2002 Price Controls Review

Final Proposals for PC2

November 2002

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Foreword

During 2002, the Regulation and Supervision Bureau ("the Bureau") has undertaken a review of the price controls which apply to ADWEC, TRANSCO, ADDC and AADC. These price controls determine the Maximum Allowed Revenue (MAR) that each of the companies can recover in respect of their licensed activities in any year.

Before publishing the Draft Proposals in September 2002, the Bureau published two Consultation Papers on the Review (in February 2002 and May 2002 respectively) and a Discussion Paper on the subject of the Performance Incentive Scheme (May 2002). Detailed and helpful responses were received from the companies which have been used by the Bureau to refine and, where necessary, amend its proposed approach.

This document sets out the Bureau's Final Proposals for the revised price controls (the "second price controls" or "PC2"), which are due to take effect on 1 January 2003 and to last for three years. A separate document which contains details of the proposed modifications to the charge restrictions schedule of each company's licence is also being issued to each company.

Companies are requested to state their acceptance or otherwise to the Final Proposals by **17 December 2002** at the following address:

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If companies accept these Final Proposals, they will come into effect on 1 January 2003.

Nick Carter
Director General
Regulation and Supervision Bureau

1 Summary of Final Proposals

1.1 Introduction

During 2002, the Regulation and Supervision Bureau ("the Bureau") has undertaken a review of the price controls which presently apply to ADWEC, TRANSCO, ADDC and AADC (the "2002 Price Controls Review"). These price controls determine the Maximum Allowed Revenue (MAR) that each of the companies can recover in respect of their licensed activities in any year.

This paper sets out the Bureau's Final Proposals on the revised or second price controls (PC2). If accepted by the companies, PC2 will come into effect on 1 January 2003, and last for three years.

1.2 Form of Controls (Section 3)

1.2.1 Retained Features of Existing Controls

Broadly speaking, the form of controls will remain as at present. That is to say:

- Price controls will continue to be of the form CPI – X and in the form of a cap on Maximum Allowed Revenues (MARs).
- The scope of the controls will continue to be all revenue recovered in respect of licensed activities. (For ADWEC, there will continue to be a slightly different treatment of certain income streams, such as liquidated damages, as explained in the paper).
- MARs in respect of "own costs" will continue to be determined by "revenue drivers" set to reflect the cost structure of the companies, and to provide desirable incentives.
- The existing "pass-through" items in the controls of ADWEC, ADDC and AADC will be retained.
- There will continue to be separate controls for each of the electricity and water businesses of TRANSCO, ADDC and AADC (and a single control for ADWEC).
- For ADDC and AADC, these controls will continue to encompass both the distribution and supply activities of the relevant business.

1.2.2 New Features of Controls

The revised price controls will incorporate some new features compared to the existing controls:

- A new term will be introduced into TRANSCO's price controls to allow the pass-through of the costs of ancillary services subject to the existing economic purchasing obligation.

- TRANSCO's "unit transmitted" revenue drivers for electricity and water have been redefined to refer only to units transmitted through exit meters compliant with the Metering and Data Exchange Code (MDEC).
- The definitions of all revenue drivers have been reviewed and where necessary amended to remove any ambiguity or inconsistency in the existing definitions.
- The relative weights given to the different revenue drivers have been revised.
- CPI will be defined solely in terms of UAE inflation (at present, some of the controls use both UAE CPI and US CPI).
- For ADDC and AADC, the price controls will be extended in scope to also include the distribution and supply businesses assumed to have been inherited from RASCO with effect from 1 January 2001.
- A Performance Incentive Scheme (PIS), represented by a new term "Q" in the price control formulae, is being introduced to additionally link MARs to certain aspects of each company's performance.

1.2.3 Structure of Price Controls

The structure of each company's revised price controls is summarized below:

ADWEC

MAR = PWPA Costs + Fuel Costs + A + Q – K

TRANSCO (separate water and electricity price controls)

MAR = a + (b × Peak Demand) + (c × Metered Units Transmitted) + A + Q - K

ADDC & AADC (separate water and electricity price controls)

MAR = Electricity or Water Purchase Costs + Transmission Charges + DSR + Q - K

DSR = a + (b × Number of Customers) + (c × Metered Units Distributed)

Where:

'A' for ADWEC means its maximum allowed procurement cost;

'A' for TRANSCO means its allowed ancillary services costs;

'a' is the notified value for the fixed amount (co-efficient of revenue driver 1);

‘b’ is the notified value for the co-efficient of revenue driver 2;

‘c’ is the notified value for the co-efficient of revenue driver 3;

‘DSR’ is the allowed distribution and supply revenue for ADDC and AADC;

‘K’ is the correction factor adjusting any over or under-recovery in the preceding year; and

‘Q’ is the revenue adjustment for performance under the PIS in the previous year.

1.3 Revenue Driver Assumptions (Section 4)

The revenue drivers proposed for the PC2 are summarized in **Table 1.1**.

Table 1.1: Revenue Drivers for PC2 – Final Proposals

	Revenue Driver 1	Revenue Driver 2	Revenue Driver 3
ADWEC	Fixed amount		
TRANSCO Electricity	Fixed amount	Peak electricity demand	Metered electricity units transmitted
TRANSCO Water	Fixed amount	Peak water demand	Metered water units transmitted
ADDC Electricity	Fixed amount	Electricity customer accounts	Metered electricity units distributed
ADDC Water	Fixed amount	Water customer accounts	Metered water units distributed
AADC Electricity	Fixed amount	Electricity customer accounts	Metered electricity units distributed
AADC Water	Fixed amount	Water customer accounts	Metered water units distributed

The definitions of all revenue drivers have been reviewed and where necessary amended to remove any ambiguity or inconsistency in the existing definitions.

TRANSCO’s “unit transmitted” revenue drivers for electricity and water have been redefined to refer only to units transmitted through exit meters compliant with the Metering and Data Exchange Code (MDEC).

The projections adopted for each revenue driver are explained in Section 4 of the paper. These have been set to reflect a reasonable forecast of the revenue drivers and to provide incentives to the network companies to improve metering at exit points from their respective systems. (These projections in some cases have been revised from the Draft Proposals in view of the companies’ responses and additional information.)

1.4 Operating Expenditure Projections (Section 5)

The Bureau has projected operating expenditure (opex) for the period 2003–2005 on the basis that opex can remain constant in real terms at its level in 2001. This assumes that the effect on opex of demand growth over the period can be offset by efficiency improvements.

In the absence of audited accounts for 2001, the Bureau has estimated 2001 operating expenditure as the average of 2001 operating expenditure (unaudited) and 2000 operating expenditure (unaudited in some cases and draft audited in other cases).

The resulting projections of operating expenditure for 2003-2005 are summarized in **Table 1.2**.

Table 1.2: Operating Expenditure Allowances in PC2 – Final Proposals

AED m, 2003 prices	2003	2004	2005
ADWEC (1)	9.798	9.798	9.798
TRANSCO Electricity	96.809	96.809	96.809
TRANSCO Water	93.255	93.255	93.255
ADDC Electricity	196.367	196.367	196.367
ADDC Water	122.575	122.575	122.575
AADC Electricity	100.117	100.117	100.117
AADC Water	93.097	93.097	93.097

Note (1): Includes capital expenditure (ADWEC only)

ADWEC's allowed opex excludes any costs borne by ADWEC over 2003–2005 relating to the use of professional consultancy services by ADWEA for the procurement of Independent Water and Power Producers (IWPPs) over that period. An appropriate retrospective adjustment will be made for any such costs at the 2005 Price Control Review.

ADDC's and AADC's allowed opex exclude any costs that may arise from a redefinition of permitted distribution and supply activities. An appropriate retrospective adjustment for any such costs will be made at the 2005 Price Controls Review.

1.5 Capital Expenditure and Asset Valuation for Network Companies (Section 6)

1.5.1 Past (1999 – 2002) Capital Expenditure

The first price controls ("PC1") made no allowance for capital expenditure (capex) over 1999–2002. The Bureau agreed to remunerate companies for past efficient capex at the present review, via an appropriate adjustment to the opening (1 January 2003) Regulatory Asset Value (RAV). However, in the present absence of audited data on past capex, the Bureau has made a *provisional* capex allowance at the present review, as summarized in **Table 1.3**. For AADC, these are based on reported levels of capex in 1999, which appear to the Bureau to be the most reliable figures. For

TRANSCO and ADDC, they have been set at 75 per cent of the estimated capex submitted by the companies.

Table 1.3: Provisional Capital Expenditure Assumptions for 1999–2002 – Final Proposals				
AED m, 1999 prices	**1999**	**2000**	**2001**	**2002**
TRANSCO Electricity	344.172	533.792	795.288	1,222.498
TRANSCO Water	118.735	123.456	92.110	289.037
ADDC Electricity	196.511	300.858	398.342	389.889
ADDC Water	69.105	44.923	130.471	380.707
AADC Electricity	188.675	188.675	188.675	188.675
AADC Water	66.350	66.350	66.350	66.350

Once audited data on actual 1999–2002 capex is received by the Bureau, it will be reviewed against the efficiency criteria established by the Bureau. Any difference between efficient past capex and the provisional assumptions summarized in **Table 1.3** will be reflected in an appropriate adjustment to the RAV at the 2005 Price Control Review.

1.5.2 Future (2003 – 2005) Capital Expenditure

In contrast to the initial price control review, the Bureau proposes to include an allowance for future capex at the present review. However, companies' capex projections for 2003 – 2005 are subject to some uncertainty. The Bureau has therefore also adopted *provisional* projections of companies' future capex, summarized in **Table 1.4**:

Table 1.4: Provisional Capital Expenditure Assumptions for 2003–2005 – Final Proposals			
AED m 2003 prices	**2003**	**2004**	**2005**
TRANSCO Electricity	1,267.791	730.378	346.036
TRANSCO Water	1,261.103	1,280.087	243.243
ADDC Electricity	461.876	484.969	509.218
ADDC Water	151.420	158.991	166.941
AADC Electricity	205.796	205.796	205.796
AADC Water	72.370	72.370	72.370

The provisional allowances for 2003–2005 have been set in a similar manner as for 1999–2002. Actual capex over 2003-2005 will be reviewed at the 2005 Price Controls Review against the Bureau's efficiency criteria, and appropriate adjustments made at that time.

1.5.3 Projected Regulatory Asset Values (RAVs)

RAVs for the next price control period have been projected as follows:

- The Opening RAVs for each company at 1 January 2003 have been calculated by rolling forward the Initial (1 January 1999) RAVs used in setting the PC1 for provisional 1999–2002 capex.
- To this figure has been added the net present value (at 1 January 2003) of the financing costs foregone over 1999-2002 associated with the provisional 1999–2002 capex.
- The resulting Opening RAVs at 1 January 2003 have been rolled forward for 2003-2005 provisional capex to derive RAVs for each year of the control period.

The resultant opening RAVs (at 1 January each year) are summarized in **Table 1.5** (the opening RAV for 2006 also acts as the closing RAV for 2005):

Table 1.5: Opening Projected Regulatory Asset Values (RAVs) - Final Proposals

AED m, 2003 prices	2003	2004	2005	2006
TRANSCO Electricity	6,150.55	7,149.01	7,585.72	7,626.55
TRANSCO Water	2,480.35	3,555.19	4,606.34	4,612.53
ADDC Electricity	4,180.40	4,440.40	4,707.32	4,981.52
ADDC Water	1,408.11	1,470.82	1,535.81	1,603.18
AADC Electricity	2,237.50	2,324.91	2,405.47	2,479.17
AADC Water	455.90	512.24	566.16	617.67

1.6 Cost of Capital and Profit Margin (Section 7)

For the network companies (TRANSCO, ADDC and AADC), the Bureau has assumed a real, post-tax weighted average cost of capital (WACC) of **6.0** per cent; the same as used in setting the PC1.

For ADWEC, which has few capital assets, the Bureau has allowed a margin on projected total BST turnover of **0.025** per cent. This has been calculated by applying the cost of capital to an estimate of the hypothetical capital that would be required to back the risks faced by ADWEC.

1.7 Price Control Calculations (Section 8)

Consistent with the approach taken to setting the PC1, the Bureau has adopted a net present value (NPV) framework to establish the level and profile of price-controlled revenue for each business for the period 2003–2005. The NPV of required revenue over the control period is calculated as (1) the sum of the NPVs of the opening (1 January 2003) RAV and of opex and capex over the period, minus (2) the NPV of the closing (31 December 2005) RAV. For ADWEC, the NPV of required revenue is calculated as the sum of the NPVs of expenditures and allowed profits on turnover over the period.

Different combination of the co-efficients on the revenue drivers – the "notified values" a, b, c and X - can yield an amount of revenue equal to the revenue requirement. For these proposals the notified values have been calculated by adopting the following constraints:

- For TRANSCO, ADDC and AADC: **65** per cent of revenue over the price control period is recovered via the fixed revenue driver; **25** per cent of revenue is recovered from the first variable revenue driver (as listed in **Table 1.1** above); and remaining **10** per cent from the second variable revenue driver (i.e. metered units transmitted or distributed).
- For ADWEC: **100** per cent of revenue is recovered as a fixed amount.
- X = 0 for all businesses.

The resulting notified values are given in **Table 1.6**. The annual MARs projected for each company over the price control period in respect of "own costs" are summarized in **Table 1.7**:

Table 1.6: Notified Values for PC2 – Final Proposals

	Notified Values			
	X	**A or a**	**b**	**c**
ADWEC Procurement	0.00	10.72 AED m		
TRANSCO Electricity	0.00	522.77 AED m	44.28 AED/kW	1.05 fils/kWh
TRANSCO Water	0.00	347.75 AED m	305.57 AED/TIG	0.44 AED/TIG
ADDC Electricity	0.00	442.01 AED m	761.40 AED/customer account	0.45 fils/kWh
ADDC Water	0.00	197.56 AED m	382.74 AED/customer account	0.69 AED/TIG
AADC Electricity	0.00	235.68 AED m	1,028.83 AED/customer account	0.57 fils/kWh
AADC Water	0.00	92.74 AED m	586.50 AED/customer account	1.75 AED/TIG

Table 1.7: Projected MARs for 2003-2005

AED m, 2003 prices	**2003**	**2004**	**2005**
ADWEC Procurement	10.72	10.72	10.72
TRANSCO Electricity	725.77	800.96	895.94
TRANSCO Water	513.01	535.59	559.07
ADDC Electricity	659.41	681.49	701.59
ADDC Water	281.61	302.95	330.08
AADC Electricity	355.75	362.75	370.06
AADC Water	135.90	142.18	150.83

Note: Excludes pass-through costs.

1.8 Performance Incentive Scheme (Section 9)

A PIS is being introduced for each company under the PC2, to provide a stronger incentive for companies to improve their performance than that which exists under the PC1. Under the Final Proposals, there are two "Category A" performance indicators for each business related to timeliness of audited accounts and of audited price control returns (PCRs), for which good (poor) performance will lead to an upward (downward) adjustment to MARs via a new term "Q" in the price control formulae. In order to reduce risk for the companies, this adjustment in any year will be capped at **2** per cent of MAR in respect of "own costs" in that year. The Category A measures are summarized in **Table 1.8**, together with the incentive rates that will be applied to companies' performance on each measure against the "glide-path" target dates (which occur at a later date in 2003 and 2004 than the licence target dates) as set out in Section 9 of this paper. The incentive rates vary between businesses to reflect the relative size of the businesses.

Table 1.8: Incentive Rates for Category A Indicators – Final Proposals

Company / Business	Performance Indicator	Incentive Rate (2003-2005)	
ADWEC	Audited Accounts	18,000	AED per month
	Audited PCR	18,000	AED per month
TRANSCO Electricity	Audited Accounts (Electricity)	1,335,000	AED per month
	Audited PCR (Electricity)	1,335,000	AED per month
TRANSCO Water	Audited Accounts (Water)	893,000	AED per month
	Audited PCR (Water)	893,000	AED per month
ADDC Electricity	Audited Accounts (Electricity)	1,136,000	AED per month
	Audited PCR (Electricity)	1,136,000	AED per month
ADDC Water	Audited Accounts (Water)	505,000	AED per month
	Audited PCR (Water)	505,000	AED per month
AADC Electricity	Audited Accounts (Electricity)	605,000	AED per month
	Audited PCR (Electricity)	605,000	AED per month
AADC Water	Audited Accounts (Water)	237,000	AED per month
	Audited PCR (Water)	237,000	AED per month

Note: E = Electricity; W = Water; p.m. = per month of delay.

Detailed explanations of how the incentive rates will be applied are presented in the paper. In essence, the company receives a reward or penalty calculated according to the incentive rate and to the improvement or deterioration compared to the target performance for the year (the precise calculation varies from year to year).

In addition, the Bureau has proposed a number of "Category B" performance indicators which will be monitored over the next price control period, with a possible financial adjustment made in respect of particularly good or poor performance at the 2005 Price Controls Review.

1.9 Main Differences from Draft Proposals

The main differences between the Draft Proposals and the Final Proposals are summarized **in Table 1.9** below. There have been a number of other consequential or more minor refinements of the proposals, as explained in this paper.

Table 1.9: Summary of Differences from Draft Proposals

Main Feature	Company	Draft Proposals	Final Proposals
Revenue Drivers	ADWEC	Three revenue drivers: ▪ Fixed amount ▪ Electricity units sold under BST ▪ Water units sold under BST	One revenue driver: ▪ Fixed amount
Weights of Revenue Drivers	TRANSCO, ADDC, AADC	"a" term – 50% "b" term – 25% "c" term – 25%	"a" term – 65% "b" term – 25% "c" term – 10%
Revenue Driver Projections – Electricity Metered Units Transmitted	TRANSCO	Metering coverage target for 2005 – Full metering to be MDEC compliant	Metering coverage target for 2005 – 50% of full metering to be MDEC compliant
Revenue Driver Projections - Water Metered Units Distributed	ADDC	Metering coverage target for 2005 – 72%	Metering coverage target for 2005 – 66%
Revenue Driver Projections - Water Customer Accounts	AADC	AADC's previous submission (37,321 accounts by 2005)	AADC's latest submission (63,931 accounts by 2005)
Annual Opex **2003 – 2005**	All companies	Average of 1999 and 2001 operating expenditure	Average of 2000 and 2001 operating expenditure
Provisional annual Capex 1999 –2005	TRANSCO and ADDC	1999 capital expenditure	75% of companies' estimates for the relevant year
Provisional Asset Life Assumption	TRANSCO, ADDC and AADC	25 years	30 years
PIS Revenue Adjustment Timing	All companies	Revenue adjustment in year t+2	Revenue adjustment in year t+1
PIS Energy Lost measure	TRANSCO	Category A	Category B
PIS Customer Minutes Lost measure	ADDC, AADC	Category A	Category B

Due to these changes in the Final Proposals, the results of various calculations in the Final Proposals are significantly different from those of the Draft Proposals. In general, higher allowances for opex and capex have been made in the Final Proposals.

