER CHARGES GUIDELINES

The DEUS developer charges guidelines specify methodologies that LWAs are permitted to use when calculating developer charges for water, sewerage and stormwater services. The guidelines are based on the principles adopted by the Tribunal in its developer charges determination for Sydney Water Corporation, Hunter Water Corporation, Gosford City Council and Wyong Shire Council. Specifically, that the investment in assets for serving a development area is fully recovered from the development. This investment is recovered through a combination of annual charges and developer charges.

A number of simplifications to the Tribunal's developer charges methodology have been made for the DEUS guidelines. This was for ease of calculation and adoption by the LWAs. The result of this is that the guidelines provide alternative options that LWAs may use when calculating their developer charges.

This chapter outlines the objectives behind the DEUS developer charges guidelines, the approach taken in the guidelines to the calculation of developer charges and how this approach differs to the Tribunal's developer charges methodology for metropolitan water agencies.

### 2.1 Objectives of developer charges

The DEUS guidelines identify the purpose of developer charges as:

1. providing a source of funding for infrastructure required for new urban development; and
2. providing signals regarding the cost of urban development thereby encouraging less costly forms and areas of development<sup>3</sup>.

Most LWAs in NSW have adopted postage stamp periodic charges for water and sewerage services.<sup>4</sup> This means that these periodic prices do not signal the diversity of costs of providing these services in different locations. The DEUS guidelines allow differential charging of developer charges to different development areas, which can signal the costs of developing in different locations.

Developer charges can also serve several other related functions:

- More evenly distribute the risk associated with the cost of developments between the various stakeholders.
- Achieving other pricing objectives such as economic efficiency, revenue adequacy, transparency, simplicity and equity.

The DEUS guidelines seek to meet these objectives while at the same time providing a sufficiently straightforward and flexible approach that can be applied to a large number of LWAs operating in diverse conditions.

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<sup>3</sup> DEUS Guidelines, p iii.

<sup>4</sup> 'Postage stamp pricing' refers to the setting of a common price for a service in a geographic area, irrespective of variations in the cost of supplying the service in different parts of that area (just as there is one price for posting a standard letter within Australia, whether it has to be delivered to the next suburb or to another State).

## 2.2 The developer charges concept

The concept on which the calculation of developer charges in the DEUS guidelines is based is the net present value (NPV) approach adopted by IPART for the four metropolitan water utilities. The fundamental principle of the NPV approach is that the investment in assets for serving a development area is fully recovered from the development, through a combination of up-front charges (the developer charges) and periodic charges. This approach allows future costs and revenues to be reconciled to a single value by discounting them to today's dollars.<sup>5</sup> NPV is a standard tool for making investment decisions and is widely accepted and understood.

The DEUS guidelines note that while they are based on the NPV approach in the IPART determination, they involve a number of simplifications to make them suitable for use by the LWAs.<sup>6</sup> The IPART methodology was developed for use by the four metropolitan water agencies, which operate in different circumstances to the LWAs. For instance, the metropolitan water agencies are subject to periodic price regulation by the Tribunal for water and sewerage charges, and have access to more detailed financial data. Further, the IPART methodology is more prescriptive, and only has to be applicable to four agencies rather than over 100 as is the case for the DEUS guidelines.

## 2.3 Overview of the DEUS guidelines

The DEUS guidelines specify the developer charge as:

The NPV of the cost of existing and future assets used to service the development area (the capital charge).

Less the NPV of the future net operating profits (or losses) expected from providing the services to the development area (the Reduction Amount).

This can also be written as:

$$\text{Developer charge} = \text{Capital charge} - \text{Reduction amount}$$

(cost of providing the assets)                      (recovered through annual bills)

The developer charge is calculated on a per lot basis by dividing both terms in the above equation by the number of equivalent tenements expected for the development area. An equivalent tenement (ET) is a measure of the demand a development will place on the infrastructure in terms of the water consumption and sewage discharge for an average residential dwelling. The DEUS guidelines do not prescribe the way in which LWAs should quantify ETs; this differs to the Tribunal's methodology in which the Tribunal specifies the demand per ET for each water agency that is to be used in applying its methodology.

The DEUS guidelines provide different options for calculating the capital charge and the reduction amount. This differs from the Tribunal's approach (which is summarised in Appendix 3) which sets a single formula based methodology for use by all the major metropolitan water authorities to determine developer charges.

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<sup>5</sup> Discounting recognises the time value of money. A dollar today is worth more than a dollar in the future because it can be invested and receive a rate of return.  
<sup>6</sup> DEUS guidelines, p 3.

The remainder of this chapter outlines the process for calculating developer charges as set out in the DEUS guidelines

### 2.3.1 The levying of developer charges

LWAs are given authority to levy developer charges under the *Local Government Act 1993* and are required to set developer charges according to the DEUS guidelines. The DEUS guidelines provide that the calculated developer charges are the maximum value that may be levied by a water utility to recover the costs associated with the provision of water and sewerage infrastructure to new developments. A utility may elect to charge less than the calculated amount provided that it discloses the resulting cross-subsidy from existing customers. In deciding to charge lower than the maximum, the DEUS guidelines allow councils to consider financial, social and environment factors to determine balanced and equitable developer charges. LWAs are also permitted to phase in new developer charges over a three year period.

#### Box 2.1 Examples of Developer Charges set below calculated maximum

Hastings Council based around the Port Macquarie region has resolved to levy developer charges for sewerage services well below the calculated maximum developer charge for two of its three DSP areas. Page 12 of the Hastings Council Development Servicing Plan for Sewerage March 2005 includes the following information:

DSP No.	DSP Name	Calculated Developer Charge (\$/ET)	Adopted Developer Charge (\$/ET)
1	Kew/Kendall	\$16,380	\$3,642
2	Dunbogan, Lake Cathie/Bonny Hills	\$7,305	\$3,642
3	Wauchope, Port Macquarie	\$3,441	\$3,242

The DSP goes on to indicate that the result of levying developer charges below the permitted maximum is an increase on annual bills of existing customers of 7.9 per cent.

The DEUS guidelines also allow councils which have levels of growth below 5 ETs per year to forgo levying developer charges if they choose to do so. However, councils adopting this approach must prepare an exemption document reporting previous and forecast growth in ETs over the next 5 years.

### 2.3.2 Development servicing plans

Each developer charge must be calculated for a development servicing plan (DSP) area. If the LWAs have elected not to levy developer charges (ie, because they have levels of growth below 5 ETs per year), they are not required to prepare a DSP but must prepare a policy document that includes developer charges calculated according to the DEUS guidelines to demonstrate the level of cross subsidy paid by existing customers to new developments.

For LWAs proposing to levy developer charges, the DEUS guidelines specify that DSP areas should be established according to service areas. The guidelines define service areas as:

- areas served by a separate water distribution system
- areas served by a separate sewage treatment works
- separate small towns or villages
- new development areas of over 500 lots.

The guidelines require LWAs to exhibit DSPs for at least 30 working days before developer charges are implemented. The DSPs must include the following information:

- a summary of the contents of the DSP
- the name, area and basis for determining the boundaries of the DSP, as well as the timing for payment of charges
- demographic and land use planning information including estimated population and population forecasts
- timing of capital works
- standards of service and design parameters for the DSP area
- the calculated developer charge
- any cross subsidies
- reference to a background document containing information about how charges were calculated, commissioning dates, size/length of assets, MEERA valuation of assets, total asset capacity (in ETs and the number of ETs served in the DSP area)
- a reference to other relevant DSPs and to section 94 contribution plans<sup>7</sup>.