As a result, the allowed revenues for ADWEC and TRANSCO projected in the Final Proposals are about **20%** higher than those projected in the Draft Proposals, in terms of present value over the next control period. Similarly, the overall allowed revenues for ADDC's electricity and water businesses are about **9%** and **16%** higher than those of the Draft Proposals. The overall allowed revenues for AADC electricity and water businesses are slightly higher (**1 to 2%**) than those projected in the Draft Proposals.

In terms of allowed revenue per unit of electricity or water supplied to the final customers, it is estimated that the total allowed revenue for all the network and procurement businesses (excluding production costs) projected by these Final Proposals will result in, on average, approximately **12%** and **16%** higher network costs per unit supplied of electricity and water respectively over the next control period compared to the allowed revenue projected in the Draft Proposals.

Other changes from the Draft Proposals, such as to the projections of certain revenue drivers, and the scope of the PIS, will also have a financial impact, but it is not possible to quantify this impact in advance.

2 Background

2.1 Current Price Controls

Following the passage of Law No.2 of 1998 in March 1998, a new structure for the Abu Dhabi water and electricity sector came into existence with effect from 1 January 1999, whereby the sector was unbundled into segments separately responsible for production, transmission and distribution/supply. The sector is now characterised by its 'single-buyer' model, with ADWEC, TRANSCO, ADDC and AADC as monopoly companies.

To protect customers from their market power and to promote economic efficiency, these monopoly companies are subject to price controls set by the Bureau. The first price controls (PC1) were set to run for three years starting from 1 January 1999 and were extended for a further year in 2001. These price controls, for the most part, are of a "CPI-X" type which define maximum allowed revenue (MAR) that each company can recover in respect of its licensed activities during each year of the control period. There are separate price controls for the water and electricity businesses of the three network companies (TRANSCO, ADDC and AADC).

The formulae to calculate MAR for the network companies have fixed cost terms as well as cost terms involving "revenue drivers" which allow revenue to vary with demand and output. ADWEC does not have any such revenue driver. Transmission charges and costs of water and electricity purchases are treated as "pass-through" for ADDC and AADC. Similarly, costs of water, electricity and fuel purchases are treated as "pass-through" for ADWEC. These pass-through costs are costs over which these companies have no direct control and are regulated elsewhere.

The fixed cost terms and the co-efficients of the revenue drivers were set by the Bureau for 1999 and automatically adjusted for each subsequent year by a Consumer Price Index (CPI) based inflation rate less an "X" factor. The "X" factor was also set by the Bureau for each business.

For more details on the industry structure and the current price controls, refer to the Bureau's Consultation Paper on Draft Proposals for PC2 published in September 2002.

2.2 Progress on 2002 Price Controls Review

The PC1 for ADWEC, TRANSCO, ADDC and AADC are due to be replaced to take effect from 1 January 2003. The Bureau has published the following consultation documents in relation to the 2002 Price Controls Review to date:

- Initial Consultation Paper on the Review of Price Controls for Al Ain and Abu Dhabi Distribution Companies, TRANSCO and ADWEC, January 2001;
- First Consultation Paper on the 2002 Price Controls Review, February 2002;
- Discussion Paper on Performance Incentive Scheme (PIS), May 2002;

- Second Consultation Paper on the 2002 Price Controls Review, May 2002; and
- 2002 Price Controls Review: Draft Proposals for PC2, September 2002.

The Bureau received responses to these documents and data submissions from the price-controlled companies and provided its further views and clarifications to these companies separately. Refer to the Draft Proposals for more details on this matter, which also lists all the companies' responses and submissions on the Review.

2.3 Companies' Responses to Bureau's Draft Proposals

The following responses have been received by the Bureau to its Draft Proposals:

- ADWEC's response dated 15 October 2002;
- TRANSCO's response dated 15 October 2002; and
- ADDC's response dated 15 October 2002.

These responses are discussed in some detail in the relevant sections of this paper. The companies through these responses have welcomed and accepted some aspects of the Draft Proposals and have raised concerns on, or argued against, some other aspects. These responses were subsequently discussed separately with the companies during October and early November 2002. Subsequent to the meetings, the Bureau has received further responses from these companies focusing on remaining concerns:

- ADWEC's letter dated 22 October 2002; and
- TRANSCO's letters dated 28 October and 3 November 2002.

In response to these companies' requests, the Bureau has also let them known of its intentions on how it intends to deal with their remaining concerns in the Final Proposals through:

- Bureau's letter dated 26 October 2002 to ADWEC; and
- Bureau's letter dated 30 October and 5 November 2002 to TRANSCO.

The Bureau also received a response to its Draft Proposal from AADC on 5 November. AADC accepted all the aspects of the Draft Proposal except for the items on which it provided revised figures through its latest Price Control Information Submission to the Bureau.

The Bureau has given due consideration to the companies' responses and modified its Final Proposals on the new price controls where necessary, as set out in this paper.

3 Form of Controls

3.1 Type of Regulation

The existing price controls in the sector are of the form CPI-X. In the Draft Proposals, the Bureau proposed that the price controls for all the companies should remain of the form CPI-X. Companies continue to support the use of CPI-X regulation, which is therefore used as the basis for the Final Proposals set out in this paper.

3.2 Duration of Controls

The Bureau has not received any objection to the proposal of three-year duration of PC2 made in the Draft Proposals. Therefore, the Final Proposals set out in this paper are based on a three-year duration (2003-2005 inclusive).

3.3 Separation of Controls

Presently, there are separate price controls for the water and electricity businesses of the three network companies. There is no such separation of controls for the water and electricity procurement activities of ADWEC, nor for the distribution and supply businesses of the distribution companies (Discos). The Bureau explained in the Draft Proposals its intention to continue with this approach for the PC2. No respondent objected to this proposal. The Final Proposals are therefore based on this approach.

3.4 Scope of Controls

Broadly speaking, each company's existing revenue cap covers all revenue received in respect of licensed activities. Effectively, the revenue caps work as a "single till" – the overall level of revenue required by the company for its licensed activities is determined via the price control review process (based on a forecast of total cost), and any revenue that is recovered from one group of customers is automatically deducted from the revenue which can be recovered from other customers. The Bureau earlier proposed continuation of this existing approach for the new controls.

The Final Proposals are therefore based on the same approach as explained in the Draft Proposals. That is, the PC2 of each company will continue to cover all elements of revenues from its customers (including any income from any fines or penalties paid by customers) in relation to their licensed activities (including subsidy from the government in the case of ADDC and AADC). The only revenues not covered by PC2 are revenues in respect of activities which are other than licensed activities and for which the company has received the consent of the Bureau (as required for such activities according to the licences). For example, the revenues used in order to determine compliance with the price controls will not include ADDC's revenue from the Central Laboratory nor from any management contract in respect of RASCO's generation activities if ADDC receives the formal consent for the Bureau to undertake such activities.

For ADWEC, there is a slightly different treatment, in that any income received from production companies in the form of damages, claims, late payments or events of default will remain excluded from the calculation of its MAR.

For the avoidance of doubt, as mentioned in the Draft Proposals, in the case of TRANSCO and Discos, connection charges revenue should be deducted from their MARs before the calculation of transmission use-of-system (TUoS) charges for TRANSCO and of customer revenue and government subsidy for the Discos.

Further, the scope of the Discos' price controls will include the distribution and supply business activities which they are assumed to have inherited in 2001 from RASCO. As explained in the Draft Proposals, since the agreed purchase price of distribution and supply assets inherited from RASCO is not available at the time of this review, any necessary adjustments will be made to the price controls at the next review.

3.5 Structure of Controls

3.5.1 Overall Structure

The Draft Proposals suggested, in broad terms, a continuation of the existing form of control, whereby each of the companies is subject to a control on the maximum revenue which it is allowed to recover each year. This maximum allowed revenue (MAR) is set in relation to the magnitude of various "revenue drivers" which, broadly-speaking, reflect the cost structure of each company (as well as other considerations). Such an approach reduces companies' exposure to the risks associated with the rapid pace of growth of water and electricity demand in the Emirate of Abu Dhabi. In the Draft Proposals, the Bureau also proposed the inclusion of two new revenue drivers in ADWEC's price control.

Besides specific concerns on some revenue drivers, none of the respondents dissented to this overall approach, which has therefore been retained for the PC2. To address the specific concerns, the Bureau has removed the proposed revenue drivers for ADWEC (as discussed below) and revised its assumptions for revenue driver projections and the weights of the revenue drivers for TRANSCO, ADDC and AADC (as discussed Section 4 of this paper).

In addition, a new term 'Q' (which could be positive or negative) was proposed to be added to the price control formula for each business to incentivise performance under the PIS for the next control period. In these Final Proposals, the Bureau has amended the scope of the PIS compared to the proposal in the Draft Proposals. The PIS and the calculation of term 'Q' are discussed in detail in Section 9 of this paper.

3.5.2 Structure of ADWEC's Price Control

ADWEC's PC1 consists solely of a constant term, subject to the CPI-X formula. In response to concerns expressed by ADWEC earlier in the review, the Bureau proposed that its PC2 should also include a measure of its "activity" or workload to reduce ADWEC's exposure to risks associated with potential increases to its own costs arising from unexpected increases in its workload. In the Draft Proposals, the Bureau proposed the amounts of water and electricity units sold under the BST as the appropriate revenue drivers for ADWEC, so that ADWEC's procurement cost would comprise three terms: a fixed amount, a term related to electricity units sold under the BST, and a term related to water units sold under the BST.

However, ADWEC did not consider the two proposed revenue drivers appropriate to reflect its workload and proposed the continuation of a simple fixed amount for its procurement cost. The Bureau has therefore decided that ADWEC's control for its 'own' costs will continue to consist solely of a fixed term, as at present. This is the basis of the Final Proposals set out in this paper.

In its response to the Draft Proposals, ADWEC also proposed amendments: to the definition of "$PWPA_t$" in its licence to include amounts due under any interconnection agreements and ancillary service agreements; and to add a new term "B_t" to its MAR formula term to allow pass-through of additional costs of training of UAE nationals imposed due to government policies or instructions. These suggestions by ADWEC are discussed in detail in Section 7 of this paper. In essence, the Bureau does not see a need to revise the definition of "$PWPA_t$" (as the concerned amounts are already covered) and does not consider the proposed amendment for the new term "B_t" as appropriate.

The Final Proposals are therefore based on the following structure of new price control for ADWEC:

MAR = PWPA Costs + Fuel Costs + Allowed Procurement Cost (A) + Q – K

PWPA and fuel costs remain pass-through under the price controls, subject to the existing economic purchasing licence obligation.

3.5.3 Structure of TRANSCO's Price Controls

In the Draft Proposals, the Bureau proposed that TRANSCO's revenue drivers should continue to be a fixed amount, an amount related to peak demand and an amount related to units transmitted. In addition, the Bureau proposed inclusion of a new term for pass-through of ancillary services costs (A), subject to TRANSCO's existing licence economic purchase obligation. In contrast to the existing licence definition of units transmitted, the Bureau proposed that the number of units transmitted should be the number of units measured by meters in compliance with the MDEC as having been delivered to Discos.

In its response to the Draft Proposals, TRANSCO expressed strong concerns about the introduction of metered units transmitted as revenue drivers, particularly in relation to the proposed 25% weight of these revenue drivers and to comments made by the Bureau in relation to users' obligations to provide meters. These concerns are discussed in detail in Section 4 of this paper. However, in view of the statutory obligations of both the Bureau and TRANSCO, the Bureau has retained the metered electricity and water units transmitted as the revenue drivers for TRANSCO. However, acknowledging the dependent nature of responsibility towards metering and associated risks for TRANSCO, the Bureau has significantly modified several aspects of its proposals on these revenue drivers to alleviate TRANSCO's concerns. Precisely, the Bureau in these Final Proposals has reduced the weight of these metered units transmitted revenue drivers to 10 per cent in the total revenue of TRANSCO, and has significantly reduced its projections for electricity metered units transmitted, making it more likely that the projections are achieved or exceeded.

TRANSCO also asked for an explanation of how this revenue driver can incentivise TRANSCO to reduce transmission losses. The Bureau has clarified that as with the present controls, use of units exiting (rather than entering) the system provides this incentive.

The Final Proposals are based on the following structure of the separate price controls for the water and electricity transmission businesses of TRANSCO:

$$MAR = a + (b \times \text{Peak Demand}) + (c \times \text{Metered Units Transmitted}) + A + Q - K$$

The term 'A' stands for electricity related ancillary services costs and does not apply to water transmission business of TRANSCO. The Bureau will monitor TRANSCO's licence obligation for economic purchase of electricity ancillary services through an annual statement by TRANSCO to demonstrate compliance with its obligation as part of the audited price control returns (PCRs). This statement should also demonstrate that procurement of ancillary services was necessary for system security and stability and/or resulted in a reduction in overall transmission costs. The introduction of this new term 'A' in TRANSCO's price control does not and should not prevent ADWEC from procuring ancillary services in accordance with its licence. However, TRANSCO and ADWEC must coordinate with each other on the procurement of ancillary services, as required by their licences.

3.5.4 Structure of Discos' Price Controls

There was no objection to the Draft Proposal that revenue drivers for ADDC and AADC should continue to be a fixed amount, an amount related to metered units distributed and an amount related to the number of customers.

The Final Proposals are therefore based on the following structure ("DSR" refers to distribution and supply revenue):

$$MAR = \text{Electricity or Water Purchase Costs} + \text{Transmission Charges} + \text{Allowed DSR} + Q - K$$

$$\text{Distribution and Supply Revenue (DSR)} = a + (b \times \text{Number of Customers}) + (c \times \text{Units Distributed})$$

However, in response to concerns raised by ADDC, the weights of metered electricity and water units distributed have been reduced to **10%** (from 25% in the Draft Proposals) for both ADDC and AADC (similar to the change for TRANSCO's metered units transmitted revenue drivers) and their projections have in some cases been revised. These issues are discussed in detail in Sections 4 and 8 of this paper.

3.5.5 Definition of CPI

Respondents to the Draft Proposals have either accepted or not objected strongly to the use of UAE CPI (as published by the UAE Ministry of Planning) as the sole basis of term "CPI" in the price control formulae. The Final Proposals are therefore based on this approach.

4 Revenue Drivers

4.1 The Draft Proposals

The Draft Proposals explained the Bureau's detailed review of the existing definitions of the "revenue drivers" set out in the companies' licences and used in setting the initial price controls. In the Draft Proposals, the Bureau proposed to modify certain aspects of these definitions in particular:

- To introduce two new revenue drivers for ADWEC, in order to reflect the number of water and electricity units sold via the BST.
- To modify the definition of the "units transmitted" revenue drivers in TRANSCO's price controls, so that only units measured by meters that comply with the Metering and Data Exchange Code (MDEC) are counted.

The Bureau also proposed minor refinements to the definition of other revenue drivers, as explained in Section 4 of the Draft Proposals.

Further, the Bureau proposed that, in each price control formula, the fixed term be given a weighting of 50% of the maximum allowed revenues (MARs), with a 25% weighting being given to each of the two variable revenue drivers.

4.2 Responses to the Draft Proposals

4.2.1 TRANSCO's Response

TRANSCO raised two specific concerns in response to the Draft Proposal for the introduction of metered electricity and water units transmitted as revenue drivers. The first concern of TRANSCO relates to the obligation to provide meters at user connections to its transmission systems.

According to TRANSCO, this obligation rests with the users in accordance with the Metering and Data Exchange Code (MDEC) and not with TRANSCO. TRANSCO presented the Bureau with data which suggests that, while water users have complied with their obligations under the MDEC, electricity users have not made significant progress. TRANSCO further argued that while MDEC does contain provisions for TRANSCO to repair, adjust, replace or renew any defective components in the metering systems of users, it does not mention the provision of new meters. Notwithstanding these provisions, TRANSCO has in good faith commenced the preparation of a scheme to provide MDEC compliant meters at transmission system exit points. Some of the users have themselves provided or promised to provide MDEC compliant meters at their connection sites.

The second concern related to the risk for TRANSCO arising due to the proposed weight given to these revenue drivers (25%) in determining MARs.

4.2.2 ADWEC's Response

ADWEC objected to the inclusion of two new revenue drivers in that part of its price control formula which relates to its own (procurement) cost, saying that it preferred that its own revenue be solely comprised of a fixed term, as in the initial price control.

4.2.3 ADDC's Response

ADDC raised a concern in relation to the measurement of "metered water units distributed", the "c" term in the price control formula for its water business. Although this is also a term in the initial price control formula, ADDC has to date had great difficulty providing accurate data relating to this term. It therefore suggested that the weighting attached to this revenue driver be reduced, and argued that the projections for this revenue driver contained in the Draft Proposals were not achievable.

4.3 Bureau's Views on Responses to Draft Proposals

4.3.1 TRANSCO's Response

The Bureau acknowledges the provisions of the MDEC referred to by TRANSCO which have, to some extent, clarified the obligations in relation to the metering. The Bureau regrets any impression given in the Draft Proposals that the poor performance on metering coverage is the sole responsibility of TRANSCO. The Bureau also appreciates the initiative taken by TRANSCO in commencing the metering project and looks forward to the outcome of this project.

Nonetheless, these provisions of MDEC do not relieve TRANSCO from its obligations to develop and maintain a settlement system (for which accurate metering is essential) under the Law (Article 39) and its licence (Condition 20), and its obligations to keep in effect and force and comply with MDEC under its licence (Condition 20).

The obligation to ensure compliance with MDEC is further supported by Condition 14 of TRANSCO's licence which requires TRANSCO not to offer and enter into any connection and use of system agreement if such an agreement puts TRANSCO in breach of any of its licence conditions. Condition 14 of licence also requires TRANSCO to specify appropriate metering equipment before entering into a connection agreement with users. The importance of accurate metering cannot be over-emphasized as the basis of all financial transactions in the sector involving the transmission system. Further, without complete and accurate metering of transmission system, the extent of losses cannot be ascertained, and economic and efficient water and electricity transmission systems cannot be developed, which is a statutory obligation of both the Bureau and TRANSCO.

In view of these statutory obligations, the Bureau has retained metered units transmitted as revenue drivers for TRANSCO. However, acknowledging the dependent nature of responsibility towards metering and the associated risks for TRANSCO, the Bureau has significantly modified its proposals on these revenue drivers. In these Final Proposals, the Bureau has reduced the weight of the metered units transmitted revenue drivers to **10%** in the allowed revenues of TRANSCO; and significantly reduced its assumptions for electricity metered units transmitted projections, making it more likely that the projections are achieved or exceeded.

4.3.2 ADWEC's Response

The Bureau had proposed the two new revenue drivers for ADWEC believing they would reduce the extent to which ADWEC is exposed to risks associated with uncertainties in its future workload, which ADWEC had raised as a concern earlier in the present review process. However, since ADWEC is opposed to the proposal, the Bureau is content not to pursue it. The Final Proposals are therefore based on a single, fixed term in that part of ADWEC's price control formula relating to its own cost, as was the case for the initial price controls.

4.3.3 ADDC's Response

The Bureau is disappointed that ADDC is unable to state accurately how much water has been distributing to metered customers. ADDC has stated that (in 2001) 56% of water distribution system exit points are metered, but has reported metered water units to be only 9,012 MG, or just 15% of the total water units estimated to have been distributed. Until this apparent inconsistency is convincingly explained, it would not be prudent for the Bureau to reduce its projections of the level of this revenue driver to the reported level. However, in view of the uncertainty surrounding the issue, which represents a risk to the Bureau (as the representative of customers and the government via subsidy) as well as to ADDC, the Bureau agrees to reduce the weight associated to this revenue driver to 10%. At the same time, the revenue driver assumptions have also been reduced in these Final Proposals compared to the Draft Proposals, as discussed in Section 4.4.2 below, consistent with the approach that has been used for projecting TRANSCO's 'metered electricity units transmitted' revenue driver, which is subject to similar uncertainty (a 50 percentage point increase by 2005 is assumed).

4.4 The Final Proposals

The Bureau's proposed definitions of all the revenue drivers for the revised price controls for TRANSCO, ADDC and AADC are reproduced from the Draft Proposals in **Table 4.1** (ADWEC's price control will continue to consist solely of a fixed term, as is in the current price control). The Bureau has also altered the relative weighting given to the revenue drivers in determining MARs (see Section 8 of this paper).

As at present, annual revenue driver data will require to be audited as part of the Price Control Return (PCR) to be submitted by the companies to the Bureau by 31 March each year (licence target date). For the second price control period, companies will have a financial incentive under the PIS to meet this target date (see Section 9 of this paper). The PCR will also be required to present information relevant to the calculation of the "Q" term under the PIS for each business (see Section 9). Further, as part of its PCR, TRANSCO will now be required to provide a statement to demonstrate the economic and efficient procurement of any ancillary services, their necessity for system security and stability, and their effect on total transmission costs.

Table 4.1: Definitions of Revenue Drivers for Revised Price Controls

Company	Revenue Driver	Proposed Definition
TRANSCO	**Peak Electricity Demand**	The maximum average electricity demand in an hour (expressed in kilowatts) as metered or otherwise measured at exit points on leaving the Licensee's electricity transmission system in relevant year t.
	Metered Electricity Units Transmitted	The aggregate quantity of electricity units transmitted (expressed in kilowatt-hours) through the Licensee's electricity transmission system in relevant year t metered (in compliance with the Metering and Data Exchange Code) at exit points on leaving the Licensee's transmission system.
	Peak Water Demand	The maximum average water demand in a day (expressed in imperial gallons per day) as metered or otherwise measured at exit points on leaving the Licensee's water transmission system in relevant year t.
	Metered Water Units Transmitted	The aggregate quantity of water units transmitted (expressed in imperial gallons) through the Licensee's water transmission system in relevant year t metered (in compliance with the Metering and Data Exchange Code) at exit points on leaving the Licensee's transmission system.
Discos (ADDC and AADC)	**Electricity Customer Accounts**	The number of electricity customer accounts registered with the Licensee as of 31 December of relevant year t for the supply of electricity by the Licensee in that relevant year.
	Metered Electricity Units Distributed	The aggregate quantity of electricity units distributed (expressed in kilowatt-hours) through the Licensee's electricity distribution system in relevant year t metered at exit points on leaving the Licensee's distribution system.
	Water Customer Accounts	The number of water customer accounts registered with the Licensee as of 31 December of relevant year t for the supply of water by the Licensee in that relevant year.
	Metered Water Units Distributed	The aggregate quantity of water units distributed (expressed in imperial gallons) through the Licensee's water distribution system in relevant year t metered at exit points on leaving the Licensee's distribution system.

The following sections present the Bureau's assumptions for the Final Proposals on each revenue driver for the next price control period. As compared to the Draft Proposals, the main changes have been made to the metered units transmitted or distributed assumptions. Other, more minor changes to the assumptions have been made to reflect the latest data made available to the Bureau after the publication of the Draft Proposals.

4.4.1 Revenue Driver Assumptions for TRANSCO

Tables 4.2 to 4.5 set out the Bureau's assumptions for TRANSCO's four revenue drivers for the Final Proposals, along with those used in the Draft Proposals. As shown in **Table 4.2**, assumptions for peak electricity demand remain the same as in the Draft Proposals.

Table 4.2: TRANSCO Peak Electricity Demand (MW)

	2003	2004	2005
Bureau's Assumptions for Draft Proposals	4,056	4,519	5,109
Bureau's Assumptions for Final Proposals	**4,056**	**4,519**	**5,109**

Table 4.3 shows that the Bureau has significantly reduced the assumed extent of metering for electricity units transmitted over the period 2003-2005 in view of TRANSCO's concerns explained earlier. The Bureau regards the revised assumption as reasonable, as TRANSCO has informed the Bureau that while presently electricity metering at transmission exit points is non-existent or non-compliant with MDEC, TRANSCO plans to let a project which, if implemented, would enable 100% metering (MDEC compliant) within about a year. Therefore, if this metering project is implemented as planned, TRANSCO will over-perform against the targets implied by the revised assumptions and earn additional revenue. However, in view of the uncertainty, this revenue driver now has a weight of 10% (instead of 25%) in the calculations of MAR.

Table 4.3: TRANSCO Metered Electricity Units Transmitted (GWh)

	2003	2004	2005
Bureau's Assumptions for Draft Proposals			
Total units transmitted	22,300	24,800	28,000
Metered Only as % of Total	50%	75%	100%
Metered Only	11,150	18,600	28,000
Bureau's Assumptions for Final Proposals			
Total units transmitted	22,300	24,800	28,000
Metered Only as % of Total	10%	30%	50%
Metered Only	**2,230**	**7,440**	**14,000**

Assumptions for peak water demand and metered water units transmitted remain the same as in the Draft Proposals, as shown in **Tables 4.4** and **4.5**. This is because TRANSCO has confirmed the high metering coverage of water transmission system in compliance with MDEC.

Table 4.4: TRANSCO Peak Water Demand (MGD)			
	2003	**2004**	**2005**
Bureau's Assumptions for Draft Proposals	389	440	490
Bureau's Assumptions for Final Proposals	**389**	**440**	**490**

Table 4.5: TRANSCO Metered Water Units Transmitted (MG)			
	2003	**2004**	**2005**
Bureau's Assumptions for Draft Proposals			
Total	110,370	124,400	139,200
Metered Only as % of Total	95%	97%	100%
Metered Only	104,852	120,668	139,200
Bureau's Assumptions for Final Proposals	**104,852**	**120,668**	**139,200**

4.4.2 Revenue Driver Assumptions for ADDC

Tables 4.6 to **4.9** set out the Bureau's assumptions for the four revenue drivers for ADDC over the period 2003-2005 for the purpose of the Final Proposals. All these assumptions remain the same as those used in the Draft Proposals, with the exception of assumptions for metered water units distributed.

Table 4.6: ADDC Electricity Customer Accounts (Numbers)			
	2003	**2004**	**2005**
Bureau's Assumptions for Draft Proposals	207,628	225,110	238,920
Bureau's Assumptions for Final Proposals	**207,628**	**225,110**	**238,920**

Table 4.7: ADDC Metered Electricity Units Distributed (GWh)			
	2003	**2004**	**2005**
Bureau's Assumptions for Draft Proposals	13,152	15,095	17,221
Bureau's Assumptions for Final Proposals	**13,152**	**15,095**	**17,221**

Table 4.8: ADDC Water Customer Accounts (Numbers)			
	2003	**2004**	**2005**
Bureau's Assumptions for Draft Proposals	184,601	200,151	212,461
Bureau's Assumptions for Final Proposals	**184,601**	**200,151**	**212,461**

In relation to metered water units distributed, the Draft Proposals mentioned that ADDC was not able to provide any reliable estimate for this revenue driver. ADDC was concerned that the figures for 2000 derived from its New Billing System (NBS) differ significantly from the 1999 and 2001 figures. According to ADDC, it was continuing to work towards resolving these issues. To complete its 2002 PCR, ADDC used the 1999 figure (21,133 MG) for 2000 and 2001 for the time being.

As discussed above, in response to the Draft Proposals ADDC has expressed concerns on the opening base level of this driver in the Bureau's assumptions. ADDC has now provided the Bureau with the outturn figures for this revenue driver for 2001 and the first half of 2002. These figures (9,012 MG and 7,061 MG respectively) are significantly lower than those provided earlier by ADDC for 1999-2001. The Bureau has great concerns on this poor metering of water distribution system of ADDC. These concerns have also been shared by ADDC in its response to the Draft Proposals. The Bureau is concerned that while 56% of customer or distribution exit points are reported by ADDC as being metered, only 15% of the units distributed are reported as being metered at exit points. This implies that customers with large consumptions are not metered and only small customers are metered.

The Bureau has revised its assumptions for ADDC's metered water units distributed by taking the new figures for 2001 and 2002 provided by ADDC (figures for the full year 2002 has been calculated by doubling the figure for the first six months of 2002 reported by ADDC). The revised assumptions for the Final Proposals are set out in **Table 4.9** below. The Bureau's revised assumptions are based on lower percentages assumed for metering coverage to 66% at the end of second control period in the Final Proposals (from 72% in the Draft Proposals). These lower percentages assumed for metering coverage are consistent with those for TRANSCO's electricity units metered projections, in that both envisage a 50 percentage point increase in metering coverage over the next control period; that is from almost 0% in 2002 to 50% in 2005 for TRANSCO and from 16% to 66% for ADDC.

Table 4.9 ADDC Metered Water Units Distributed (MG)

	2001	2002	2003	2004	2005
Bureau's Assumptions for Draft Proposals					
Total Units at Exit Points	62,140	87,364	97,751	105,052	113,232
Metered Units as % of Total at Exit Points	56%	60%	64%	68%	72%
Metered Units at Exit Points	34,746	52,474	62,669	71,798	81,012
Bureau's Assumptions for Final Proposals					
Total Units at Exit Points	62,140	87,364	97,751	105,052	113,232
Metered Units as % of Total at Exit Points	15%	16%	20%	40%	66%
Metered Units at Exit Points	9,012	14,122	**19,550**	**42,021**	**74,733**

If it is the case that ADDC has failed to meter its larger customers it should be relatively straightforward for ADDC to rapidly increase metered units distributed in line with these projections.

4.4.3 Revenue Driver Assumptions for AADC

Subsequent to the Draft Proposals, the Bureau has received a revised un-audited 2002 PCR from AADC. Latest figures for all the revenue drivers (except for water customer accounts) for the past years provided in AADC's PCR remains broadly unchanged, hence requiring no change in the Bureau's assumptions for these revenue drivers as set out in **Tables 4.10, 4.11 and 4.13** below (AADC's latest figures for water units continue to be for total water units rather than the metered units only and hence have not been adopted). The one exception to this is "water customer accounts", for which AADC has now provided significantly higher figures than previously. The Bureau has adopted these revised figures as the basis for its projections shown in **Table 4.12**.

Table 4.10: AADC Electricity Customer Accounts (Numbers)

	2003	**2004**	**2005**
Bureau's Assumptions for Draft Proposals	84,000	88,202	92,612
Bureau's Assumptions for Final Proposals	**84,000**	**88,202**	**92,612**

Table 4.11: AADC Metered Electricity Units Distributed (GWh)

	2003	**2004**	**2005**
Bureau's Assumptions for Draft Proposals	5,915	6,385	6,873
Bureau's Assumptions for Final Proposals	**5,915**	**6,385**	**6,873**

Table 4.12 AADC Water Customer Accounts (Numbers)

	1999	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Bureau's Assumptions for Draft Proposals	25,580	27,590	30,070	31,713	33,619	35,529	37,321
% Annual Increase		7.86%	8.99%	5.46%	6.01%	5.68%	5.04%
Bureau's Assumptions for Final Proposals	50,935	51,065	53,168	55,226	**57,987**	**60,887**	**63,931**
% Annual Increase		0.26%	4.12%	3.87%	5.00%	5.00%	5.00%

Table 4.13: AADC Metered Water Units Distributed (MG)

	2003	**2004**	**2005**
Bureau's Assumptions for Draft Proposals	5,242	7,862	11,794
Bureau's Assumptions for Final Proposals	**5,242**	**7,862**	**11,794**

5 Operating Expenditure Projections

5.1 The Overall Approach

5.1.1 The Draft Proposals

The operating expenditure (opex) projections are one of the main inputs to the price control calculations for each company. While assessing the level of opex to be allowed by the price controls, the Bureau has to pay regard to its duties under Law No.2 of 1998 which require it (among other things) to ensure the operation and development of an *efficient* and *economic* water and electricity sector and to ensure that the companies are able to finance and plan their businesses with a reasonable degree of assurance.

Given the above considerations, the Bureau used the following approach in the Draft Proposals to assessing future opex for each company:

1. ***Base Level:*** For the base level of opex, assess the actual level of opex at the end of the first price control period, based on the most reliable recent data submitted by the companies.

2. ***Adjustment for Demand Increases:*** To forecast future (2003–2005) opex, increase the base level of opex to reflect increased costs associated with meeting increases in demand.

3. ***Adjustment for Efficiency Improvement:*** Reduce this demand-adjusted level of opex to take account of the assumed efficiency improvement over the duration of the revised price control.

4. ***Further Adjustments:*** Make any further adjustments to opex projections which may be appropriate.

(See the Draft Proposals for more details.)

In respect of point 1 above (***Base Level***), the Bureau explained in the Draft Proposals that its preferred methodology would be to use the audited level of opex in the most recently completed financial year (2001) as the base level of opex. According to their licences, these were due to be provided by the companies to the Bureau by 30 June 2002 at the latest. At the time of publication of the Draft Proposals, the Bureau had received draft audited accounts for 1999 for all of the companies except for TRANSCO, but no audited accounts for any company for the years 2000 and 2001.

For the Draft Proposals, the Bureau was reluctant to rely solely on unaudited data to set the price controls and therefore took ***the average of the 1999 (draft audited) and 2001 (unaudited) operating expenditure*** submitted by the companies. The Bureau agreed to ***update this approach for the Final Proposals*** in the light of any additional audited account data received from the companies.

The Draft Proposals also explained in detail the Bureau's approach on adjustments under points 2 and 3 above (i.e. ***Adjustments for Demand Increases and Efficiency Improvements***). In essence, the Bureau assumed that opex for 2003, 2004 and 2005 can remain constant in real terms at the base level. This assumes that any increases in opex over the next price control period that would otherwise result from demand growth can be offset by efficiency improvements.

The Draft Proposals also considered the necessity for ***further adjustments*** for other factors not adequately dealt with by the above methodology. The proposals discussed in some detail the possibility of adjustments for the effect of input prices on a firm's costs, substitution of capital for operating costs, administrative costs which ADWEA incurs on companies' behalf or causes them to incur, labour cost issues specific to the UAE, and costs associated with administering the PIS. However, for the reasons explained in the Draft Proposals, the Bureau did not make any adjustment to opex for these factors.

Finally, the Draft Proposals discussed one particular issue that arises in relation to any costs borne by ADWEC over 2003–2005 relating to the use of ***professional consultancy services by ADWEA for the procurement of IWPPs*** over that period. It was proposed that any costs borne by ADWEC over 2003 – 2005 relating to the use of professional consultancy services by ADWEA for the procurement of IWPPs over that period will be reviewed at the 2005 Price Controls Review against the Bureau's efficiency criteria. To the extent that such costs have not been taken into account at the present price control review but are subsequently found to be in accordance with the Bureau's efficiency criteria, an appropriate upward adjustment will be made to future allowed revenues at the 2005 Price Controls Review. This adjustment will be made in such a way that ADWEC will be no better or worse off in net present value terms than if the expenditure had been included in ADWEC's revenue allowance at the time it was borne by ADWEC.

5.1.2 Responses to the Draft Proposals

In general, the companies have recognized the need for the Bureau to use the above methodology to assess the future projections of costs in the absence of the required audited data. Some companies expressed concerns on the levels of opex for the next price control period determined in accordance with the above methodology, considering them as inadequate or insufficient. Factors cited included increasing staff requirement, increasing work load and gearing up to meet their licence requirements or other requirements due to lack of progress on certain matters by other companies. They argued against the use of historic costs or averaging of historic costs and the disregarding of their forecast of future cost levels.