The DEUS guidelines specify that developer charges for each DSP should be reviewed every 5 to 6 years. After adoption of a DSP, developer charges should be adjusted for inflation each year.

## 2.4 Calculating the capital charge

The capital charge represents the efficient cost of assets used to service the development area. These costs are initially funded by the water authority. The DEUS guidelines allow the inclusion of both existing and future assets in the calculation of developer charges.

The capital charge is dependent on the:

- time to full take-up of capacity
- capital cost of the infrastructure
- discount rate.

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<sup>7</sup> Section 94 contribution plans document contributions by developments for infrastructure and facilities (other than water and sewerage) under section 94 of the *Environmental Planning and Assessment Act 1979*.

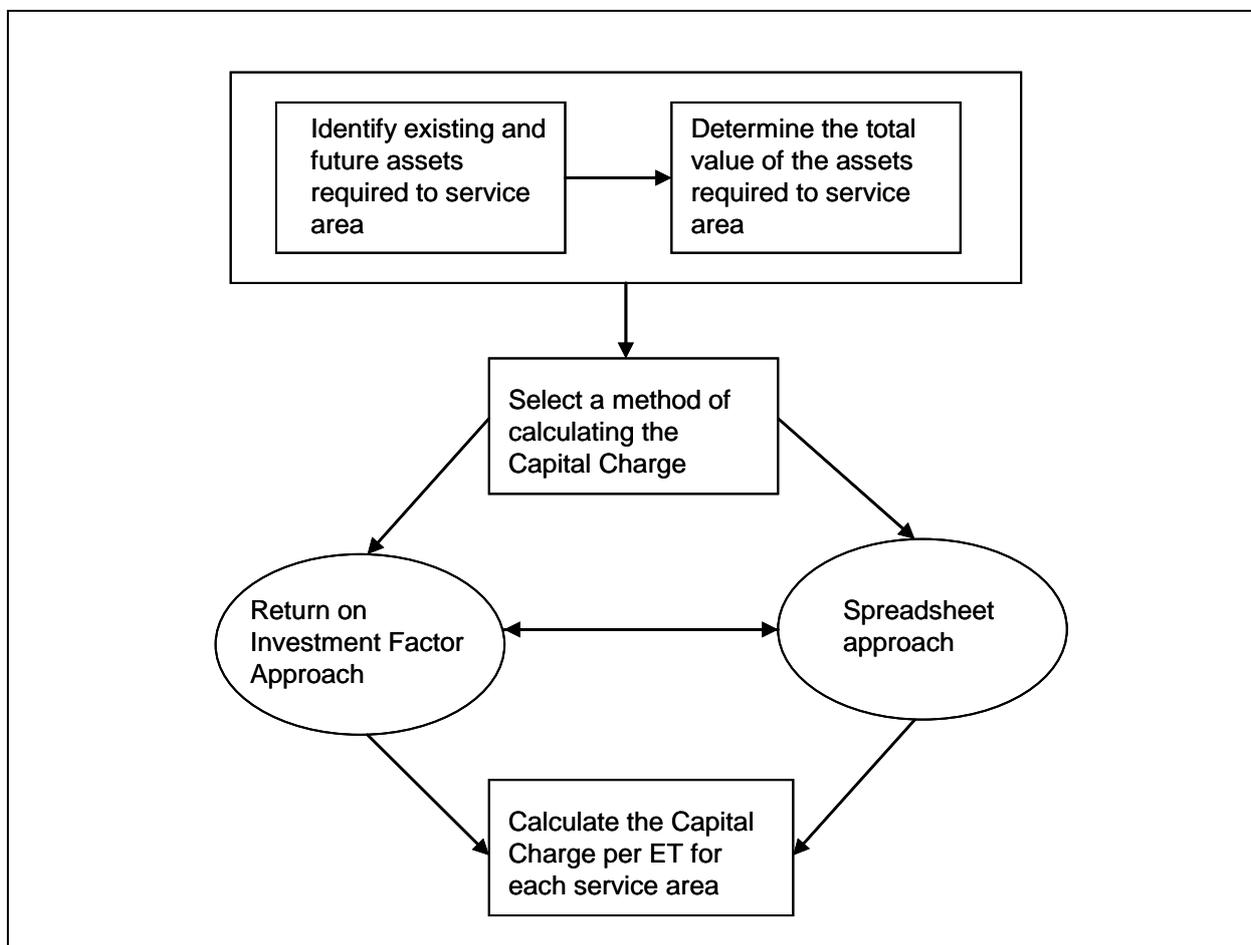
To calculate the capital charge LWAs must first estimate the time period until asset capacity is fully utilised (for both existing and future assets). If information is available this should be based on actual take-up rates. Alternatively, an average based on take-up rates for similar developments may be used.

LWAs must then determine the capital cost for assets serving various DSP areas. The DEUS guidelines provide guidance on this, in particular:

- Which assets should be included in developer charge calculations.
- How assets should be valued.
- Determining the number of development servicing plan areas.

Box 2.2 presents the steps outlined in the DEUS guidelines for the calculation of the capital charge.

**Box 2.2 Steps involved in the calculation of the Capital Charge**



**2.4.1 Which assets should be included in developer charge calculations**

The DEUS guidelines stipulate that to determine the assets serving a development, the LWAs must:

- identify which assets, existing or future, are part of the system servicing a DSP area
- apportion assets that service more than one DSP area.

This is depicted as the first step in the diagram in Box 2.2.

For assets to be included in a developer charge, the LWA must demonstrate that there is a nexus, or close connection, between the development covered by the DSP and the asset. Table 2.1 outlines assets that may be included and excluded in the developer charge for a particular DSP area.

**Table 2.1 Assets to be included in developer charges**

Group	Capital charge calculation
Existing assets	Include if they serve the new development. Exclude the capacity that is not expected to be utilised over the planning period. Exclude pre-1970 assets with the exception of water headworks system assets and sewerage major works.
Future assets	Include assets planned within the next 5 years. Include assets beyond 5 years if there is a clear nexus to the development.
Reticulation assets	Exclude
Future renewals	Exclude
Assets for out-of-sequence development	Exclude except where developer initially meets the full capital cost of these assets.

Where assets are shared by a number of DSP areas or form part of a system, the DEUS guidelines specify that the capital charge should be calculated for the system based on the expected system use. The assets must then be apportioned according to design capacity and expected demand of each development area.

The existing assets that the DEUS guidelines permit for inclusion in the calculation of developer charges differ to those allowable for inclusion under the IPART methodology. Specifically the IPART methodology excludes all pre-1970s assets because they were considered by the Tribunal at the time of developing its methodology to have already been paid for, while the DEUS guidelines make exceptions for water supply headworks system assets.

**2.4.2 How assets should be valued**

The DEUS guidelines specify the valuation method for assets to be included in the capital charge. Specifically, that existing assets are to be valued according to the Modern Engineering Equivalent Replacement Asset (MEERA) cost. Future assets are to be valued from investigation/concept design reports.

**2.4.3 Capital charge calculation methods**

The DEUS Guidelines allow two methods for calculating the capital charge:

- the return on investment (ROI) approach
- the spreadsheet approach.