The following is a summary of specific comments received from the companies:

1. ADDC considered the method to calculate its future opex projections from historic costs as partially flawed as the method implicitly disallowed 50% of the additional cost incurred by ADDC for the remote area distribution and supply businesses assumed to have been taken over by ADDC from RASCO from 2001.

2. ADDC argued that the cost of any generation or water production unit or the cost of providing standby generation taken over by ADDC from RASCO is not being covered by

the Draft Proposals. ADDC proposed that any further transfer of assets and responsibilities beyond those related to distribution and supply businesses as presently defined in the licence should be reflected in future reviews.

3. ADWEC did not agree with the Bureau's arguments that ADWEC can achieve an efficiency improvement of 3-7% during the next control period and has argued against the Bureau's comparison of ADWEC with Northern Ireland Electricity's Power Procurement Business (PPB).

4. ADWEC asked for a detailed breakdown of how the efficiency improvements have been factored into the allowed revenue calculation.

5. ADWEC also asked the Bureau to demonstrate how its "efficiency criteria" for review of professional consultancy fees over the period 2003-2005 at the time of the 2005 review are fair, reasonable and independent.

6. ADWEC asked for the pass-through treatment of any additional costs of training of UAE nationals (over and above those incurred in the past and hence already reflected in the base cost level for next control period) incurred in accordance with government policies. Accordingly, ADWEC proposed to add a new term "B_t" to its MAR formula to allow this pass through.

7. ADWEC argued against the Bureau's views in the Draft Proposals on the nature of ADWEC's budget for opex. While ADWEC accepted that it is unlikely that actual expenditure will exactly match budgeted expenditure, ADWEC argued that the company's budget and its development over time is still a very good indicator of the company's expenditure needs. ADWEC stated that there is a clear trend that ADWEC's actual expenditure has been catching up with its budget.

Subsequent to the publication of the Draft Proposals, the Bureau has also received draft audited accounts for 2000 from ADWEC and for 1999 and 2000 from TRANSCO. At the Bureau's request, ADWEC and ADDC have also submitted interim profit and loss accounts (unaudited as per licences) for 2002. The Bureau has not yet received these interim accounts from TRANSCO and AADC.

5.1.3 Bureau's Views on Responses to Draft Proposals

In relation to the companies' general concerns about the use of historic costs in setting future allowances, the Bureau recognizes that 1999 costs (which made up a 50% weight of the opex allowances in the Draft Proposals) may have been unusually low, due to the impact of restructuring at that time. However, the Bureau still believes that it would be imprudent to rely entirely on unaudited data in setting the price controls. In the continuing absence of audited financial data for 2001 (the Bureau's preferred basis for setting the revised price controls, if available), the Bureau has therefore decided to ***use average of 2000 and 2001 opex as the base level*** for the future opex projections. This proposal results in significantly higher opex allowances than in the Draft Proposals.

The Bureau's views on the specific issues raised by the companies, as summarized above, are as follows:

1. The Bureau accepts ADDC's argument on RASCO distribution and supply costs and has adjusted its approach for the distribution companies accordingly.

2. The Bureau accepts ADDC's arguments and proposes to make a retrospective adjustment for the distribution companies at the 2005 price control review if the licence is modified to allow any new activity as part of their licensed activities. Any such costs will be treated in a similar manner to "ADWEA costs for procurement of IWPPs for ADWEC" (see Section 5.2.5 of the Draft Proposals).

3. The Draft Proposals have discussed in detail the arguments for and against the assumption of efficiency improvement achievable and the comparison between ADWEC and NIE's PPB.

4. The assumption of efficiency improvement has not been specifically factored into the allowed revenue calculations as an input as such. Rather, the assumption is factored into the projections of opex (which are then used in determining allowed revenue). The Draft Proposals assumed that any increases in opex over the next control period due to increases in demand and output can be offset by a reduction in opex due to efficiency improvements. That is, opex for 2003, 2004 and 2005 has been kept remain constant in real terms at the base level.

5. The Bureau's efficiency criteria were established at the First Price Controls Review, and explained in Section 6 of the Draft Proposals. The criteria are that the expenditure is required to meet growth in customer demand or the relevant security standards, and is efficiently procured. These criteria for a review of any professional consultancy fees over the period 2003-2005 at the time of 2005 review are reasonable and fair in view of ADWEC's economic purchasing licence obligation (Condition 14 of ADWEC's licence) and of the Bureau's statutory duties to ensure the development and operation of economic and efficient water and electricity sector. The use of an independent, suitably-qualified, professional firm at the 2005 control review to make this assessment is not necessary, but is also not ruled out.

6. The Bureau considers that the higher levels of allowed revenue for ADWEC for the future than the current controls allow financing of additional UAE nationals training costs over and above incurred in the past and that any further risks have been adequately financed in its proposed profit margin for ADWEC (see Section 7.2 of this paper). The Bureau also considers pass-through of such costs would be inappropriate, since there would then be no incentive for ADWEC to attempt to control such costs.

7. The Bureau regards ADWEC's budget as a matter for ADWEC and ADWEA. In setting revised price controls, the Bureau is required to develop an independent view of ADWEC's expenditure needs over the next control period.

5.1.4 The Final Proposals

In view of the above, the Final Proposals are set on the basis of a base level of opex calculated as the average of the 2000 and 2001 opex for each company (adjusted to 2003 prices).

In addition, the treatment proposed in the Draft Proposals (section 5.2.5 thereof) for any costs borne by ADWEC over 2003-2005 relating to the use of professional consultancy services by ADWEA for the procurement of IWPPs over that period will be extended to also apply in the same manner to any costs borne by the Discos as a result of changes to the definition of the distribution or supply businesses arising as a result of the transfer of certain activities of RASCO to the Discos.

5.2 Operating Expenditure Projections for Each Company

Using the approach described in the preceding section (i.e. adjusting the 2000 and 2001 unaudited costs for 2003 prices and taking their average as the base level of costs), the Bureau has forecast opex projections for the companies, which are described in turn for each company in the following sub-sections. The actual and assumed CPIs for the past and future years are shown in **Table 5.1**.

Table 5.1: Actual and Assumed CPIs

(1995 = 100)	1998	1999	2000	2001	2002
			Actuals		Estimate
UAE CPI	106.9	109.2	110.7	113.1	114.7

Source: UAE Ministry of Planning for 1999 - 2001.
2002 estimate based on projection of Economist Intelligence Unit.

In these Final Proposals, the Bureau has improved the accuracy of its methodology for adjusting costs to 1999 or 2003 prices (or any other price base), to reflect the fact that UAE CPI reported by the Ministry of Planning is an end-year figure (not mid-year as assumed by the Bureau in its Draft Proposals).

5.2.1 Operating Expenditure Projections for ADWEC

The Draft Proposals

In the Draft Proposals, pending receipt of more recent audited accounts, the Bureau based opex projections for 2003 – 2005 on the average of 1999 draft audited and 2001 unaudited opex. The resultant figures (adjusted to 2003 prices) are summarized in **Table 5.2**.

Table 5.2: ADWEC Operating Expenditure: Draft Proposals			
2003 prices, AED m	**2003**	**2004**	**2005**
Operating Expenditure	8.04	8.04	8.04

Source: Bureau

Subsequent Developments

Subsequent to the Draft Proposals, the Bureau has received from ADWEC draft audited accounts for 2000, an interim profit and loss account for the first half of 2002 (unaudited), and further unaudited past cost data from ADWEC in its response to the Draft Proposals. The data from these sources and the original information submission are reproduced in **Table 5.3** below.

Table 5.3: ADWEC Operating Expenditure Submissions

(All figures in AED m)	1999	2000	2001	2002	2003	2004	2005
		Actuals		Estimate		Forecasts	
		(nominal prices)				(2002 prices)	
Information Submission	6.58	9.37	8.78	14.99	15.11	20.72	21.09
Draft Proposal Response	6.562	9.461	9.322	13.467			
Interim P&L Account*				7.872*			
Draft audited accounts	6.56	9.46	n/a	n/a	n/a	n/a	n/a

* Interim P&L Account gives cost for first half of the year. In the above table, cost for the whole year has been calculated simply by doubling this amount. Certain costs / recharges may be excluded from this figure.

Source: ADWEC

ADWEC's response to the Draft Proposals indicated an estimated opex for 2002 of about AED 13.5 million, which is about 10% lower than the figure of AED 15 million provided in its earlier Price Control Information Submission (PCS). The interim profit and loss account for 2002 shows AED 3.936 million as the actual opex in the first half of 2002. The Bureau has doubled this figure to assess the opex expected to be incurred over a full year basis in 2002. The Bureau understands that the resultant figure of AED 7.872 million may not include certain costs such as ADWEA recharges. Nonetheless, the difference between this resultant figure for 2002 and the budgeted cost for 2002 is substantial, at about AED 5.6 million. In other words, the budget costs for 2002 mentioned in ADWEC's earlier PCS and in its response to the Draft Proposals are about 90% and 71% respectively higher than the full year actual costs implied by the interim profit and loss account. This again supports the Bureau's view that the budgeted costs for 2002 or onwards are not a reasonable basis to forecast the efficient levels of future costs.

It is also noted that ADWEC's costs appear to have fallen between 2000 and 2001 (to below AED 9 million), which is also not suggestive of a need for major increase in allowed costs (to over AED 20 million by 2004 according to ADWEC).

The Final Proposals

In line with the proposed methodology described in Section 5.1 above, the Bureau has based opex projections for 2003 – 2005 on the average of 2000 draft audited and 2001 unaudited opex. The resultant figures (adjusted to 2003 prices) are summarized in **Table 5.4**. As with the Draft Proposals, "operating expenditure" for ADWEC is taken to include the small amount of capital expenditure undertaken by ADWEC, and depreciation.

Table 5.4: ADWEC Operating Expenditure: Final Proposals

2003 prices, AED m	2003	2004	2005
Operating Expenditure	9.798	9.798	9.798

Source: Bureau

These opex allowances are significantly higher than those used in the Draft Proposals, by about **22%**. Note that the above levels of costs do not include ADWEC's profit based on the Bureau's proposed profit margin (which amounts to another AED 1 million approximately), which is dealt with separately later in this paper. Further, any of ADWEA's professional consultancy costs incurred by ADWEC for the procurement of IWPPs (subject to the Bureau's efficiency criteria) will be reviewed at the 2005 control review for remuneration through future price controls.

5.2.2 Operating Expenditure Projections for TRANSCO

The Draft Proposals

In the Draft Proposals, pending receipt of any audited accounts, the Bureau based opex projections for 2003 – 2005 on the average of 1999 and 2001 unaudited opex. The resultant figures (adjusted to 2003 prices) are summarized in **Table 5.5**.

Table 5.5: TRANSCO Operating Expenditure: Draft Proposals

2003 prices, AED m	2003	2004	2005
Operating Expenditure (excluding depreciation) – electricity	79.37	79.37	79.37
Operating Expenditure (excluding depreciation) – water	76.86	76.86	76.86

Source: Bureau

Subsequent Developments

The Bureau acknowledges and appreciates the receipt of TRANSCO's draft audited accounts for 1999 on 24 September and draft audited accounts for 2000 on 4 November from TRANSCO. The projections for opex from TRANSCO's PCS (which were taken into account by the Bureau in the Draft Proposals) and actual opex from 1999 and 2000 draft audited accounts are summarized in **Table 5.6**.

Table 5.6: TRANSCO Operating Expenditure (excluding Depreciation)							
(All figures in AED m)	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
	Actuals			Estimate	Forecasts		
	(nominal prices)				(2002 prices)		
Information Submission – electricity	53.97	69.29	98.09	107.37	105.36	105.50	105.48
Information Submission – water	50.82	65.21	96.46	108.69	107.00	107.35	107.41
Draft audited accounts	134.245	169.988	n/a	n/a	n/a	n/a	n/a
Draft audited accounts – electricity*	69.136	87.573	n/a	n/a	n/a	n/a	n/a
Draft audited accounts – water*	65.109	82.415	n/a	n/a	n/a	n/a	n/a

* The total operating costs available from 1999 and 2000 accounts have been allocated by the Bureau to water and electricity according to water/electricity ratio underlying TRANSCO's PCS data for 1999 and 2000 respectively.

Source: TRANSCO

It can be seen that TRANSCO's concern at the level of costs proposed to be allowed by the Bureau in the Draft Proposals resulted, in part, due to its own information submission considerably understating its 1999 costs. At a meeting with the Bureau on 27 October, TRANSCO was invited to confirm its data submitted for 2000 and 2001 are accurate. Subsequent to this meeting, TRANSCO provided the Bureau with its draft audited accounts for 2000, which again showed costs considerably in excess of those previously reported by TRANSCO to the Bureau, and which have been taken into account for the Final Proposals.

The Final Proposals

Applying the methodology described earlier (i.e. by adjusting the 2000 draft audited and 2001 unaudited costs for 2003 prices and taking their average as the base level of costs), the Bureau's opex allowances for TRANSCO for 2003 - 2005 are summarized in **Table 5.7**:

Table 5.7: TRANSCO Operating Expenditure : Final Proposals			
2003 prices, AED m	**2003**	**2004**	**2005**
Operating Expenditure (excluding depreciation) – electricity	96.809	96.809	96.809
Operating Expenditure (excluding depreciation) – water	93.255	93.255	93.255

Source: Bureau

These opex allowances are higher than those used in the Draft Proposals, by about **22%** and **21%** for electricity and water, respectively.

5.2.3 Operating Expenditure Projections for ADDC

The Draft Proposals

The Bureau's opex allowances in the Draft Proposals for ADDC's electricity and water businesses respectively following the previously described methodology (i.e. adjusting the 1999 and 2001 unaudited costs for 2003 prices and taking their average as the base level of costs) are summarized in **Table 5.8**.

Table 5.8: ADDC Operating Expenditure: Draft Proposals

2003 prices, AED m	**2003**	**2004**	**2005**
Operating Expenditure (excluding depreciation) – electricity	182.88	182.88	182.88
Operating Expenditure (excluding depreciation) – water	110.45	110.45	110.45

Source: Bureau

The above allowances for the Draft Proposals were based on ADDC's draft audited accounting data for 1999 and unaudited 2001 data from ADDC's PCS. In the PCS, only figures relating to 2001 and onwards included additional costs to reflect the costs of the distribution and supply businesses of RASCO which are assumed to have been inherited with effect from 1 January 2001.

Subsequent Developments

The Bureau received a revised PCS from ADDC after the deadline for the receipt of information to be used in the Draft Proposals. The new cost data differ from previous the PCS for 1999 and 2000 only. The new cost data provided in the revised PCS are set out in **Table 5.9** below, along with 1999 draft audited costs allocated to water and electricity according to the ratio of such costs underlying ADDC's PCS data for 1999. As discussed in Section 5.1 above, the Bureau has accepted ADDC's argument that 1999 and 2000 costs should, for the purpose of assessing the future opex allowances, also include costs in relation to distribution and supply businesses taken over from RASCO. The Bureau has therefore calculated the costs related to the RASCO distribution and supply businesses taken over by ADDC as the difference between (i) the 2001 opex including RASCO costs and (ii) the 2001 opex excluding RASCO costs (as such a breakdown was provided to the Bureau in ADDC's PCS). In 2001, this difference amounted to about AED 9 million for electricity and AED 8.8 million for water. Adjusting this difference to 1999 and 2000 prices and then adding it to 1999 and 2000 costs in the draft audited accounts and the PCS, respectively, gives the opex for these years which include allowances for RASCO related costs. The above calculations and resulting opex for ADDC are also summarized in **Table 5.9** below, which then have been used to assess future opex for the purpose of Final Proposals:

ADDC also raised a concern that the Bureau had not taken adequate account in its projections of the budget agreed between ADWEA and ADDC. The Bureau has not been involved in the process of developing the budget and organisation plan agreed between ADWEA and ADDC, and so can make no comment upon it. However, the Bureau is aware of the tendency in the sector for the budget to overstate actual costs, and so considers that even if the budget is established on a reasonable basis, there is no guarantee it will reflect actual future costs (e.g. if recruitment does not match the staff plan). Furthermore, since the Draft Proposals, ADDC had submitted its (unaudited) interim accounts for the first six months of 2002. These indicate operating expenditure (for water and electricity combined) of about AED 144 million for the first six months of 2002, compared to ADDC's PCS estimate of AED 346 million for the full year (AED 214 million for electricity and AED 132 million for water). Even if account is taken of the fact that the interim figure excludes ADWEA recharges, it is not suggestive of a substantial increase in costs beyond the 2001 level of AED 309 million. The Bureau is therefore not persuaded that ADDC's budget is a better indicator than past costs of future costs.

Table 5.9: ADDC Operating Expenditure (excluding Depreciation) – Adjustments

(All figures in AED m)	1999	2000	2001	2002	2003	2004	2005
		Actuals		Estimate		Forecasts	
		(nominal prices)				(2002 prices)	
Electricity							
PCS Opex excluding RASCO	158.52	178.49	180.04				
PCS Opex including RASCO			189.07	214.26	224.97	236.22	248.03
Opex for RASCO only for 2001			9.03				
Opex for RASCO for 1999 & 2000	8.72	8.91					
Draft Audited Opex (excl RASCO)	150.49						
Adjusted Opex (incl RASCO)	***159.21***	***187.40***	***189.07***				
Water							
PCS Opex excluding RASCO	92.58	106.43	111.10				
PCS Opex including RASCO			119.90	132.15	138.76	145.70	152.99
Opex for RASCO only for 2001			8.81				
Opex for RASCO for 1999 & 2000	8.50	8.69					
Draft Audited Opex (excl RASCO)	87.89						
Adjusted Opex (incl RASCO)	***96.40***	***115.12***	***119.90***				

Source: Bureau/ADDC

The Final Proposals

Applying the methodology described earlier in Section 5.1 of this paper for the Final Proposals (i.e. by adjusting the 2000 and 2001 unaudited costs for 2003 prices and taking their average as the base level of costs), the Bureau's opex allowances for ADDC for 2003 - 2005 are summarized in **Table 5.10**:

Table 5.10: ADDC Operating Expenditure: Final Proposals

2003 prices, AED m	2003	2004	2005
Operating Expenditure (excluding depreciation) – electricity	196.367	196.367	196.367
Operating Expenditure (excluding depreciation) – water	122.575	122.575	122.575

Source: Bureau

These allowances for opex are higher than those used in the Draft Proposals, by approximately **7%** for electricity and **11%** for water.

5.2.4 Operating Expenditure Projections for AADC

The Draft Proposals

The Bureau's opex allowances for AADC for 2003 – 2005 used in the Draft Proposals are summarized in **Table 5.11**, being an average of 1999 and 2001 PCS data (adjusted for 2003 prices).

Table 5.11: AADC Operating Expenditure: Draft Proposals

2003 prices, AED m	2003	2004	2005
Operating Expenditure (excluding depreciation) – electricity	91.87	91.87	91.87
Operating Expenditure (excluding depreciation) – water	87.85	87.85	87.85

Source: Bureau

Subsequent Developments

Subsequent to the publication of the Draft Proposals, the Bureau has received a revised PCS from AADC. The main change from the previous PCS is a significant change in the general overhead expense due to a bad debt provision, as explained by the company. The Bureau is not persuaded by the company that it would be appropriate to include this provision in identifying future expenditure requirements. The Bureau has therefore accepted this new submission but has disregarded the bad debt provision by replacing the general overhead expense in the new PCS by that in the original PCS. These underlying calculations and resulting opex are reproduced in **Table 5.12** below, which have been used to assess the future opex for the purpose of the Final Proposals. Since AADC has informed the Bureau that it has not taken over any distribution and supply businesses of RASCO, the Bureau has not made any adjustment to AADC's past opex to account for such business (as has been done for ADDC).

Table 5.12: AADC Operating Expenditure (excluding Depreciation)							
(All figures in AED m)	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
		Actuals		Estimate		Forecasts	
		(nominal prices)				(2002 prices)	
Electricity							
Latest PCS Opex	170.46	152.32	105.92	112.57	146.76	154.10	161.80
Latest PCS General Overhead	92.30	64.51	8.09	18.44	17.57	18.45	19.37
Latest PCS Opex excl General OH	78.15	87.81	97.83	94.14	129.19	135.65	142.43
Previous PCS General Overhead	10.76	5.99	0.34	22.39	23.51	24.69	25.92
Adjusted Latest PCS Opex	88.91	93.80	98.17	116.53	152.70	160.34	168.35
Water							
Latest PCS Opex	64.39	80.09	79.64	100.53	103.03	108.19	113.60
Latest PCS General Overhead	6.49	7.33	8.60	47.73	32.22	33.84	35.53
Latest PCS Opex excl General OH	57.90	72.77	71.04	52.80	70.81	74.35	78.07
Previous PCS General Overhead	6.04	0.88	34.00	30.72	32.26	33.87	35.57
Adjusted Latest PCS Opex	63.93	73.65	105.04	83.52	103.07	108.22	113.63

Source: Bureau's calculations based on AADC's PCS.

The Final Proposals

Applying the methodology described earlier in Section 5.1 of this paper for the Final Proposal to the operating costs set out in **Table 5.12** above (i.e. by adjusting the 2000 and 2001 unaudited costs for 2003 prices and taking their average as the base level of costs), the Bureau's opex allowances for AADC for 2003 - 2005 are summarized in **Table 5.13**:

Table 5.13: AADC Operating Expenditure: Final Proposals			
2003 prices, AED m	**2003**	**2004**	**2005**
Operating Expenditure (excluding depreciation) – electricity	100.117	100.117	100.117
Operating Expenditure (excluding depreciation) – water	93.097	93.097	93.097

Source: Bureau

These allowances for AADC's opex are higher than those used in the Draft Proposals, by approximately **9%** for electricity and **6%** for water.

6 Capital Expenditure and Asset Valuation for Network Companies

6.1 The Overall Approach

The calculations of Regulatory Asset Values (RAVs) for network businesses are an important element of the Bureau's estimation of the costs needed to be recovered via allowed revenues under the price controls. RAV for each network business is calculated for each year by updating the previous year's RAV for net new investment over the year (where net new investment is capital expenditure less depreciation). These calculations therefore require projections of the capital expenditures (capex) and depreciation for each business. This section sets out the Bureau's approach to making these projections for past (1999-2002) as well as future (2003-2005) capex and to updating the RAVs, which have then been used in the price control calculations in Section 8 of this paper.

For ADWEC, capex is included within the operating expenditure allowances, discussed in Section 5 of this paper.

6.1.1 Treatment of Capital Expenditure in Initial Price Controls

The initial price controls were set in 1999 assuming no capex in the first price control period for the three network companies, due to the unavailability of reliable projections at that time. It was then agreed that when setting the next price controls, the Bureau would take account of capital expenditure incurred during the current period (along with its associated foregone financing costs), provided that capex carried out could be shown to be in accordance with the "efficiency criteria" established by the Bureau at the time of setting the first price controls. These criteria are that the expenditures:

- were required to meet growth in customer demand or the relevant security standards; and
- were efficiently procured.

6.1.2 The Draft Proposals

As explained in the Draft Proposals, the lack of audited data has meant that the Bureau has had great difficulty in accurately identifying the amount of capex actually incurred by the companies over the first price control period. The Bureau therefore deferred to the 2005 price control review the assessment of past capital expenditure against the Bureau's efficiency criteria. However, in the Draft Proposals the Bureau made a provisional assumption for past capital expenditure accounted for at the present price control review. An adjustment – upwards or downwards – would then be made to the RAVs at the 2005 price control review to appropriately remunerate actual investment over 1999 – 2002 that can be shown to be consistent with the Bureau's efficiency criteria.

This approach of allowing some provisional amounts of capex was principally aimed at minimizing revenue volatility across price control periods, and was thus preferred to the alternative of continuing to allow zero capex.

The Bureau's approach for future capex (2003-2005) in the Draft Proposals was similar to that for past capex. That is, the Bureau made a conservative judgement as to the provisional amount of future capex that could be allowed at the present price control review and an adjustment – upwards or downwards – would then be made to the RAV at the 2005 price control review to appropriately remunerate actual investment over 2003 – 2005 that meets the Bureau's efficiency criteria.

For the Draft Proposals, the provisional figures for past capex, which apply to each year of the first price control period, were derived as follows:

- For TRANSCO, in the absence of *any* audited data at that time, unaudited 1999 capex figures for water and electricity were taken from its PCS.
- For ADDC, draft audited total 1999 capex was split between water and electricity in the same proportions as unaudited capex in its PCS.
- For AADC, draft audited total 1999 capex was split between water and electricity in the same proportions as unaudited capex in *ADDC*'s PCS (since AADC's PCS was not regarded as sufficiently reliable for this purpose).

The provisional figures for 2003-2005 in the Draft Proposal were, with one exception, the same annual amounts as assumed for 1999 – 2002, but expressed in 2003 prices (the price base for the revised controls) rather than 1999 prices (the price base for the initial controls). The one exception related to TRANSCO's water transmission business, for which an increased provision was assumed due to the reason explained in the Draft Proposals.

Depreciation associated with each of past and future expenditure was then estimated by assuming an average asset life of 25 years and straight-line depreciation. The Bureau made it clear that they should not be taken as reflecting the Bureau's view of the appropriate depreciation policy. The depreciation associated with allowed capex will be finally determined in the process of reviewing the efficiency of past capex at the 2005 Price Controls Review.

6.1.3 Responses to the Draft Proposals

Companies' responses to the Draft Proposals in relation to the treatment of capex are summarized below:

1. Companies in general have accepted the need for the Bureau to exercise judgement towards capex in the absence of audited data. However they have expressed concerns about the levels of capex accounted for in the Draft Proposals compared to their actual and forecast capex.

2. One company has argued that deferral of the assessment of capex to the 2005 Price Controls Review would increase regulatory risk. It has therefore been questioned as to why such assessment should not be made at the present review.

3. The same company has also argued that the Bureau should define its view of the appropriate depreciation policy as this has impacts on the asset management strategy of the company.

6.1.4 Bureau's Views on Responses to Draft Proposals

The Bureau's responses to the issues raised by the companies on the Draft Proposals are as follows:

1. The Bureau proposes to address the companies' concerns on the level of capex by modifying its approach to determining the provisional levels of past and future capex in the Final Proposals that should be accounted for in the revised price controls (see below).

2. In relation to the deferral of the assessment of 1999-2002 capex against the Bureau's efficiency criteria to the 2005 price control review, the Bureau clarifies that such an assessment cannot be made in the absence of audited accounts and approved security standards for these past years. The Bureau hopes that audited information for each of years 1999 to 2002 would be available by 2004 to carry out the efficiency assessment of capex for these years as part of the 2005 price control review. The Bureau believes that the companies, apart from cash flow reasons, should in any case be indifferent to the provisional levels of the capex used in the revised price controls, as the adjustments to be made at the 2005 price control review would take account of the financing costs associated with any delay in including or excluding the capex concerned in the RAV.

3. For the price controls review, assets have been considered on an aggregate basis at the level of each separate business, which requires an assumption for the average life of the assets. On the other hand, the company's asset management strategy requires an assessment of the economic and engineering lives of individual assets, among other factors. The Bureau therefore regards the average life assumption used for the price controls review as a separate matter to the company's asset management strategy or practices. More importantly, the Bureau reiterates that the average life assumption for price controls does not reflect the Bureau's view of the appropriate depreciation policy for any or all parts of the assets of any business, and therefore should not pre-judge the future assessment of capex against the efficiency criteria.

   To avoid any further confusion and to ensure consistency with the depreciation assumption underlying the initial price controls (used in depreciating the initial 1999 RAVs), the Bureau has assumed an overall average asset life of **30 years** for the Final Proposals (compared to 25 years assumed for the Draft Proposals).

6.1.5 The Final Proposals

The Bureau's overall approach of including *provisional* levels of past and future capex in the new price controls, and of updating the RAVs, remains the same for the Final Proposals as set out in the

Draft Proposals. However, as mentioned above, the Bureau has revised its approach to making a judgement as to the provisional *amounts* of past and future capex to be accounted for at the present price control review. The setting of the revised provisional amounts of past and future capex for the Final Proposals is clarified in the following section.

6.2 Provisional Capital Expenditure Assumptions

6.2.1 Setting Provisional Levels of Capital Expenditure for 1999 - 2005

Given the difficulties in accurately identifying the amount of capex actually undertaken by the companies over the first price control period, due to the lack of audited data for the period, the Bureau in the Draft Proposals made a conservative judgement as to the amount of past and future capex to be accounted for at the present price control review. For the Final Proposals, the Bureau has continued with its principle to make a conservative judgement as to the provisional amounts of capex. However, the Bureau has revised its method to derive the provisional amounts of capex.

For the Final Proposals, the provisional figures for past and future capex have been derived as follows:

- For TRANSCO for 1999 and 2000, 75% of draft audited 1999 and 2000 capex (split between water and electricity in the same proportion as unaudited capex in their PCSs) have been taken as the provisional figures. For 2001-2005, the provisional figures have been calculated as 75% of the unaudited or forecast capex (separately for water and electricity) provided in TRANSCO's PCSs.

- For ADDC, for 1999, 75% of draft audited 1999 capex (split between water and electricity in the same proportion as unaudited capex in their PCSs) has been taken as the provisional figure. For 2000-2005, the provisional figures have been calculated as 75% of the unadited or forecast capex (separately for water and electricity) provided in ADDC's PCSs.

- For AADC, the above approach would produce lower capex which than that allowed in the Draft Proposals and so the approach used in the Draft Proposals (i.e. 100% of 1999 draft audited capex) has been retained for all years.

As discussed above, the depreciation associated with each of these provisional capex assumptions has been estimated by assuming an overall average asset life of **30 years**, and straight-line depreciation.

The resulting provisional allowances for 1999 – 2002 (1999 prices) annual capex are given in **Table 6.1**.

Table 6.1: Provisional 1999 – 2002 Capital Expenditure: Final Proposals				
AED million, 1999 prices	**1999**	**2000**	**2001**	**2002**
TRANSCO – Electricity	344.172	533.792	795.288	1,222.498
TRANSCO – Water	118.735	123.456	92.110	289.037
ADDC – Electricity	196.511	300.858	398.342	389.889
ADDC – Water	69.105	44.923	130.471	380.707
AADC – Electricity	188.675	188.675	188.675	188.675
AADC – Water	66.350	66.350	66.350	66.350

Source: Bureau

Overall, the provisional allowances for TRANSCO and ADDC for 1999-2000 are **25%** and **35%** respectively higher than those proposed in the Draft Proposals. The provisional capex for AADC remains the same as that in the Draft Proposals.

The resulting provisional allowances for 2003 – 2005 annual capex (2003 prices) are given in **Table 6.2**.

Table 6.2: Provisional 2003 – 2005 Capital Expenditure: Final Proposals			
AED million, 2003 prices	**2003**	**2004**	**2005**
TRANSCO – Electricity	1,267.791	730.378	346.036
TRANSCO – Water	1,261.103	1,280.087	243.243
ADDC – Electricity	461.876	484.969	509.218
ADDC – Water	151.420	158.991	166.941
AADC – Electricity	205.796	205.796	205.796
AADC – Water	72.370	72.370	72.370

Source: Bureau

Overall, the provisional allowances for TRANSCO and ADDC for 2003-2005 are **62%** and **70%** respectively higher than those proposed in the Draft Proposals. The provisional level of capex for AADC in each year is about **2%** higher than that in the Draft Proposals, due to change in the CPI adjustments discussed in Section 5.2 of this paper.

6.2.2 Capex Assessment at 2005 Price Control Review

As set out in the Draft Proposals, once the Bureau receives a full set of audited data reporting capex for the period 1999 – 2002, it will undertake an efficiency audit to judge the extent to which the actual capex undertaken complied with the Bureau's efficiency criteria. The actual capital expenditure undertaken over the period 2003-2005 will also be reviewed at the 2005 Price Controls Review against the Bureau's efficiency criteria. An adjustment – upwards or downwards – will then be made to the RAV at the 2005 price control review to appropriately remunerate the actual investments over 1999-2002 and 2003 – 2005 that can be shown to be consistent with the Bureau's efficiency criteria. This upward or downward adjustment will also take account of the financing costs (at the cost of capital underlying the price controls) associated with any delay in including or excluding the expenditure concerned in the RAV.

Thus, no judgement has been made at the present review regarding the efficiency or otherwise of capex undertaken by the companies over 1999-2002 or as to the appropriate level of capital expenditure over 2003 – 2005. This assessment has been deferred to a later date, when improved information should be available. The provisional levels of past and future capex and depreciation used in setting the revised price controls should not be taken as in any way indicative of the Bureau's views of the appropriate level of capital expenditure and depreciation over the periods 1999-2002 and 2003-2005.

6.3 2005 Projected Regulatory Asset Values

6.3.1 Initial RAVs for 1999

In setting the initial price controls, the opening asset value of TRANSCO (as at 1 January 1999) was reduced by 15 per cent, following analysis by the Bureau, with no adjustment to the opening asset values of the distribution companies. As explained in the previous consultation papers and summarized in the Draft Proposals, the Bureau concluded that it would not be appropriate to make any further adjustment to the initial RAVs (as at 1 January 1999) for any network company. This conclusion remains valid for the calculations used to derive these Final Proposals.

The RAVs at the start of the first price control period used in setting the initial price controls are summarized in **Table 6.3**, alongside their annual depreciation.

Table 6.3: Initial (1 January 1999) RAVs

AED million , 1999 prices	RAV	Annual depreciation
TRANSCO – Electricity	2,907.1	115.1
TRANSCO – Water	2,053.2	113.6
ADDC – Electricity	2,939.2	131.0
ADDC – Water	845.6	57.1
AADC – Electricity	1,516.1	78.8
AADC – Water	129.3	3.9

Source: Bureau

6.3.2 Projected RAVs for 2003 – 2005

To calculate the regulatory asset values (RAVs) over 2003-2005 for the Final Proposals based on the revised provisional figures for past and future capex and associated depreciation, the Bureau has employed the same steps as set out in the Draft Proposals. That is, RAVs for the next price control period have been projected as follows:

- The Opening RAVs for each company at 1 January 2003 have been calculated by rolling forward the Initial (1 January 1999) RAVs used in setting the initial price controls for provisional 1999 – 2002 capital expenditure.

- To this figure has been added the net present value (at 1 January 2003) of the financing costs foregone (both foregone depreciation and return on capital) over 1999 - 2002 associated with the provisional 1999 – 2002 capital expenditure.

- The resulting Opening RAVs at 1 January 2003, adjusted for 2003 prices, have been rolled forward for 2003 - 2005 provisional capital expenditure to derive RAVs for each year of the control period.

Detailed calculations for updating 2003 RAVs to the start of 2003 are provided in **Appendix A** to this paper, and those for updating subsequent RAVs are given in **Appendices C to E** (along with main price control calculations). The resultant opening RAVs (at 1 January each year) in 2003 prices are summarized in **Table 6.4** (the opening RAV for 2006 also acts as the closing RAV for 2005).

Table 6.4: Opening RAVs for 2003 – 2006: Final Proposals

AED m, 2003 prices	2003	2004	2005	2006
TRANSCO Electricity	6,150.55	7,149.01	7,585.72	7,626.55
TRANSCO Water	2,480.35	3,555.19	4,606.34	4,612.53
ADDC Electricity	4,180.40	4,440.40	4,707.32	4,981.52
ADDC Water	1,408.11	1,470.82	1,535.81	1,603.18
AADC Electricity	2,237.50	2,324.91	2,405.47	2,479.17
AADC Water	455.90	512.24	566.16	617.67

Source: Bureau

These RAVs are higher than those derived in the Draft Proposals in almost all cases, reflecting higher provisional levels of capex accounted for in the Final Proposals. For example, the 2005 closing RAVs for TRANSCO are about **24%** and **31%** higher than those in the Draft Proposals for electricity and water, respectively. For ADDC's electricity and water businesses, the 2005 closing RAVs are about **21%** and **38%** higher than those in the Draft Proposals, respectively. There are also small increases (up to **2%**) for AADC's RAVs compared to the Draft Proposals (due to the inflation adjustment and change in average life assumption referred to earlier).