### ***Return on Investment Factor Approach***

While the DEUS guidelines indicate that both methods “give the same results”<sup>8</sup>, they state that the ROI approach is “simpler to use”<sup>9</sup>. The ROI approach involves calculating the capital cost of servicing a development area and multiplying it by an ‘ROI factor’ to determine the capital charge. The ROI factor equates the present value of annual developer charges revenue to the capital cost, assuming a specific discount rate.<sup>10</sup> The capital cost per equivalent tenement (ET) is the value of the relevant assets serving a development area divided by the capacity of the assets (in ETs). This approach allows LWAs to calculate developer charges that will recover capital costs plus a rate of return on investment over the planning period.

The DEUS guidelines outline the method for calculating the ROI factor. This method assumes there is uniform take-up of lots in the development over time.

$$\text{ROI} = - \text{PMT}(r/100, t, 1) \times t / (1 + r/100)$$

Where

r = discount rate (%)

t = take up period (years)

PMT() is a Microsoft Excel spreadsheet function which calculates the annual payment for a loan with constant payments and a constant interest rate.

To calculate the capital charge, the LWA must multiply the ROI by the capital cost (per ET) of servicing the development. This can be written as:

$$\text{Capital charge} = \text{capital cost per ET} \times \text{ROI factor}$$

### ***Spreadsheet Approach***

The DEUS guidelines also provide for a ‘spreadsheet method’ for calculating the capital charge where the take up of new lots is expected to be non-uniform. The spreadsheet method uses the same principles as the Tribunal’s NPV approach. This involves dividing the present value of the capital cost associated with serving the development by the present value of the number of ETs. This can be written as:

$$\text{Capital charge} = \text{PV}(\text{capital cost}) \div \text{PV}(\text{number of ETs})$$

Discounting the number of ETs allows the calculation to incorporate non-uniform take-up of lots in a development. This smooths out ‘lumpy’ capital expenditure and rate of development.

## **2.4.4 Discount rate**

The DEUS guidelines specify the discount rates LWAs must use when calculating capital charges. These are shown in Table 2.2.

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<sup>8</sup> DEUS Guidelines, p 21.

<sup>9</sup> DEUS Guidelines, p 22.

<sup>10</sup> Discount rates are discussed in section 2.4.5.

**Table 2.2 Discount rates for calculating the capital charge**

<b>Assets</b>	<b>Time period for calculation</b>	<b>Discount rate</b>
Pre-1996 assets	From January 1996 until the asset capacity will be taken up.	3%
Post-1996 assets	From commissioning date until the capacity will be taken up	7%

These discount rates are the same as those specified in the Tribunal’s developer charges methodology for the metropolitan water agencies. The discount rate reflects the opportunity cost to the agency of funding infrastructure works. In providing infrastructure prior to development, water agencies face several risks such as uncertainty of rate of development, changes in construction costs and changes in interest rates.

The discount rate of 7 per cent applied to post-1996 assets was based on the benchmark rate of return used in the periodic price determinations for the metropolitan water agencies. The lower discount rate for pre-1996 assets, reflected the Tribunal’s view that agencies did not expect a full commercial return from developer charges prior to the Tribunal’s determination in 1996.

#### **2.4.5 Agglomeration of DSPs**

The guidelines note that LWAs should minimise the number of DSPs to reduce administration costs and simplify developer charges. Accordingly, they specify that where the capital charges for different DSPs are within 30 per cent of each other, charges should be agglomerated into a single DSP. Where DSPs are combined, the weighted average capital charge is calculated for the new DSP area according to the proportion of growth expected in the original service areas.<sup>11</sup> DSPs do not have to be in geographical proximity in order to be combined, it is sufficient just that the calculated maximum developer charges are within 30 per cent.

### **2.5 Calculating the reduction amount**

The reduction amount is the net present value of the difference between expected operating revenue and expected operating costs associated with a development area. Its inclusion in the guidelines takes into account income received from periodic charges and avoids ‘double dipping’ (where the same costs are recovered through both periodic and developer charges).

The DEUS Guidelines establish three methods for calculating the reduction amount in the developer charges formula. These are:

- NPV of annual charges method.
- Direct NPV method.
- Under 2,000 assessments method.

The guidelines favour the NPV of annual charges method, but note that this approach requires LWAs to have robust business plans including 30-year financial plans. When the guidelines were released, many LWAs did not have this data, so the Direct NPV method was developed to simplify the calculation. The DEUS guidelines note that by 2007-2009 all LWA

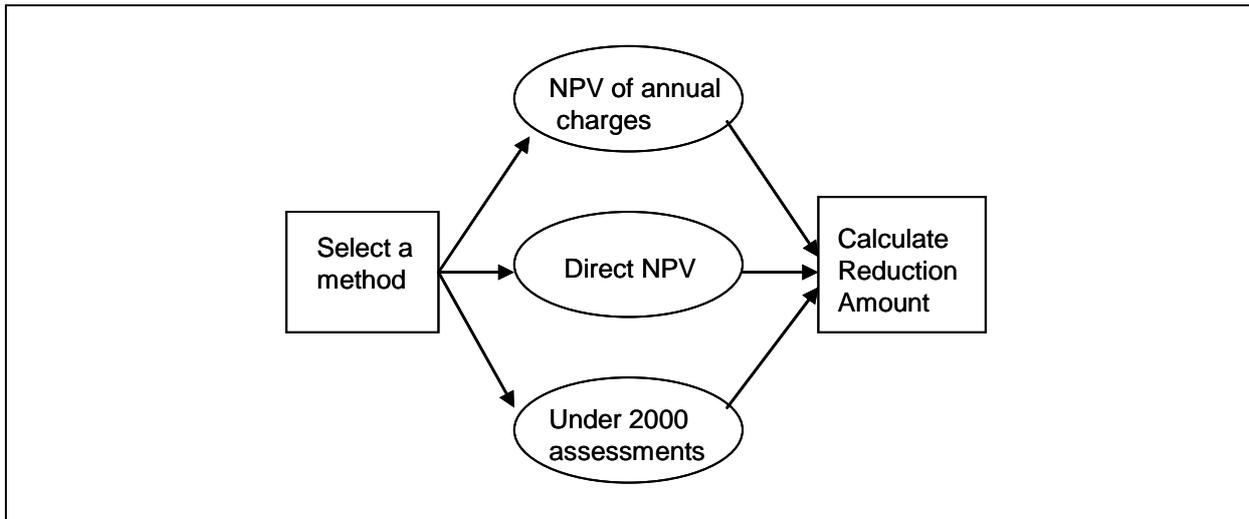
<sup>11</sup> The DEUS guidelines (pp 92-93) outline the method for agglomerating DSPs and for calculating the weighted average capital charge.

should have developed strategic business plans and therefore use the NPV of annual charges method.

The Under 2,000 assessments method may be used where the tariff area is smaller than 2,000 lots. For these LWAs the reduction amount is assumed to be 50 per cent of the capital charge. The guidelines do not explain the basis for this assumption.

Box 2.3 presents a flow diagram of the steps outlined in the DEUS guidelines for calculating the reduction amount.

**Box 2.3 Steps in calculating the reduction amount**



Each method of calculating the reduction amount is explained in more detail below.