7 Cost of Capital and Profit Margin

7.1 Cost of Capital for Network Companies

7.1.1 The Draft Proposals

The initial price controls were set on the basis of a real post-tax cost of capital of 6 per cent. In the Draft Proposals, the Bureau proposed to continue to assume a cost of capital of 6 per cent for the new price controls. The Bureau calculated the cost of capital as the weighted average cost of capital (WACC) and used the Capital Asset Pricing Model (CAPM) to estimate the cost of equity to the Abu Dhabi businesses. The cost of debt was found by adding a suitable corporate debt premium to a risk-free rate. The Bureau's cost of capital calculations for the Abu Dhabi companies draw on estimates of the cost of capital of network businesses in the UK, USA, and Australia. The present coverage and liquidity of the UAE capital market is such that the Bureau is reluctant to reference its cost of capital calculations to it at this time.

In the previous consultation papers and the Draft Proposals, the Bureau made references to several overseas regulatory decisions and gave examples of local electricity and water, and oil and gas, companies to support its estimate of cost of capital. The cost of capital estimate of 6 per cent was retained, despite some evidence that the cost of capital may have fallen over the present price control period. The Bureau adopted such an approach to ensure that companies have a strong incentive to invest to meet the forecast demand growth in the sector in good time and to ensure that companies remain able to finance their operations assuming they operate efficiently. Such a return also accommodates any additional risks that may be perceived by the companies as being associated with the strengthening of incentive mechanisms within these revised price controls.

7.1.2 The Final Proposals

None of the responses to the Draft Proposals objected to the Bureau's proposal of 6 per cent for the cost of capital. The Bureau has therefore retained its estimate of 6 per cent for real post-tax cost of capital.

7.2 Profit Margin for ADWEC

7.2.1 The Draft Proposals

The previous consultation papers highlighted that ADWEC, in contrast to the network companies, has few capital assets but is exposed to risks associated with large financial flows. Therefore, the application of a cost of capital to an asset value is not the best means of estimating the allowed returns for ADWEC. The Bureau proposed to express ADWEC's allowed return in the form of a margin on its maximum allowed revenue. The Draft Proposals explained in detail the Bureau's calculation of ADWEC's profit margin for the new price controls. In essence, to proxy for all of the risks faced by ADWEC, the Bureau considered a "worst case" scenario for BST forecasting risk whereby ADWEC over-recovers the BST by 5% in each year of the control period due to any reason.

Under ADWEC's existing licence, ADWEC is subject to a "penalty" interest rate of 3% if ADWEC over-recovers the BST by more than 2% of MAR. The Bureau therefore calculated the hypothetical capital that would be required to back this risk over the three-year price control period. Applying the cost of capital of 6 per cent to this hypothetical capital and applying the resulting annual return to ADWEC's expected total annual turnover produced a profit margin of about 0.025 per cent.

The above calculation was based on ADWEC's existing licence (and degree of risk exposure), and the Bureau stated that a lower allowed margin may be appropriate were the licence to be amended to reduce ADWEC's exposure to risks. The Draft Proposals also identified options on how the licence could be modified with regards to the BST calculations, if ADWEC so wished, to reduce ADWEC's expose to risks associated with the BST over-recoveries.

7.2.2 Responses to the Draft Proposals

In response to the Draft Proposals, ADWEC has accepted in principle the approach of profit margin and stated its preferred option to keep the licence unmodified with regards to the BST calculations. However, it has shown concerns on the 0.025% margin proposal and proposed a number of amendments to its licence, as summarized below:

1. ADWEC has considered that 0.025% margin proposal has not been calculated on the basis of a 'worst-case' over-recovery scenario. In essence, ADWEC has argued that the Bureau has used past experience to predict what could be the worst-case scenario.

2. ADWEC believes that in the future the possibilities for over-estimating the BST may be greater than those in the past. The potential scenario which ADWEC has identified could occur in 2004 or after, due to an event of default of a generator as per the PWPA, which may result in ADWEC buying the production plant. ADWEC sees two issues arising from such a situation:

    - First, production of water and electricity by ADWEC is currently prohibited by its licence. In order to partly address this issue, ADWEC has proposed an amendment to its licence to allow ADWEC to produce electricity and water in the above described situation.

    - Second, ADWEC has argued that if it opts to buy the plant there is a cost of capital associated with it. According to ADWEC, such a situation may or may not occur during the next price control period. However, it is exposed to such risks which cannot be remunerated through the present margin on turnover.

3. ADWEC has recommended to add a new term B_t to the formula used in its licence to calculate MAR, in order to allow as pass-through costs that it regards as out of ADWEC/ADWEA control as per government policies or instructions either implemented through ADWEA or directly.

4. ADWEC has also recommended revision of the definition of the term "$PWPA_t$" used in its MAR formula in the licence to include amounts due under interconnection agreements and ancillary services agreements.

7.2.3 *Bureau's Views on Responses to Draft Proposals*

The Bureau's views on the ADWEC's response are as follows:

1. The Bureau regards the assumption of BST over-recovery by 5 per cent as, if anything, generous to ADWEC. In practice, average over-recovery would be expected to be lower than this: one should expect that if ADWEC over-recovers in one year, it will calculate BST in the future in a manner so as to avoid over-recoveries in subsequent years. In fact, the Bureau considers that the BST over-recovery of 5% assumed in the Bureau's calculation example, if anything, over-estimates the risks faced by ADWEC, as the actual BST over-recovery in any of the past years has never approached 5% (and if it had consistently been so large the Bureau would have expected ADWEC to have amended its forecasting approach). Therefore, it is not true to say that the Bureau has used the past experience as the sole basis to predict what could be the worst-case scenario.

2. It has not been explained to the Bureau how an event of default of a generator under the PWPA (which may result in ADWEC buying the plant) should necessarily cause an over-estimation of the BST and hence increased BST over-recoveries. Nonetheless, the Bureau's views on the two issues raised by ADWEC in relation to this potential scenario are summarized below:

   - The Bureau proposes to consider outside of the price control review ADWEC's proposed licence modification to allow ADWEC to generate electricity and water if an event occurs under the PWPA requiring ADWEC to purchase of the plant. The proposed licence modification deserves detailed review and consideration of several crucial issues.

   - In relation to the argument for remunerating ADWEC for risks or cost of capital associated with the purchase, ownership or operation of the plant, the Bureau notes that:

     - The BST calculations (through the definition of the term "$PWPA_t$" in the MAR formula) and the Bureau's calculation of profit margin do not take into consideration the liquidated damages or other income that ADWEC can be expected to receive due to any event of default under the PWPAs. Therefore, it is not reasonable to ask for profit margin to remunerate for costs or risks for ADWEC arising due to events of defaults under the PWPAs.

     - The Bureau also believes that it is for ADWEC to negotiate a balanced PWPA so that an event of default of a generator should not increase the burden on ADWEC. The option to buy a plant in case of a default by the generator under the PWPA should be exercised by ADWEC keeping in view the costs and benefits and associated risks.

     - If ADWEC has to buy a plant because of any event under the PWPA, the risks associated with such a purchase, ownership and operation of the plant should be remunerated through the sale of the plant or of its capacity and output rather than through the regulated procurement business of ADWEC.

3. The Bureau understands that the amendment relating to addition of a new term "B_t" for costs incurred due to implementation of government policies or instructions on training of UAE nationals has been proposed to eliminate the risk of such costs, over and above those costs incurred in the past (and hence already remunerated through the new price controls). The issue has also been discussed in Section 5 of this paper; the Bureau does not regard any adjustment to its proposals as necessary.

4. Similarly, the amendments proposed by ADWEC for the definition of "$PWPA_t$" to include amounts due under any interconnection agreements and ancillary service agreements also aims at eliminating the risks of such costs not being recovered under the price controls. The Bureau's view is that the contracts for ancillary services are already specifically covered by the licence definition of term "$PWPA_t$" read with the licence definition of "power and water purchase agreements" and Article 36 of Law No.2 of 1998. Similarly, any contract such as interconnection agreement if it involves the purchase of water and electricity capacity and output is also covered by the above definitions.

7.2.4 The Final Proposals

In view of the foregoing discussion, the Bureau has therefore retained the profit margin of 0.025% on turnover for the Final Proposals set out in this paper. The Bureau has incorporated profits into the 'A' term (the procurement cost), based on the margin (0.025%) applied to ADWEC's forecast BST turnover for the next control period.

8 Price Control Calculations

8.1 Approach to Calculating Revenue Requirement

Consistent with the approach taken to setting the initial price controls and used in the Draft Proposals, the Bureau has used a net present value (NPV) framework to establish the level and profile of price controlled revenue for each business for the period 2003 – 2005 in these Final Proposals. The calculation of the present value of the company's required revenue over the control period is as follows:

$$\mathbf{PV\ (Rev) = PV(RAV_{opening}) + PV(Opex) + PV(Capex) - PV(RAV_{closing})}$$

where,

PV is the present value at 1 January 2003;

Rev is the total revenue over the price control period

$RAV_{opening}$ is the opening regulated asset value on 1st January 2003;

Opex is the total operating expenditure over the price control period;

Capex is the total capital expenditure over the price control period; and

$RAV_{closing}$ is the closing regulated asset value on 31st December 2005.

The above calculation methodology applies to electricity and water MARs for TRANSCO, to maximum allowed electricity and water distribution and supply revenues (DSRs) for Discos, and to maximum allowed procurement cost (A) for ADWEC. However, in the case of ADWEC, asset values, depreciation and capital expenditures being very small are set to zero in the above calculations and instead included in the operating expenditures. That is, for ADWEC, the PV of required revenue is calculated as the sum of present values of operating expenditures (which includes ADWEC's capital expenditures as well) and profits on turnover over the control period.

The price control calculation requires projections to be made of operating and capital expenditures, RAVs and revenue drivers over the price control period. The Bureau's assumptions for revenue drivers for network companies are described in the Section 4 of this paper, whereas Section 5 of this paper describes the Bureau's projections for operating expenditure over 2003 – 2005. The provisional allowances for capital expenditure and opening RAVs for the periods 1999 – 2002 and 2003 – 2005 are described in Section 6 of this paper. The discount rate used in the present value calculation is the cost of capital discussed and set out in Section 7 of this paper (i.e. 6%, real post-tax).

8.2 Approach to Calibrating Notified Values

As explained in the Draft Proposals, to determine the notified values (a (or A for ADWEC), b, c and X), the sum of the present values (PVs) of annual maximum allowed revenues (MARs) over the control period, based on the annual projections of revenue drivers for the control period, has been set equal to the PV of total required revenue calculated as above. All calculations are carried out in 2003 real terms, that is excluding the effect of inflation, and are subject to constraints which are put on shares of different revenue terms to the total revenue and on the value of X.

The above PV approach ensures a smooth profile of allowed revenues across the price control period (i.e., the same value of 'X' in the CPI-X formula in each year). In addition, the Bureau has cross-checked the resulting profile of allowed revenues against accrued operating costs on an annual basis to ensure that it does not result in undue volatility from year-to-year in the reported financial position of any of the companies.

As for the Draft Proposals, the Bureau for the price control calculations in the Final Proposals has assumed appropriate weights for the three terms (i.e. fixed term and two variable terms) in the PV of total price-controlled revenue for the network companies. These weights are summarized in **Table 8.1**. These weights are different from those proposed in the Draft Proposals. The weight of the third term involving metered electricity or water units transmitted or distributed has now been reduced to 10% for the Final Proposals (from 25% in the Draft Proposals) in view of the companies' concerns on these revenue drivers, as discussed in Sections 3 and 4 of this paper. Accordingly, the weight of the fixed term involving notified value 'a' has been increased to 65% (from 50% in the Draft Proposals). These weights relate to the present value of total revenue over the control period. The weights may vary from year to year, depending on the relative movement in revenue drivers in each year.

For ADWEC, as discussed in Sections 3 and 4, the fixed procurement cost term (A) has been given 100% weight as the two variable revenue drivers for ADWEC proposed in the Draft Proposals have now been removed in the Final Proposals.

Table 8.1: Weights of Terms in Network Revenue for PC2

Revenue Term	Related Revenue Driver		Weight in Revenue
	TRANSCO (E/W)	Discos (E/W)	
First Term ('a')	Fixed Amount	Fixed Amount	**65%**
Second Term (involving 'b')	Peak Electricity / Water Demand	Electricity / Water Customer Accounts	**25%**
Third Term (involving 'c')	Metered Electricity / Water Units Transmitted	Metered Electricity / Water Units Distributed	**10%**
Total			**100%**

The Bureau has used the same Microsoft Excel models for its price control calculations for the Final Proposals as were used in the Draft Proposals. However, necessary changes have been made to the price control calculation model for ADWEC in view of the structure of its price control adopted for these Final Proposals.

The 'X' factor has been used as an input, among many others, to the above calculations. The choice of 'X' is largely an arbitrary one and has been set to zero in these Draft Proposals for all regulated business in view of the considerations explained in the Draft Proposals. The outputs of the price control model are the co-efficients of the three terms in the MAR formula (i.e. a, b and c) for network businesses. In the case of ADWEC, the model produces the notified value of the fixed procurement cost term (A).

As with the model used in the Draft Proposals, the price control calculation model for the Final Proposals also reports two financial indicators for each business. These indicators for network businesses are the implied annual profit (in AED million) and the implied return (in percentage terms) on the average of the opening and closing RAVs in each year. For ADWEC, the financial indicators used are the implied annual profit (in AED million) and the implied profit margin on BST turnover (in percentage terms).

For full details of the Excel based price control calculation models, see Section 8 of the Draft Proposals.

8.3 Price Control Calculations

Appendices B through E to this paper present detailed calculations for Final Proposals for the four companies, as follows:

Table B.1 in Appendix B:	Draft price control calculations for ADWEC
Table C.1 in Appendix C:	Draft price control calculations for TRANSCO electricity business
Table C.2 in Appendix C:	Draft price control calculations for TRANSCO water business
Table D.1 in Appendix D:	Draft price control calculations for ADDC electricity business
Table D.2 in Appendix D:	Draft price control calculations for ADDC water business
Table E.1 in Appendix E:	Draft price control calculations for AADC electricity business
Table E.2 in Appendix E:	Draft price control calculations for AADC water business

Electronic versions of these calculations are available from the Bureau to companies on request.

8.4 Final Proposals and Projected Allowed Revenues

8.4.1 Notified Values

The Bureau's Final Proposals for the notified values for the regulated businesses of ADWEC, TRANSCO, ADDC and AADC are summarized in **Tables 8.2** below. These proposals are the same as calculated in **Appendices B to E** to this paper. However, the notified values here are expressed in appropriate units for clearer understanding. The notified values given in **Table 8.2** (to the accuracy expressed therein) will be those used to calculate MARs when the new price controls are implemented.

Table 8.2: Final Proposals for PC2 (Notified Values for 2003)

	Notified Values			
	X	**a** or **A**	**b**	**c**
ADWEC Procurement	0.00	10.72 AED m		
TRANSCO Electricity	0.00	522.77 AED m	44.28 AED/kW	1.05 fils/kWh
TRANSCO Water	0.00	347.75 AED m	305.57 AED/TIG	0.44 AED/TIG
ADDC Electricity	0.00	442.01 AED m	761.40 AED/customer account	0.45 fils/kWh
ADDC Water	0.00	197.56 AED m	382.74 AED/customer account	0.69 AED/TIG
AADC Electricity	0.00	235.68 AED m	1,028.83 AED/customer account	0.57 fils/kWh
AADC Water	0.00	92.74 AED m	586.50 AED/customer account	1.75 AED/TIG

8.4.2 Projected Allowed Revenues

Table 8.3 presents the projected MAR in respect of "own costs" for each business for 2003-2005 based on the proposed notified values and the forecasts or assumptions for revenue drivers adopted in this paper. (Of course, actual revenue during 2003-2005 will be different due to different actual revenue driver data and the effect of inflation on notified values).

Table 8.3: Projected Maximum Allowed Revenue for 2003-2005 (AED million, 2003 prices)

	2003	**2004**	**2005**
ADWEC Procurement	10.72	10.72	10.72
TRANSCO Electricity	725.77	800.96	895.94
TRANSCO Water	513.01	535.59	559.07
ADDC Electricity	659.41	681.49	701.59
ADDC Water	281.61	302.95	330.08
AADC Electricity	355.75	362.75	370.06
AADC Water	135.90	142.18	150.83

Note: Excludes pass-through costs.

The two financial indicators for each business as implied by the projected revenue show that the notified values will result in reasonable profit for each year and on average over the next control period.

8.5 Estimate of Effect of Final Proposals on Sector Costs

The Bureau has analysed the effect on sector electricity and water unit costs that would result from the Final Proposals. This is shown graphically (separately for electricity and water) in **Figures 8.1** and **8.2** (respectively) for 1999-2000 and 2003-2005 (figures for 2002 are not yet available).