### 2.5.1 NPV of annual charges method

This method involves calculation of the operating profit from periodic charges. This can be written as:

$$\text{Reduction amount} = \text{PV}(\text{annual charges revenue}) - \text{PV}(\text{operating costs})$$

The operating costs should be based on the most efficient and lowest cost means of providing the service. To calculate the reduction amount per ET, it should be divided by the present value of the number of ETs expected to connect to the system over the planning horizon.

Where LWAs have postage stamp periodic charges, a single reduction amount may be calculated for the whole system.

The DEUS guidelines advocate an iterative approach for determining the reduction amount. This involves:

1. calculation of weighted average capital charges over all DSP areas
2. assumption of an initial reduction amount and calculation of the developer charge using this assumption
3. long term financial modelling to obtain projections of the required annual revenues and operating costs based on the developer charges from 2 above
4. calculation of the reduction amount resulting from these projections of revenues and costs for each year of the projection
5. comparison of the calculated reduction amounts in 4 above with the input reduction amounts in 2 above
6. revising the input reduction amounts to those calculated in 5 and repeating steps 3 to 5 until the output reduction amount for the first 5 years is within 2 per cent of the input reduction amount.

This iterative approach represents a significant departure from the Tribunal's developer charges methodology. The Tribunal's approach involves setting periodic charges based on efficient capital and operating costs and then calculating the reduction amount (or operating surplus) based on the revenue from these periodic charges.<sup>12</sup> As LWAs are not subject to determination of periodic prices by the Tribunal, these are instead calculated by the LWA itself in the context of total revenue needs of the business, hence the need for the iterative approach.

Within IPART's methodology for the metropolitan water agencies, all forecast capital expenditure (for the existing system and for growth) is added to the regulatory asset base (RAB). As developer charges are recovered, the RAB is adjusted downwards to reflect this revenue. In this way, the RAB acts as an adjustment mechanism to ensure that agencies recover the costs of running the business.

### 2.5.2 Direct NPV method

The direct NPV method for calculating the reduction amount relies on different principles to the NPV of annual charges method. The guidelines state that the rationale for the direct NPV approach is that in the long term, developer charges should recover the capital cost of serving a development area less the present value of future renewals expenditure. Thus, this alternative allows for a reduction amount equivalent to the renewals expenditure, with allowance also for expenditure on works to improve standards and recovery of that part of any debt which is serviced by annual charges. This can be written as:

**Reduction amount = PV(renewals expenditure) per ET + PV(works for improving standards) per ET + Part of net debt serviced by annual charges per ET**

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<sup>12</sup> The Tribunal sets periodic charges for the metropolitan water agencies for up to 5 years. For the calculation of developer charges, agencies assume these prices are fixed over the planning period. These charges are updated at each 5-yearly developer charge review.

### 2.5.3 Under 2000 Assessments method

The Under 2000 Assessments method may be used for LWAs or tariff areas with fewer than 2000 assessments. The guidelines note that this method is not cost reflective. This alternative involves LWAs adopting a reduction amount equivalent to 50 per cent of the capital charge, ie:

**Reduction amount = 0.5 × capital charge**

## 2.6 Comparison with IPART Methodology

Table 2.3 below presents a comparison of some of the key elements of the developer charges methodology in the DEUS guidelines with the Tribunal's methodology for metropolitan water agencies.

Many of the differences in the developer charges methodologies can be attributed to the nature of the DEUS guidelines, when compared to the Tribunal's determination. A fundamental difference between the DEUS guidelines and the IPART methodology is that the DEUS guidelines take a more light handed approach to regulation, and are intended to be more flexible and allow the LWAs more discretion. The Tribunal's methodology is part of a legally binding determination, and is therefore of a more prescriptive nature. The Tribunal's methodology is only intended to apply to the four metropolitan agencies and therefore the extent of flexibility and discretion built into the DEUS guidelines was not necessary.

**Table 2.3 Comparison between DEUS guidelines and IPART methodology**

	<b>DEUS Guidelines</b>	<b>IPART Determination</b>
<b>Existing assets</b>	<p>Include if they serve the new development Exclude capacity not expected to be utilised over planning period</p> <p>Exclude pre-1970s assets but water headworks system assets and sewerage major works allowed</p>	<p>Include if they serve the new development Exclude capacity not expected to be utilised by growth development Exclude all pre-1970s assets</p>
<b>Future assets</b>	<p>Include assets planned within approximately next 5 years Assets planned beyond 5 years allowed if nexus to development</p>	<p>Include assets planned provided there is a nexus to development</p>
<b>Valuation of assets</b>	<p>Existing assets valued using MEERA Future assets valued from design reports</p>	<p>Existing assets valued using MEERA Future assets valued by estimate of efficient costs</p>
<b>Calculation of capital charge</b>	<p>Choice of two methods:</p> <ul style="list-style-type: none"> <li>○ ROI approach</li> <li>○ Spreadsheet approach (essentially a NPV approach)</li> </ul>	<p>NPV approach</p>
<b>Discount rate</b>	<p>Pre-1996 assets 3%</p> <p>Post-1996 assets 7%</p>	<p>Pre-1996 assets 3% for Sydney and Hunter; 0% for Gosford and Wyong Post-1996 assets 7%</p>
<b>Agglomeration of DSPs</b>	<p>Permitted where capital charges of DSPs are within 30% of each other</p>	<p>Not allowed</p>
<b>Reduction amount</b>	<p>Choice of three methods:</p> <ul style="list-style-type: none"> <li>○ NPV of annual charges which is an iterative approach where the reduction amount is the difference between the PV of periodic revenue and the PV of operating costs</li> <li>○ Direct NPV method, where the reduction amount is the sum of the PV of renewals expenditure, works for improving standards and part of net debt</li> <li>○ Under 2,000 assessments method where reduction amount is simply 50% of capital charge</li> </ul>	<p>NPV of the difference between the expected operating revenue and expected operating costs</p>
<b>Equivalent tenements</b>	<p>LWAs to determine demand per ET</p>	<p>Tribunal prescribes demand per ET for each agency</p>

### 3 BROAD ISSUES WITH THE DEUS GUIDELINES

This chapter and the following chapter present a number of issues that stakeholders may wish the Tribunal to consider in its review of the DEUS guidelines. This chapter highlights a number of the more general aspects of the DEUS guidelines, while chapter 4 focuses on some of the more specific and technical matters related to the guidelines.

The issues in this chapter relate to the broader underlying principles behind the DEUS guidelines, such as simplicity, transparency, consistency and cost reflectivity. The Tribunal is interested in stakeholder's views on whether the DEUS guidelines satisfy these criteria. The issues and questions listed are not exhaustive – stakeholders should feel free to raise and discuss any other issues they consider relevant to the review when making their submissions.

It is important to keep in mind that ultimately the DEUS guidelines will represent a trade off between a number of competing aims, such as economic efficiency, equity, simplicity and applicability to a diverse range of agencies.

#### 3.1 Simplicity

As well as economic efficiency and revenue adequacy, simplicity is a key objective of pricing regimes. This is particularly relevant for LWAs as many have limited data and resources available to them.

The DEUS guidelines state that departures from the Tribunal's developer charges methodology are to provide greater simplicity. However, stakeholders from the development industry have expressed concern that the guidelines in fact impose greater complexity because of the variety of methods available. In addition, they claim that these methods are based on flawed financial assumptions.

The Tribunal is concerned that the variety of calculation methods for the capital charge and the reduction amount in the guidelines may lead to confusion about which method to use as well as inconsistent results.

The Tribunal acknowledges that there is a need for simplicity in the pricing approach for LWAs. At the same time, simplicity should not come at the expense of the other objectives of a pricing regime. That is, if economic efficiency, revenue adequacy, transparency or equity is being compromised, alternative approaches may be needed.

*The Tribunal welcomes comments on whether the DEUS guidelines achieve the pricing objective of simplicity. Do the various methods allowed by the guidelines for calculating the capital charge and reduction amount add unnecessary complexity? How can the methods allowed be simplified in light of better data, more experience and a greater understanding of how developer charges are levied? Will simplification lead to a loss of flexibility?*

## 3.2 Transparency

One of the objectives of price regulation is to provide greater transparency in charging where there is a monopoly service provider. For this purpose the DEUS guidelines require LWAs to include certain information in their DSPs and exhibit them before the charges are implemented.

Stakeholders have criticised LWAs for denying them access to:

- Information about the basis for calculations of the developer charges during the exhibition periods for new DSPs.
- Documentation of servicing strategies, mapping of existing and proposed infrastructure, unit cost references, breakdown of major expenditures, description of assets, asset registers and asset capacities.
- Demographic data of the projected population, dwellings and lots and the determination of equivalent tenements.

Without access to this data, stakeholders are unable to verify the calculation of the charges, which is an important part of light-handed price regulation.

*The Tribunal welcomes comments on whether there is a need for greater transparency in the developer charges guidelines. If so, in which areas is there a lack of transparency and how can this be improved? Are there any difficulties for LWAs in meeting transparency requirements?*

## 3.3 Consistency of charging across NSW

One of the objectives of the DEUS guidelines was to establish a consistent approach for the calculation of developer charges, while still allowing enough flexibility to accommodate the diverse needs of the 107 LWAs across NSW.

The development industry has argued that the DEUS guidelines provide too much flexibility, resulting in large variations in charges between LWAs depending on their individual objectives.

Developers would prefer to have a more consistent approach to developer charges calculation across the state to provide greater certainty. They argue that a consistent developer charges methodology should be applied to LWAs as well as the major metropolitan water agencies.

*The Tribunal welcomes comments on the advantages and disadvantages of a common approach to developer charge calculation across NSW. Should or could the Tribunal's methodology for metropolitan areas be adopted for use across the state? Is this a practical option? How else could consistency be improved?*

### 3.4 Cost reflectivity

One of the principles of the DEUS guidelines and the Council of Australian Government (COAG) pricing reforms is that prices for water services should reflect the costs of providing the service. The DEUS guidelines state that “it is important that charges should indicate relative costs of providing infrastructure for urban developments ... to ensure that charges do not distort the form and sequence of development.”<sup>13</sup>

However, the DEUS guidelines also allow LWAs flexibility to recover costs either through developer charges or periodic charges. This can lead to wide variations in price structures and magnitudes of each charge type depending on the objectives of the councils. For example, if there is a high rate of development and the council wants to encourage this, they are more likely to want a lower developer charge to provide incentives for development.

*The Tribunal welcomes comments on issues associated with cost reflectivity of developer charges. Are there significant differences between developer charges within local government areas? Should LWAs have the right to balance developer and periodic charges within their areas in the way they see fit?*

### 3.5 Treatment of subsidies

A key principle of developer charges is that they should be set at a level which recovers the costs of assets used to provide water-related infrastructure with a sufficient nexus between the assets and the service being a key requirement. Councils however, may have other objectives which may result in cross subsidies or over recovery of costs. Such cross subsidies and over recovery would seem to be inconsistent with the stated objective of developer charges.

#### 3.5.1 Treatment of cross-subsidies from existing development

The DEUS guidelines specify how the LWAs are to calculate a ‘maximum developer charge’. LWAs however, may choose to levy a lesser than maximum amount, for example, if they are seeking to encourage new developments. The DEUS guidelines specify that if the developer charges levied by the LWA do not recover the full cost of new developments, the resulting cross subsidy from existing users must be calculated and published in the DSP.

*The Tribunal welcomes comments on the treatment of subsidies in the calculation of developer charges. Should cross subsidies be permitted where the extent of the cross subsidy is disclosed? Should there be limits on the amount of cross subsidisation allowed? Should any subsidies be paid out of Council’s general fund rather than funded through higher water and sewerage charges on existing residents?*

#### 3.5.2 Backlog Service Areas

Backlog service areas are existing developments within an LWA’s area of operations that do not have sewerage services. In many cases, sewerage services are provided many years after the development of the areas, a process which can be very expensive. Where it is deemed desirable to provide water or sewerage to these areas, the NSW Government pays LWAs or councils a subsidy to help cover the cost of providing this infrastructure. In other cases, the

<sup>13</sup> DEUS Guidelines, p 1.

cost is partly covered through periodic water and/or sewerage prices. This reflects the social equity of providing safe water services to all at an affordable price.

The Tribunal is interested in understanding how LWAs are treating backlog sewerage areas in the calculation of developer charges. Developers argue that high costs of servicing backlog areas are being included in developer charges for new development areas. If this is the case, new development areas will subsidise the cost of servicing backlog areas as well as paying the full cost of their own water and sewerage services.

This would appear to be inconsistent with a key principle of developer charges insofar as growth development areas have no proper nexus to the cost associated with backlog areas. In addition, if the LWA has also received government funding to help pay for servicing the backlog area, a double subsidy may arise.

*The Tribunal welcomes comments on how the costs of servicing backlog areas should be treated.*

### **3.5.3 Inclusion of subsidies in developer charge calculations**

The Local Government Act, Water Management Act and DEUS's Best Practice Management of Water Supply and Sewerage<sup>14</sup> provide that subsidies given by the State Government to LWAs for water and sewerage infrastructure should not be excluded from the calculation of developer charges. This provision allows the LWA to collect the government subsidy and also seek to recover the full cost of the infrastructure through the developer charge. The effect of this is to allow the LWAs to 'double dip' with the subsidy being just a cash injection to the business. The rationale for allowing this does not appear to be too clear and the practice would seem to be inconsistent with the principles of cost reflectivity and cost recovery.

*The Tribunal welcomes comments on whether subsidies given to LWAs for infrastructure provision should be excluded from the calculation of developer charges.*

## **3.6 Regulatory oversight**

The DEUS guidelines provide arbitration power for DEUS to resolve disputes over LWAs' developer charges. However, the process for dispute resolution is not fully documented in the guidelines and there have been requests for more explanation concerning the details of arbitration procedures. Developers also claim that DEUS has not required LWAs to comply with some elements of the guidelines.

*The Tribunal welcomes comments on the extent to which the DEUS guidelines provide latitude with compliance and whether and how, enforcement and dispute resolution processes included in the Guidelines can be strengthened.*

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<sup>14</sup> DEUS, *Best-Practice Management of Water Supply and Sewerage – Guidelines*, 2004, p 39.

### 3.7 Developer Charges for Non-Residential Development

The DEUS guidelines are slightly more complex for non-residential development than for dwellings. The extra steps to calculate the non-residential charges are prescriptive; however they do not provide a direct relationship between the method of calculation of the developer charge for non-residential developments and that for residential dwellings. The metropolitan water agencies explicitly link the charges for different types of customers according to their use of water and sewerage systems. These agencies express demand in the form of equivalent tenements. An equivalent tenement is a measure of the demand a development will place on the infrastructure in terms of the water consumption and sewage discharge for an average residential dwelling.