Figure 8.1: Total Electricity MAR Unit Cost of Network & Procurement Businesses in 2003 prices

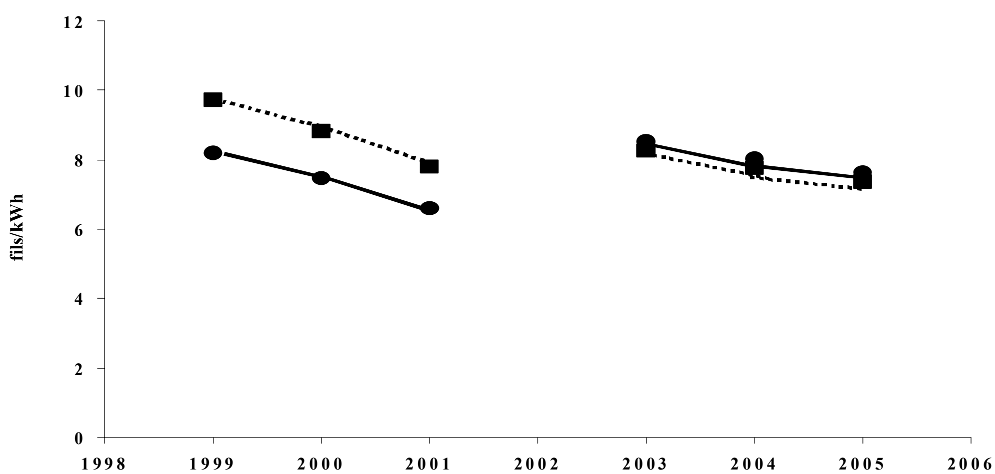
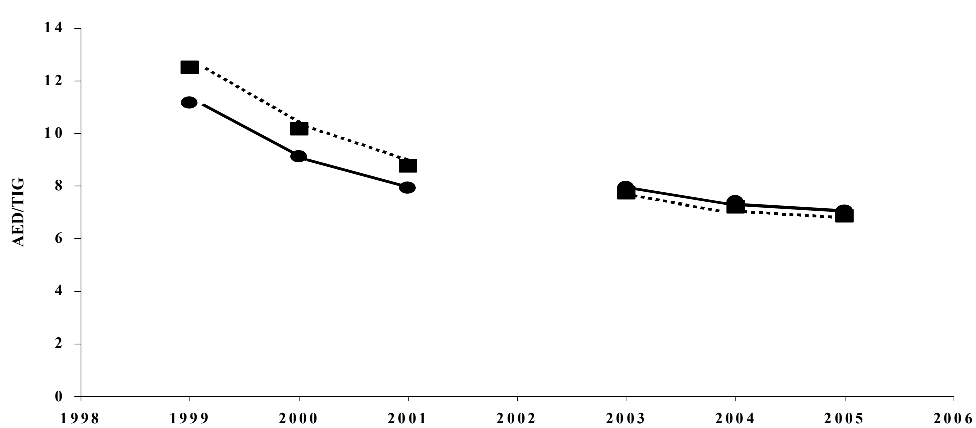


Figure 8.2: Total Water MAR Unit Cost of Network & Procurement Businesses in 2003 prices



Figures 8.1 and **8.2** show the effect solely on the unit costs (electricity and water, respectively) which are attributable to the resetting of price controls. They exclude the effect of changes in the purchase price of water and electricity (i.e. BST costs), which accounts for the majority of sector costs.

Solid lines in the above figures represent the MARs per unit under the initial price controls and revised price controls as implemented as per the Final Proposals.

The dotted lines in the above figures show the MARs per unit in the two price control periods had capital expenditure during the first control period been financed within the initial price controls.

It can be seen that in terms of price-controlled costs only, the revised price controls would continue the downward trend of sector unit costs seen since the Bureau first implemented price controls in 1999.

While there is some discontinuity in this general trend at the start of the second control period, this is explained by the fact that the capital expenditure incurred during 1999-2002 was not financed within the first controls and so has had to be financed within the second price controls (as well as 2003-2005 capital expenditures).

Had 1999-2002 capital expenditures been financed within the first price control period, unit costs over 1999-2002 (shown by dotted lines) would have been higher than the actual MARs per unit (shown by solid lines). Furthermore, unit costs over 2003-2005 (shown by dotted lines in the above figures) would have been lower than those implied by the Final Proposals set out in this paper (shown by the solid lines).

In summary, therefore, abstracting from the financing of the first control period's capital expenditure, these Final Proposals represent a continuation of the significant and ongoing reduction in the sector unit economic costs attributable to the network companies. Even though, as explained below, the Final Proposals envisage higher projected allowed revenue for the businesses than the Draft Proposals, the trends shown in the above figures are not different from those depicted in corresponding figures in the Draft Proposals.

8.6 Differences from the Draft Proposals

In general, the projected allowed revenue for each business in the Final Proposals is higher than that projected in the Draft Proposals, both on annual and overall basis. A comparison between the Draft and Final Proposals in percentage terms (taking the figures for the Draft Proposals as the base) is presented in **Table 8.4**.

Table 8.4: Projected Maximum Allowed Revenue – Comparison between Draft and Final Proposals				
Final Proposal is higher than Draft Proposal by	**2003**	**2004**	**2005**	**Overall PV Terms**
ADWEC Procurement	27%	19%	13%	20%
TRANSCO Electricity	25%	21%	17%	21%
TRANSCO Water	22%	20%	17%	20%
ADDC Electricity	11%	9%	7%	9%
ADDC Water	13%	15%	20%	16%
AADC Electricity	2%	1%	0%	1%
AADC Water	8%	3%	-4%	2%

Source: Bureau calculations

In terms of allowed revenue per unit of electricity or water supplied to the final customers, it is estimated that the total allowed revenue for all the network and procurement businesses (excluding production costs) projected by these Final Proposals will result in, on average, approximately **12%** and **16%** higher network costs per unit supplied of electricity and water respectively over the next control period compared to the allowed revenue projected in the Draft Proposals.

These higher allowed revenues and higher unit network and procurement cost than the Draft Proposals are mainly due to larger allowances for operating and capital expenditures in the Final Proposals.

Table 8.5 below compares the notified values calculated in these Final Proposals with those in the Draft Proposals. The table highlights that:

- 'X' factor remains zero for all businesses;
- the fixed term 'a' has increased significantly for all businesses, due to both increase in allowed revenue and increase in weight of this term to 65% for network businesses and to 100% for ADWEC;
- the term 'b' has also increased in all cases mainly due to increase in allowed revenue, except for ADWEC (for which this term does not apply in the Final Proposals) and AADC (for which it has reduced mainly due to higher water accounts assumptions); and
- the term 'c' has decreased significantly mainly due to reduction in the weight of this term in the revenue (from 25% to 10% for network businesses and to 0% for ADWEC). The only exception is the value of 'c' for TRANSCO's electricity business, which is lower than that in the Draft Proposals due to the projections for the revenue driver having been reduced significantly. A similar effect is evident for the ADDC's water business, however it has been offset by the increase in allowed revenue.

Table 8.5: Final Proposals for PC2 (Notified Values for 2003)

	Notified Values			
	X	**a** or **A**	**b**	**c**
ADWEC Procurement				
Draft Proposals	0.00	4.48 AED m	91.27 AED/GWh	14.34 AED/MIG
Final Proposals	0.00	10.72 AED m		
TRANSCO Electricity				
Draft Proposal	0.00	333.05 AED m	36.67 AED/kW	0.88 fils/kWh
Final Proposals	0.00	522.77 AED m	44.28 AED/kW	1.05 fils/kWh
TRANSCO Water				
Draft Proposal	0.00	223.53 AED m	255.35 AED/TIG	0.92 AED/TIG
Final Proposals	0.00	347.75 AED m	305.57 AED/TIG	0.44 AED/TIG
ADDC Electricity				
Draft Proposal	0.00	311.42 AED m	697.38 AED/customer account	1.03 fils/kWh
Final Proposals	0.00	442.01 AED m	761.40 AED/customer account	0.45 fils/kWh
ADDC Water				
Draft Proposal	0.00	130.76 AED m	329.32 AED/customer account	0.91 AED/TIG
Final Proposals	0.00	197.56 AED m	382.74 AED/customer account	0.69 AED/TIG
AADC Electricity				
Draft Proposal	0.00	180.02 AED m	1,021.62 AED/customer account	1.41 fils/kWh
Final Proposals	0.00	235.68 AED m	1,028.83 AED/customer account	0.57 fils/kWh
AADC Water				
Draft Proposal	0.00	69.81 AED m	985.48 AED/customer account	4.27 AED/TIG
Final Proposals	0.00	92.74 AED m	586.50 AED/customer account	1.75 AED/TIG

9 Performance Incentive Scheme

9.1 Introduction

9.1.1 The Draft Proposals

The Bureau has extensively consulted with the price-controlled companies as part of the 2002 Price Controls Review on the feasibility of linking important aspects of each company's performance to its price controls. By developing such links, companies can be rewarded for improved output performance and penalised for deteriorating output performance.

The Initial Consultation Paper of January 2001 first highlighted the need for formula based incentives for technical and non-technical losses on transmission and distribution systems and the need to review the interaction between quality of supply and price controls. The Bureau then proposed a more specific Performance Incentive Scheme (PIS) in the First Consultation Paper of February 2001 and, on receipt of a supportive response from the respondents to that paper, issued a separate Discussion Paper on the subject of PIS in May 2002. The PIS Discussion Paper and particularly the Draft Proposals explained the details of the Bureau's proposals on the measures of the performance, size and timing of incentives and other important aspects of the regulatory framework for the PIS.

The Bureau proposed a number of "Category A" performance indicators (indicators which should be monitored and incentivised through mechanistic annual financial adjustment under the PIS during 2003-2005) and "Category B" performance indicators (which should be kept under close monitoring during 2003-2005 so that they be ready for consideration as Category A indicators at the 2005 Price Controls Review and for also a possible financial adjustment at that review for a poor or superior performance during 2003-2005). The Bureau established proposed criteria for Category A indicators of being measurable, verifiable, non-manipulable, non-distortionary and customer-oriented.

In the Draft Proposals, the Bureau proposed:

- For ADWEC, two timeliness Category A indicators for audited accounts and audited price control returns (PCRs) and a BST timeliness Category A indicator;

- For TRANSCO, two timeliness Category A indicators for audited accounts and audited price control returns (PCRs) and an energy lost Category A indicator; and

- For ADDC and AADC, two timeliness Category A indicators for audited accounts and audited price control returns (PCRs) and a customer minutes lost (CML) Category A indicator.

9.1.2 Responses to the Draft Proposals

The following is the summary of the companies' general responses to the Draft Proposals in relation to the PIS:

1. In general, the sector companies have recognized and supported the need for the PIS concept and have highlighted a number of specific points in relation to the proposed Category A performance indicators.

2. TRANSCO has questioned whether now is the right time to introduce such a scheme and has argued that the Bureau apparently intends to apply in Abu Dhabi after just 3-4 years of unbundling a regulatory regime related to performance incentives which took over 10 years to develop in the UK.

9.1.3 Bureau's Views on Responses to Draft Proposals

The Bureau's views on the above responses are as follows:

1. In view of the support for the PIS, the Bureau has retained this scheme in the Final Proposals. However, the Bureau has modified several aspects of the PIS (including the list of Category A performance indicators) from the Draft Proposals while taking into account the companies' responses and other necessary considerations. These variations are discussed in the relevant sections below.

2. In relation to the appropriateness of the PIS at this price control review, the Bureau believes that performance of the companies on certain indicators is such that an incentive scheme seems essential at this review. Further, the Bureau considers that if a useful tool or concept has been developed in one country after a decade of efforts and research, it should not mean that other countries must also wait for another decade to apply the same concept. There are examples of countries (such as Australia and India) which did not wait for a decade after restructuring or unbundling to apply incentive schemes to performance in electricity sector. Indeed, the Bureau's proposed PIS is different from incentive schemes in other countries in detail, is focused on the particular problems faced in Abu Dhabi and may be simpler and less comprehensive in coverage than many others.

9.1.4 The Final Proposals

For these Final Proposals, the Bureau has retained the concept of the PIS, but with some modifications to the regulatory framework, performance indicators and incentive rates. These modifications are clarified in the relevant sections below. In essence, the Bureau has removed the BST timeliness indicator for ADWEC, the Energy Lost indicator for TRANSCO and the CML indicator for Discos from Category A, and moved them to Category B. These removals leave only two timeliness indicators for each business in Category A and hence allow the performance in year t to be rewarded through revenue adjustment in year 't+1' (instead of 't+2' in the Draft Proposals). The removal of some performance indicators from Category A and the increase in the allowed revenues under the Final Proposals have also resulted in an increase in incentive rates for remaining Category A indicators.

9.2 Regulatory Framework

The Draft Proposals discussed a number of practical issues in relation to the regulatory framework for the design of the PIS and made various proposals. As a result of the companies' responses to the Draft Proposals and the Bureau's consideration of other related issues, the Bureau has modified several aspects of the PIS regulatory framework, as set out below:

9.2.1 Timing of Revenue Adjustment

In the Draft Proposals, the Bureau proposed that the performance in year t should be rewarded through an annual adjustment to revenue in year t+2.

The main reason for t+2 proposal was to allow adequate time for collection, analysis, verification and audit of the data on Category A technical indicators (energy lost and customer minutes lost). With the removal of the technical indicators from Category A, a 't+1' approach is now feasible. That is, *the performance in year t should be rewarded through an annual adjustment to the revenue in year t+1*. This will allow the term 'Q' to be calculated in the PCR for year 't' due in year 't+1'.

9.2.2 Scale of Incentives

In the Draft Proposal, the Bureau proposed to alter the symmetric nature of scale of incentives for some performance indicators, while retaining appropriate rewards for timely compliance. (It was not thought appropriate for the timeliness performance indicators to give incentives for companies to publish the relevant statements before they are required to do by their licences.)

In the absence of any objection to this suggestion, the Bureau has continued with this approach. However, as with the Draft Proposals, the total rewards and penalties for each indicator based on hypothetical performance remains symmetric.

9.2.3 Setting Targets for Performance

The Draft Proposal was that the targets for technical performance indicators should be set on the basis of companies' past or current performance and for timeliness indicators as per the glide-path approach.

Now with only timeliness indicators in Category A, only glide-path targets will apply. The glide-path target dates for audited accounts and audited Price Control Returns (PCRs) is structured in a way that by the end of the next control period (i.e. by 2005), the sector companies must be able to comply with the target dates set out in the licences for these statements.

None of the companies has objected to the glide-path targets. However, ADWEC has stated that it is still not convinced by the Bureau's examples of six banks and three other companies in the UAE for audited accounts and returns. According to ADWEC, this is because of the well-established financial environment under which these companies work and staff resources devoted to accounting.

Nonetheless ADWEC has considered itself up to speed with its financial accounts and that it can present them for timely auditing.

These examples were given in response the company's earlier views, to show that submission of audited accounts or returns on or before the licence target dates is possible and achievable in UAE. While the Bureau does not fully agree with the implied conclusion of ADWEC that the well-established financial environment enable these other companies to produce audited accounts (as both are inter-dependent), the Bureau again highlights here that its examples were not related to only banks and insurance companies (which are considered as financial institutions). Two of the examples (a real estate company and a district cooling company) are not financial institutions as such. The Bureau also notes that ADWEC has not commented on the legal requirements on timely audited accounts of public and private joint stock companies.

In view of the above, the Bureau has retained the same glide-path targets for the Final Proposals as were set out in the Draft Proposals.

9.2.4 Size of Incentives

The Draft Proposals explained the Bureau's methodology to calculate the size of the reward or penalty on the basis of the allocation of the 2% cap on incentives between different Category A performance indicators.

The Bureau has not received any objection to the above methodology, which has therefore been retained for the Final Proposals.

9.2.5 Cap on Incentives

In the Draft Proposals, the Bureau proposed that the total annual rewards and penalties for each company should be capped at 2% of their 'own' annual revenue, i.e., ADWEC's procurement cost, TRANSCO's total price control revenue and Discos' distribution and supply related revenue.

This 2% cap on total incentives has been retained for the Final Proposals in the absence of any concerns on this suggestion in response to the Draft Proposals.

9.2.6 Exceptional Events

In the Draft Proposals, the Bureau proposed that certain exceptional events should be excluded from the PIS if they meet the necessary criteria. However, any action or inaction of ADWEA or the impact thereof would not be considered as an 'exceptional event'.

These exceptional events were intended for the technical performance indicators (Energy Lost and CML), and for the BST timeliness indicator. Since these indicators are no more in Category A, the Bureau sees no need for the concept of exceptional events. The Bureau believes that that preparation of audited accounts and PCRs are in full control of the companies' management and/or their owner.

Where certain items are uncertain, accounting standards allow for the accounts to be closed even if a provision needs to be made for such items.

9.2.7 Performance Audit

The Draft Proposals set out the mechanism for the opinion or certificate of an independent suitably qualified professional firm approved by the Bureau on the robustness and accuracy of Category A technical performance indicators. As specifically stated in the Draft Proposals, this certification mechanism was not proposed to be applied to timeliness performance indicators on which accurate information will be readily available to the Bureau (as the recipient of such documents).

With no technical indicator in Category A of the PIS, the Bureau sees no need for the performance audit mechanism set out in the Draft Proposals.

9.2.8 Addition of 'Q' term to Price Control Formulas

None of the companies has objected to the addition of a new term "Q" to the current MAR formulae for companies to supplement the CPI-X price controls by the PIS. The Bureau has therefore adopted the "Q" term approach for the Final Proposals. However, as discussed earlier, the "Q" term will adjust the MAR of year "t" for the performance exhibited during year "t-1" (instead of year "t-2" as proposed in the Draft Proposals).

The term Q_t, the performance adjustment to revenue for year t for any business, is calculated in AED terms according to the following formula:

$$Q_t = Q1_t + Q2_t$$

where

$Q1_t$ is the revenue adjustment in year t reflecting total reward or penalty for performance in year t-1 in respect of timeliness of submission of audited accounts for the relevant business to the Bureau against the target date; and

$Q2_t$ is the revenue adjustment in year t reflecting total reward or penalty for performance in year t-1 in respect of timeliness of submission of audited price control return (PCR) for the relevant business to the Bureau against the target date.

There will be separate Q terms for the separate water and electricity price controls of network companies, representing the revenue adjustments for water and electricity business-related performance indicators. Performance indicators on timeliness of audited accounts and audited PCR for the water businesses will be reflected in the Q terms of water price controls and those for the electricity businesses in the Q terms of electricity price controls.