The development industry has raised several issues with the way LWAs calculate developer charges for non-residential developments. These include:

- some LWAs do not use equivalent tenements as the basis for calculating demand on the system
- the proper allocation of costs to non-residential users has not been considered in the apportionment
- some LWAs understate overall demand because they exclude the use of water for public purposes.

*The Tribunal welcomes comments on how the developer charges guidelines pertaining to non-residential developments can be enhanced to better take into account available demand and cost allocation information.*



## 4 TECHNICAL ASPECTS OF THE DEUS GUIDELINES

This chapter discusses some of the elements that comprise the methodology for calculating developer charges as outlined in the DEUS guidelines. The Tribunal is interested in stakeholder views on these more specific aspects of the guidelines, in particular whether they are consistent with the objectives of developer charges, or whether they need refinement.

### 4.1 Which assets should be included in developer charges?

As discussed in chapter 2, the DEUS guidelines specify which assets must be included in, and excluded from, the developer charge calculations. These differ somewhat from the Tribunal's approach for the metropolitan water authorities. Possible issues with the identification and inclusion of assets in the developer charge calculations of LWAs are discussed below.

#### 4.1.1 Pre-1970 assets

The DEUS guidelines allow the inclusion of pre-1970 assets if they are water supply headworks system assets such as dams, weirs, water treatment works, headworks pumping stations and associated pipelines or tunnels. Developers argue that in some cases, assets dating back to the 1930s are being recovered through current developer charges. These assets are valued at MEERA rates, in many cases higher than the original cost.

The Tribunal's methodology for metropolitan water agencies requires that all pre-1970 assets must be excluded from developer charges because the cost of these assets is assumed by the Tribunal to have already been recovered. The DEUS guidelines give the LWAs the discretion to decide whether the costs of pre-1970s water supply headworks (as identified above) have been fully recovered.

One of the objectives of developer charges is to recover the cost of providing water related infrastructure to new developments. To the extent that pre-1970s assets have capacity remaining to service new developments it may be reasonable to include a portion of the cost of such assets in the developer charge.

On the other hand, this may be contrary to the intention that investment in water and sewerage infrastructure should be paid for by those who use it. It is unlikely that assets built so long ago were dependent on new entrant contributions in the 21<sup>st</sup> century to pass an economic assessment.

*The Tribunal welcomes comments on whether any pre-1970 assets should be included in developer charges calculations. In particular, where it is suggested that there is still capacity available in these assets to serve new development, how should this capacity be assessed and the cost incorporated in developer charges? Is MEERA appropriate for valuing pre-1970s assets?*

### 4.1.2 Future Assets

The DEUS guidelines recommend that “assets planned for commissioning within about the next 5 years should be included (in developer charges)”. The DEUS guidelines also state, “Future assets beyond 5 years may be included if there is a clear nexus to the development”<sup>15</sup>.

Some LWAs have included in current developer charges assets planned for up to 20 years into the future. This may lead to a distortion in the price signalling role served by developer charges.

Development industry stakeholders are concerned that inclusion of assets beyond the five year period may increase the complexity of DSPs and result in higher costs, delays and increased financial risks for new developments.

*The Tribunal welcomes comments on whether five years is an appropriate planning horizon for future assets. What are the issues associated with forecasting investment in assets into the future? Is it appropriate to include assets beyond five years in developer charges?*

### 4.1.3 Definition of system assets

The DEUS guidelines specify that developer charges should include water and sewerage headworks and system assets and that reticulation mains should not be included because these are installed and paid for by developers. The DEUS guidelines specify that “reticulation” means “local pipe work providing services to individual properties”.

Development industry stakeholders have indicated that some LWAs have included costs of reticulation mains in their developer charges. This may mean that LWAs are recovering these costs twice and earning excess revenue.

*The Tribunal welcomes comments on issues associated with the way system assets are defined in the DEUS guidelines. How could system assets and reticulation mains be better defined to ensure that costs are recovered appropriately?*

### 4.1.4 Assessing the capacity of assets

Developer charges should recover the costs of asset capacity taken up by a development over the planning period. The DEUS guidelines allow LWAs to recover the full cost of assets over the planning period, generally 30 years.

The development industry has expressed concern that LWAs are not using consistent design standards to estimate capacity of water and sewerage systems. As a result, they argue that asset capacities can vary significantly for similar major works across LWAs and across different DSPs within the same LWA. Similarly, developers are concerned that water supply authorities use a variety of terms and figures without adequate explanation. For example, capacity terms such as 'nominal', 'average', 'peak' and 'non-peak' are used inconsistently. This inconsistency is considered by developers to be an impediment to the transparency of charges and the industry has requested the guidelines be more prescriptive about how LWAs are to assess asset capacity.

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<sup>15</sup> DEUS Guidelines, p 17.

*The Tribunal welcomes comments on the extent to which LWAs are using different design standards for system capacity and the reasons for this. The Tribunal also seeks comments on whether it is desirable and practical to develop a consistent set of design standards*

The development industry is also concerned that some LWAs are not including vacant lots or unoccupied dwellings in the determination of capacity in development areas. That is, LWAs assume that these lots place no demand on the system until they are occupied. This ignores the fact that developer charge income is received by the water authority at subdivision or construction certificate stage in advance for a number of lots or multi units, some of which may still be vacant lots or unoccupied dwellings. The consequence of not including vacant lots and unoccupied dwellings is to understate revenue received and overstate the future interest payable on the assets.

*The Tribunal welcomes comments on the way local water authorities are treating vacant lots and unoccupied dwellings in their calculation of capacity in water and sewerage systems. How can this issue be clarified in the guidelines?*

A related issue is that LWAs need to determine the level of unused capacity available in existing systems that can be used to service new developments. This requires a robust method of estimating the capacity available in water and sewerage systems, particularly if LWAs are attempting to calculate developer charges based on incremental capacity uptake. Stakeholders are concerned that the LWAs do not provide information on the spare capacity available in existing assets or on the way it is calculated.

Another issue relating to spare capacity of assets is where capacity is freed up due to changes in demand patterns, revised forecasts of equivalent tenements or changes in take up rates. This may result in spare capacity remaining at the end of the developer charges planning period.

The Tribunal is concerned that LWAs may be calculating developer charges to recover the full asset value (including remaining capacity) over the planning period when that part of the asset should have been excluded until a future planning period. This would result in developers paying higher charges than they should and water agencies potentially recovering costs twice. The price signalling mechanism of developer charges would also be distorted.

*The Tribunal welcomes comments on the treatment of spare system capacity available for development and excess unused capacity beyond the 30 year planning period.*

## **4.2 Valuation of Assets**

The DEUS guidelines specify that assets must be valued using 'Modern Engineering Equivalent Replacement Asset' (MEERA) values. MEERA is defined as the value of the asset (or assets) calculated on the basis that the asset is constructed at the time of valuation in accordance with modern engineering practice and the most economically viable technology, which provides similar utility functions to the existing asset in service.

There is concern in the development industry that some LWAs are including substantial allowances for contingency in their asset valuations. This contingency allowance is in addition to the rate of return allowed in the DEUS guidelines.

The development industry also argues that some LWAs have not provided adequate information about the valuation base of assets in DSPs. For example, major costs for a number of items have been included in one lump sum so that individual values are not clear.

*The Tribunal welcomes comments on issues associated with the valuation of assets for inclusion in developer charges. Are local water authorities including unreasonable contingency allowances in their developer charges calculations? What, if any, is a reasonable amount or should the risk associated with contingencies be captured in the rate of return?) Are amendments to the DEUS guidelines needed to better specify the method for valuing assets?*

### 4.3 Agglomeration of DSPs

The DEUS guidelines provide that if the capital charges of a number of DSPs are within 30 per cent of each other, they should be combined into a single DSP. This is to minimise the number of DSPs for the sake of administrative simplicity.

Stakeholders are concerned that this agglomeration of DSPs:

- Removes the nexus between development areas and the assets that serve them.
- Reduces the locational price signal to develop where it is most cost-effective.
- Results in low-cost areas subsidising more expensive areas.

Section 3.1 of the DEUS guidelines requires LWAs to demonstrate a nexus between assets and the areas they serve for the purpose of calculating developer charges. This is to ensure that new developments are paying only for the assets they use. The agglomeration process recommended by the DEUS guidelines may remove this linkage because the assets included in the charge are no longer directly linked to the development.

One of the key objectives of developer charges is to provide pricing signals to encourage rational urban development. Section 1.1 Paragraph 4 of the DEUS guidelines states that “it is important that charges should indicate relative costs of providing infrastructure for urban developments...to ensure that charges do not distort the form and sequence of development”.

Developers argue that the agglomeration process effectively eliminates these signals by combining charges that are significantly different into a single capital charge.

On the other hand, some agglomeration may be necessary to reduce the number of DSPs for administrative simplicity.

*The Tribunal is interested in the extent to which agglomeration takes place and seeks comments on whether the agglomeration rule outlined in the DEUS guidelines is reasonable. Is there a better way of minimising the number of DSPs? The Tribunal is also interested in the issue of how much greater the administrative burden would be on LWAs if the agglomeration rule, in particular, the 30 per cent factor, were to be altered.*

#### 4.4 Calculation of the capital charge where lot take up is non-uniform

The DEUS guidelines recommend an NPV approach (spreadsheet approach) rather than the ROI approach where there is non-uniform lot take-up. The net present value approach takes into account this factor through discounting, which effectively ‘smooths’ out lumpy investment and lot uptake. However, stakeholders have indicated that while non-uniform lot take-up is usually the case, many LWAs are still using the ROI method regardless. This can result in more or less revenue than is required to recover costs meaning the cost of new development is either over or under-recovered, and pricing signals to developers are distorted.

*The Tribunal welcomes comments on whether the return on investment approach is appropriate for calculating the capital charge where lot take up is non-uniform. What are the impediments, if any, to LWAs using a net present value approach in these circumstances? Should the guidelines be modified to require use of the net present value approach where lot take up is non-uniform? Alternatively, should the guidelines be modified to require use of the net present value approach in all circumstances, in line with the IPART methodology?*

#### 4.5 Calculation of the reduction amount

One of the objectives of developer charges is to provide a source of funding for infrastructure to serve new development. Developer charges allow water authorities to recover costs of serving new development that are not recovered through periodic charges.

In this respect, the DEUS guidelines depart significantly from the Tribunal’s developer charges methodology in their calculation methods for the reduction amount.

The guideline’s preferred method for calculation of the reduction amount is the NPV of annual charges method. In contrast, for the metropolitan water agencies, periodic charges are set by the Tribunal using a building block approach. This allows water agencies to recover efficient operating costs of water and sewerage provision, as well as a return on and of capital, over a particular price path. The return on and of capital is calculated using a regulatory asset base (RAB). Capital expenditure for the price path (on both existing and new assets) is added to the RAB at the beginning of the price path. Developer charges revenue expected over the price path is removed from the RAB. This ensures that water agencies do not recover capital funded by developers.

Developer charges are then calculated using the Tribunal’s methodology to reflect the capital cost associated with serving DSP areas less any operating surplus from periodic charge revenue.<sup>16</sup> This avoids agencies recovering this revenue twice (through periodic and developer charges).

LWAs are not subject to periodic price regulation in the same way that the metropolitan water agencies are. DEUS’s Best Practice Management Guidelines spell out pricing principles for water supply tariffs. LWAs must comply with these principles to be eligible to pay a dividend to their stakeholder (the Council). However, there is considerable flexibility in the level and structure of periodic water and sewer prices.

<sup>16</sup> A positive operating surplus results where revenue from periodic charges is greater than the operating costs of the development area.

In addition, LWAs are likely to look at all capital and operating costs and revenues in terms of total annual cash-flows. The revenue and costs attributable to new developments are not separated out from the total cost of operations.

*The Tribunal welcomes comments on whether the calculation of the reduction amount under the DEUS Guidelines should be more closely aligned with the Tribunal's methodology with a view to achieving greater transparency. What are the practical considerations of LWAs adopting such an approach?*

### 4.6 Equivalent tenements

An equivalent tenement is a measure of the demand a development will place on the infrastructure in terms of the water consumption and sewage discharge for an average residential dwelling.

This measure allows developments of different types and with different water consumptions to be standardised to a multiple of single dwellings. In this way, each development can be charged for equal units of capacity used in the water system, regardless of the type of development.

The development industry is concerned that the DEUS guidelines do not provide sufficient or consistent guidance about how to determine the number of ETs to be served by the capital works in a DSP. It appears that the DEUS guidelines specify different methods of calculating ETs for the capital charge and for the reduction amount.

The DEUS guidelines differ from the Tribunal's methodology for metropolitan water agencies insofar as the guidelines do not specify how LWAs should determine an ET in terms of water demand but rather consider it in a monetary context.

In its metropolitan developer charges determination, the Tribunal specifies the demand per ET for each of the water agencies. This was based on typical water demand per single dwelling house. The Tribunal's determination also requires the water agencies to use Department of Planning or ABS data to forecast growth in housing.

Attachment 5 of the DEUS guidelines provides a method for calculation of ETs to determine the reduction amount. It defines ET as the equivalent number of tenements in terms of revenue from annual rates and charges on the basis that a single house represents one ET. Developers argue that ET should be calculated based on volumetric water demand, rather than a monetary measure. In particular, they note that Attachment 5 of the DEUS guidelines stipulates that ET should be discounted for pensioner flats and houses, and claim that this is not appropriate because ET is not a factor of income.

The development industry has argued that in some LWAs failure to use reliable growth projections to forecast equivalent tenements (ETs) has resulted in significant errors. A related criticism relates to determining non-residential demand in terms of ETs. For example, developers claim that Bega Valley Council calculated non-residential ETs at 17 per cent of the total, whereas the DEUS Performance Comparisons for 2003-04 reported that 48 per cent of the potable water in that area was delivered to non-residential users. It is unclear if this discrepancy is solely due to a change in the land usage profile between existing and new development.

The correct ET assessment is essential to determine when capacity is reached or how any of the smaller elements of the system should be apportioned. The incorrect assessment may result in substantial over- or under-recovery of revenue and incorrect apportionment of demand between residential and non-residential development.

The development industry also takes issue with the recommendation in the guidelines that vacant lots be charged at 50 per cent of an ET for the purpose of calculating the reduction amount.

*The Tribunal welcomes comments on whether the DEUS guidelines should be more explicit about the determination of equivalent tenements. What is the most appropriate demographic data to use for forecasting new development? How should an equivalent tenement be defined? Is it relevant to discount equivalent tenements based on monetary factors or for vacant lots?*



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## APPENDIX 1 GLOSSARY

COAG	Council of Australian Governments
DC	Developer Charge
DEUS	Department of Energy, Utilities and Sustainability
DSP	Development Servicing Plan
ET	Equivalent Tenement
IPART	Independent Pricing and Regulatory Tribunal (The Tribunal)
LWA	Local Water Authority
MEERA	Modern Engineering Equivalent Replacement Asset
NPV	Net Present Value
PV	Present Value
RAB	Regulatory Asset Base
ROI	Return on Investment

DEUS Guidelines      *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater*, published by the Department of Land and Water Conservation in 2002 and now overseen by the Department of Energy, Utilities and Sustainability.

## APPENDIX 2 TERMS OF REFERENCE

### TERMS OF REFERENCE

The *Water Supply, Sewerage and Stormwater Developer Charges Guidelines* were issued pursuant to section 306(3) of the *Water Management Act 2000* in December 2002 for calculating cost-reflective developer charges for water supply and sewerage infrastructure in non-metropolitan New South Wales.

The Guidelines provide a methodology for calculating the maximum developer charge. Each local water utility has discretion to levy lower charges than those calculated providing it discloses the resulting cross subsidy.

The Guidelines include a number of simplifications to the Independent Pricing and Regulatory Tribunal's Determination 9, 2000 on Developer Charges for the major metropolitan utilities, in order to make them suitable for use by 107 local water utilities in country New South Wales.

1. The Independent Pricing and Regulatory Tribunal (IPART) is requested, under section 9 of the *Independent Pricing and Regulatory Tribunal Act 1992*, to review the *Water Supply, Sewerage and Stormwater Developer Charges Guidelines* and provide recommendations for any improvements.
2. IPART is to provide a final report to the Minister for Water Utilities by 30 September 2007.

## APPENDIX 3 THE IPART DEVELOPER CHARGES METHODOLOGY

The basic principles underlying the Tribunal’s developer charges methodology are that developer charges should:

- involve full recovery of relevant costs
- reflect variations in the costs of servicing different development areas
- result in new development areas meeting the costs of the services provided through developer charges and/or annual charges
- cover only infrastructure expenditures on water, sewerage and drainage assets that can be clearly linked to the development.

This methodology applies to Sydney Water, Hunter Water, Gosford Council and Wyong Council which are covered by IPART determinations.

### The Tribunal’s Developer Charges Formula

Box A3.1 shows the Tribunal’s existing methodology for calculating the developer charges. The methodology calculates the developer charge per lot as:

- the PV of the existing and future assets used to service the development area
- less the *operating profit (or loss)* - PV of the future net operating profits (or losses) expected from providing the services to the development area - also called the *reduction amount*
- divided by the PV of the number of equivalent tenements in the development area.

#### Box A3.1 The Tribunal’s developer charges formula

The developer charge (DC) is calculated as:

$$DC = \frac{PVr(K)}{PVr(ET)} - \frac{NPVr(Ri - Ci)}{PVr(ET)} \text{ for } i = \text{years } 1, \dots, n; n < 30$$

Where:

PV = Present value

NPV = Net present value

K = a capital charge for the net present value of expenditure on existing and future assets serving the area

Ri = revenue expected to be received by servicing customers in the area in each year (i)

Ci = operating, maintenance and administration costs expected to be spent in servicing customers in the area in each year (i)

ET = the number of equivalent tenements in the DSP area or to be developed in the DSP area

r = the cost of capital or the discount rate for deriving the net present value of future revenues, costs and equivalent tenements

n = the forecast horizon for the assessment of future revenues and costs

### The capital charge

The first component in the developer charge calculation is the *capital charge*. The capital charge is the present value (PV) of the efficient cost of assets used to service the development area. The capital charge can include:

- Headworks including dams, water and sewage treatment plants and ocean outfalls.
- Major works such as pumping stations, large water and sewer mains and small reservoirs.

For each defined Development Servicing Plan (DSP) area, agencies must calculate the cost of existing and future assets that will service future development. The Tribunal's existing determination describes some important aspects of calculating the capital charge including:

- Existing assets are valued by Modern Engineering Equivalent Replacement Asset (MEERA) and planned assets not yet built are valued by estimating efficient costs of construction.
- Where an asset services both existing and growth development, only that portion of the asset remaining to be used by growth development is included in the calculation.
- Pre-1970 assets are excluded from calculations as their cost was deemed to be fully recovered by 2000, and any remaining capacity at 2000 was not planned for future growth when the asset was built pre 1970.
- Existing and future assets are then discounted using the Net Present Value (NPV) methodology to get a single capital value in dollars of the day.
- Assets constructed pre and post 1996 are required to use different discount rates in the NPV calculation. At the first developer charges determination in 1996 the Tribunal decided that assets constructed prior to 1996 would attract a rate of return of 3 per cent for Sydney and Hunter Water and 0 per cent for Gosford and Wyong Councils. Post 1996 assets are to earn a rate of return of 7 per cent.

### The operating profit or loss

The second component in the developer charge calculation is the *operating profit or loss*. This is the net present value of the difference between expected operating revenue and expected operating costs associated with the development area. Its inclusion takes into account income received from periodic charges and so avoids 'double dipping' (where the same costs are recovered through both periodic and developer charges).

The current developer charges determination specifies the water consumption per residential house that each agency must use when calculating its operating revenues and costs. This was based on average household consumption of single dwelling properties at the time of the last determination.

## Equivalent tenements

To calculate the developer charge per lot, both the capital charge and the reduction amount must be divided by the present value of the number of equivalent tenements (ETs) expected for the development area. The current developer charges determination defines an equivalent tenement as

...a measure of the demand a development will place on the infrastructure in terms of the water consumption and [sewage] discharge for an average residential dwelling.

This measure allows developments of different types and with different water consumptions to be standardised to a multiple of a single dwelling. In this way, each development can be charged for equal units of capacity used in the water system, regardless of the type of development.

Future ETs must be discounted along with monetary values so that the agency does not under recover the cost of growth assets. The reason for discounting ETs is that they represent a provision of utility in the form of new development. Like money, there is a time preference for the provision of ETs and hence they must be discounted when comparing a stream of development over time.

## Development servicing plans

Developer charges are calculated for particular development areas based on water agencies' Development Servicing Plans (DSPs). The developer charges determination specifies the format of DSPs and the information they must contain. This includes:

- land use planning information
- the extent of the DSP area
- the services required over the development period
- estimates of future capital and operating costs
- standards of service to be provided to customers and design parameters of assets
- estimates of lot and dwelling production including demographic assumptions
- timing of works and expenditures related to anticipated development and demographic assumptions
- the calculated developer charge and the basis on which it is calculated, including making available the models used to calculate the charges
- a reference to other relevant DSPs.

Before the water agencies can implement developer charges, DSPs must be publicly exhibited and then submitted to the Tribunal. This is to ensure transparency and provide certainty to developers when making investment decisions. The determination requires agencies to review the DSPs every five years, or as required by the Tribunal following a review of periodic charges.