9.3 Performance Indicators

9.3.1 The Draft Proposals

In the Draft Proposals, the Bureau proposed the following Category A performance indicators for ADWEC and electricity and water businesses of TRANSCO, ADDC and AADC:

1. Audited Accounts Timeliness indicator for ADWEC and for separate electricity and water business of TRANSCO, ADDC and AADC;

2. Audited PCR Timeliness indicator for ADWEC and for separate electricity and water business of TRANSCO, ADDC and AADC;

3. BST Timeliness indicator for ADWEC;

4. Energy Lost indicator for electricity business of TRANSCO; and

5. Customer Minutes Lost (CML) indicator for electricity businesses of ADDC and AADC.

The Bureau also proposed a number of Category B indicators, which were listed in Appendix G of the Draft Proposals.

9.3.2 Responses to Draft Proposals

A summary of companies' responses to the Draft Proposals is as follows:

1. TRANSCO has not specifically objected to the proposed Energy Lost indicator for its electricity business. However, it has expressed strong concerns on the Bureau's comparison of TRANSCO's performance with that of three UK companies in relation to this indicator. Besides various other reasons, TRANSCO has highlighted N-2 design criteria of the UK's National Grid Company (NGC) against N-1 criteria generally used by TRANSCO as the main reason for difference in performance.

2. ADWEC has raised two arguments against the BST timeliness indicator proposed in the Draft Proposals. First, ADWEC considered it possibly discriminatory to include an indicator for a charges statement for ADWEC (i.e. BST) but not similar statements for TRANSCO. Second, ADWEC is concerned that if the BST is delayed then the Bureau will itself assess the extent of its own role (if any) in the delay.

3. ADWEC has also raised some concerns on the audited accounts and PCRs related timeliness indicators. In addition to its concerns on the Bureau's examples of other UAE companies, ADWEC has highlighted the possible delays in audited accounts due to the Abu Dhabi Finance Department and disputed amounts with other companies.

9.3.3 Bureau's Views on Responses to Draft Proposals

The Bureau's views on the responses to the Draft Proposals are as follows:

1. Although the Bureau did not pass any judgement on TRANSCO's performance while comparing it with other companies, the Bureau agrees with TRANSCO that an assessment of TRANSCO's performance against any other company should be made keeping in view all related factors, such as N-d criteria for other UK companies and other factors such as the age and size of each network. The Bureau does not consider most of other reasons cited by TRANSCO for difference of performance are outside of TRANSCO's full control.

   Notwithstanding the above, the Bureau has not been able to satisfy itself on the current accuracy of measurement of the technical indicators (Energy Lost and particularly the CML) for the purposes of a mechanistic link to the price controls. The Bureau has therefore removed these indicators from Category A to Category B for the Final Proposal.

2. The Bureau considers that the charges statement for ADWEC and TRANSCO are of a different nature, complexity and importance (TRANSCO's statements of charges are further discussed below). Second, the detailed timetable agreed between ADWEC and the Bureau for the preparation of the BST should automatically point to the reasons for delays, as the present timetable for 2003 BST is performing its function. However, the Bureau has also taken into consideration possible future changes to the BST calculations (which need discussion with ADWEC) which intend to simplify and improve the BST calculations on one hand and may make it difficult to set out in advance a detailed timetable for future BSTs.

   Based on ADWEC's response and its above considerations, the Bureau has decided to move the BST timeliness indicator from Category A to Category B.

3. ADWEC's concerns on the Bureau's examples of the UAE companies have been discussed earlier in Section 9.2.3 above. In respect of other concerns, the Bureau does not understand why the Abu Dhabi Finance Department should cause any delay to ADWEC's accounts. Further, the Bureau believes that the disputed amounts with other companies can be handled without delaying the audited accounts. There are accounting standards and disclosure requirements, which can provide solutions to these problems.

   Therefore, the Bureau does not agree with ADWEC that the audited accounts and PCRs related timeliness indicators or their target dates are not achievable or beyond companies' control. Indeed, the glide-path approach to set target dates has been proposed by ADWEC and accepted by the Bureau is intended to address issues such as those discussed above.

As indicated in the Draft Proposals, the Bureau has been discussing with TRANSCO the Statements of Connection and Use of System Charges. In fact, TRANSCO has submitted the first drafts of these statement by the proposed target date of 30th September. The Bureau has provided its comments to TRANSCO on these drafts and expects that TRANSCO will be able to publish the Bureau's approved statements by 31st December 2002. Once these statements are published for 2003, their further revisions and improvements should not be a difficult task. In view of this progress, the Bureau has not included a timeliness indicator for these statements in Category A, though it will remain under monitoring as a Category B indicator.

9.3.4 The Final Proposals

In view of the above, for the Final Proposals the Bureau has kept only two performance indicators in Category A for the PIS for each business. These indicators are common between the companies and are related to audited accounts and PCRs, which the Bureau considers vital to effective regulation of the sector. The BST timeliness indicator for ADWEC, the Energy Lost for TRANSCO's electricity business and the Customer Minutes Lost (CML) for the distribution companies should now be considered as Category B, along with other outputs listed in Appendix G of the Draft Proposals.

The Category A performance indicators for the Final Proposals are defined as follows:

- **Audited Accounts Timeliness** for any company is the difference (measured in months) between the actual date and the glide-path target date for submission to the Bureau of audited accounts for the relevant business for the preceding year.

- **Audited Price Control Return (PCR) Timeliness** for any company is the difference (measured in months) between the actual date and the glide-path target date for submission to the Bureau of audited PCR for the relevant business for the preceding year.

9.4 Target Dates for Category A Performance Indicators

Tables 9.1 and **9.2** show the Bureau's target dates for Category A performance indicators for ADWEC and the network companies, respectively.

It can be seen that the Bureau has continued with the same target dates for the performance indicators as were proposed in the Draft Proposals. These targets dates for submission of audited accounts and audited PCRs under the PIS are set on a glide-path approach keeping in view the present performance of the companies. The glide-path targets are such that, by the end of the next control period (i.e. by 2005), companies must be able to meet the target dates set by their licences. Like the licence target dates, the proposed glide-path target dates are the same for all the four companies. Further, the first set of audited accounts and PCRs are not scheduled (for the purposes for this Scheme) until December 2003, which provides ample time for the management/shareholder of the companies to resolve any impediments there may have been to date in getting the statements audited.

Table 9.1: Category A Performance Indicators for ADWEC – Final Proposals					
S. No.	**Performance Indicator**	**Formula Year**	**Performance Measure**	**Licence Target Date**	**Glide-Path Target Date for PIS**
1	Audited Accounts Timeliness		Audited accounts for:		
		2003	2002	30-Jun-03	31-Dec-03
		2004	2003	30-Jun-04	30-Sep-04
		2005	2004	30-Jun-05	30-Jun-05
2	Audited Price Control Return (PCR) Timeliness		Audited PCR for:		
		2003	2002	31-Mar-03	30-Sep-03
		2004	2003	31-Mar-04	30-Jun-04
		2005	2004	31-Mar-05	31-Mar-05

Table 9.2: Category A Performance Indicators for TRANSCO, ADDC & AADC – Final Proposals					
S. No.	**Performance Indicator**	**Formula Year**	**Performance Measure**	**Licence Target Date**	**Glide-Path Target Date for PIS**
1	Audited Electricity Accounts Timeliness		Audited accounts for:		
		2003	2002	30-Jun-03	31-Dec-03
		2004	2003	30-Jun-04	30-Sep-04
		2005	2004	30-Jun-05	30-Jun-05
2	Audited Water Accounts Timeliness		Audited accounts for:		
		2003	2002	30-Jun-03	31-Dec-03
		2004	2003	30-Jun-04	30-Sep-04
		2005	2004	30-Jun-05	30-Jun-05
3	Audited Electricity Price Control Return (PCR) Timeliness		Audited PCR for:		
		2003	2002	31-Mar-03	30-Sep-03
		2004	2003	31-Mar-04	30-Jun-04
		2005	2004	31-Mar-05	31-Mar-05
4	Audited Water Price Control Return (PCR) Timeliness		Audited PCR for:		
		2003	2002	31-Mar-03	30-Sep-03
		2004	2003	31-Mar-04	30-Jun-04
		2005	2004	31-Mar-05	31-Mar-05

9.5 Performance Incentive Rates

9.5.1 The Overall Approach

For the Final Proposals, consistent with the approach used in the Draft Proposals, the Bureau has calculated the incentive rates for Category A performance indicators for the four companies as follows:

- The maximum penalty or reward under the PIS has been calculated by applying 2% to the forecast MAR (in relation to "own costs") of each business for 2004.

- The resulting amount has been equally apportioned to the two performance indicators in the PIS of the business concerned.

- The incentive rate for each indicator has been derived by dividing the relevant amount apportioned as above by the variance between target performance and hypothetical worst-case actual performance (i.e. 6 month delay beyond glide-path target date).

- The same incentive rates are then employed in each of 2003, 2004 and 2005.

9.5.2 Incentive Rates

See **Table 9.3** below for various intermediate and final results of the above calculations. The resulting incentive rates for all the performance indicators of each company (same for each year of the next control period) are presented in the last column of **Table 9.3**, which have been rounded to the nearest thousand Dirhams. The incentive rates for the timeliness indicators are the payments expressed in AED per month of delay. A slight different treatment is applied in 2003, 2004 and 2005 to calculate reward or penalty, as explained in Section 9.6 of this paper. For the purpose of this Scheme, anything received by the Bureau up to 15^{th} day of a month will be regarded as having been received by the last day of the previous month.

The incentive rates shown in the last column of **Table 9.3** will not change during the next control period and will be independent of the assumptions underlying their calculations. That is, the assumptions (set out in **Table 9.3** above) have been used solely in calculating the fixed incentive rates and will be of no significance during the implementation of the PIS or price controls in 2003-2005.

Table 9.3: Calculation of Incentive Rate for Each Category A Indicator - Final Proposals*						
Company /Business	**Total Amount at Stake for PIS**	**Performance Indicator**	**Weights in the PIS**	**Total Incentive Amount**	**Incentive Rate** (2003-2005)**	
ADWEC	AED 214,376	Audited Accounts	50%	AED 107,188	18,000	AED p.m.
		Audited PCR	50%	AED 107,188	18,000	AED p.m.
TRANSCO (E)	AED 16,019,130	Audited Accounts (E)	50%	AED 8,009,565	1,335,000	AED p.m.
		Audited PCR (E)	50%	AED 8,009,565	1,335,000	AED p.m.
TRANSCO (W)	AED 10,711,868	Audited Accounts (W)	50%	AED 5,355,934	893,000	AED p.m.
		Audited PCR (W)	50%	AED 5,355,934	893,000	AED p.m.
ADDC (E)	AED 13,629,758	Audited Accounts (E)	50%	AED 6,814,879	1,136,000	AED p.m.
		Audited PCR (E)	50%	AED 6,814,879	1,136,000	AED p.m.
ADDC (W)	AED 6,059,064	Audited Accounts (W)	50%	AED 3,029,532	505,000	AED p.m.
		Audited PCR (W)	50%	AED 3,029,532	505,000	AED p.m.
AADC (E)	AED 7,255,007	Audited Accounts (E)	50%	AED 3,627,503	605,000	AED p.m.
		Audited PCR (E)	50%	AED 3,627,503	605,000	AED p.m.
AADC (W)	AED 2,843,595	Audited Accounts (W)	50%	AED 1,421,798	237,000	AED p.m.
		Audited PCR (W)	50%	AED 1,421,798	237,000	AED p.m.

* E = Electricity; W = Water; p.m. = per month of delay or acceleration
** Incentive rates are rounded to the nearest thousand after calculation from total incentive amounts.

In all cases (except for AADC's water business), the incentive rates have increased from the Draft Proposals, due to two reasons: first, the allowed revenue for each business has increased in the Final Proposals; and second, the number of Category A performance indicators has been reduced to two in each case.

9.6 Operation of Scheme

Based on the targets and incentive rates as set out in **Tables 9.1-9.2** and **Table 9.3**, respectively, the following incentive schemes will apply to each timeliness indicator of each company or business under the new price controls:

- **For all "timeliness" indicators in all the years**, in case of any delay beyond the glide-path target date, the company will receive a **penalty** equal to the monthly incentive rate (see **Table 9.3**) multiplied by the number of months by which the audited accounts or audited PCRs are late in comparison with the glide-path target date.

  That is, penalty for delay is given by the following formula ('Q' term will automatically take a negative sign for delays):

  Q Term = Incentive Rate × (Glide-path target date - Actual month achieved)

- **For all "timeliness" indicators in 2003 and 2004**, the company will receive a **reward** equal to the product of (i) the monthly incentive rate in case of 2003, or twice of the monthly incentive rate in case of 2004, and (ii) the number of months by which the audited accounts or PCRs are early in comparison with the glide-path target date.

  That is, reward for 2003:

  $$\text{Q Term} = \text{Incentive Rate} \times (\text{Glide-path target date - Actual month of submission})$$

  and reward for 2004:

  $$\text{Q Term} = 2 \times \text{Incentive Rate} \times (\text{Glide-path target date - Actual month of submission})$$

- **For all "timeliness" indicators in 2005**, if the company meets the target date it will receive a **reward** equal to six times the monthly incentive rate. That is:

  $$\text{Q Term} = 6 \times \text{Incentive Rate}$$

- The maximum delay in ***any "timeliness" indicator*** will be capped at the penalty that would be incurred if the audited accounts or PCRs was submitted or published on the glide-path target date for the same indicator for the following year.

- The maximum reward for ***any "timeliness" indicator*** will be capped by the licence target date.

- For the purpose of all the "timeliness" indicators, the number of "months" shall be calculated assuming the date of submission of audited account or PCRs to the Bureau as the last day of the previous month if such audited accounts or PCRs are received by the Bureau on or before the 15^{th} day of a month, or as the last day of a month if such audited accounts or PCRs are received by the Bureau after the 15^{th} day of the month but before the end of the month. (This proposal, which effectively gives companies a further 15 days 'grace period' on top of the glide-path target dates, represents a minor change from the Draft Proposals.)

- The total reward or penalty under the PIS for any company (the "Q" term in its price control formula) for performance in any year (say 't') will be capped at 2% of the maximum allowed revenue in relation to its 'own' cost in that year ('t') ("own" costs being procurement cost, transmission costs, and distribution and supply costs, in relation to ADWEC, TRANSCO and ADDC/AADC, respectively).

Appendix A: Updating Regulatory Asset Values (RAVs)

Table A.1: TRANSCO Electricity - Updating RAVs

Inputs	**1998**	**1999**	**2000**	**2001**	**2002**
Provisional figure for new investment (AEDm, 1999 prices)		**344.17**	**533.79**	**795.29**	**1222.50**
Historical CPI (1995 = 100)	**106.9**	**109.2**	**110.7**	**113.1**	**n/a**
Forecast CPI (1995 = 100)		**n/a**	**n/a**	**n/a**	**114.7**
Initial (1 January 1999) RAV (AED m, 1999 prices)	**2,907.10**				
Depreciation on Initial RAV (AED m, 1999 prices)	**115.1**				
Assumed average asset life for new investment (years)	30				
Cost of capital (real)	6.00%				

Calculation of PCR1 Closing RAV (excluding PCR1 Financing Costs Foregone)

1999 prices	**1999**	**2000**	**2001**	**2002**
Opening RAV	2,907.1	3,124.7	3,514.1	4,138.5
Depreciation on Initial (1 January 1999) RAV	115.1	115.1	115.1	115.1
New investment	344.2	533.8	795.3	1,222.5
New investment 1999 to date	344.2	878.0	1,673.3	2,895.7
Depreciation on new investment 1999 to date	11.5	29.3	55.8	96.5
Closing RAV (excluding PCR1 Financing Costs Foregone)	3,124.7	3,514.1	4,138.5	5,149.4

Calculation of PCR1 Financing Costs Foregone

1999 prices	**1999**	**2000**	**2001**	**2002**
Depreciation foregone	11.5	29.3	55.8	96.5
Return on capital foregone	20.7	52.7	100.4	173.7
Total financing costs foregone	32.1	81.9	156.2	270.3
Years from year mid point to 1 Jan 2003	3.5	2.5	1.5	0.5
NPV @ 1 Jan 2003 of financing costs foregone	39.4	94.8	170.4	278.3
Accumulated NPV (@ 1 Jan 2003) of financing costs foregone	39.4	134.2	304.6	582.9

PCR Closing RAV (including PCR1 Financing Costs Foregone)

in 1999 Prices	5,732.29
in 2003 Prices	**6,150.55**

Total Depreciation (Initial Depreciation and Depreciation on New Investment)

in 1999 Prices	211.62
in 2003 Prices	**227.07**

Table A.2: TRANSCO Water - Updating RAVs

Inputs	1998	1999	2000	2001	2002
Provisional figure for new investment (AEDm, 1999 prices)		**118.74**	**123.46**	**92.11**	**289.04**
Historical CPI (1995 = 100)	**106.9**	**109.2**	**110.7**	**113.1**	**n/a**
Forecast CPI (1995 = 100)		**n/a**	**n/a**	**n/a**	**114.7**
Initial (1 January 1999) RAV (AED m, 1999 prices)	**2,053.19**				
Depreciation on Initial RAV (AED m, 1999 prices)	**113.65**				
Assumed average asset life for new investment (years)	30				
Cost of capital (real)	6.00%				

Calculation of PCR1 Closing RAV (excluding PCR1 Financing Costs Foregone)

1999 prices	1999	2000	2001	2002
Opening RAV	2,053.2	2,054.3	2,056.1	2,023.4
Depreciation on Initial (1 January 1999) RAV	113.6	113.6	113.6	113.6
New investment	118.7	123.5	92.1	289.0
New investment 1999 to date	118.7	242.2	334.3	623.3
Depreciation on new investment 1999 to date	4.0	8.1	11.1	20.8
Closing RAV (excluding PCR1 Financing Costs Foregone)	2,054.3	2,056.1	2,023.4	2,178.0

Calculation of PCR1 Financing Costs Foregone

1999 prices	1999	2000	2001	2002
Depreciation foregone	4.0	8.1	11.1	20.8
Return on capital foregone	7.1	14.5	20.1	37.4
Total financing costs foregone	11.1	22.6	31.2	58.2
Years from year mid point to 1 Jan 2003	3.5	2.5	1.5	0.5
NPV @ 1 Jan 2003 of financing costs foregone	13.6	26.1	34.1	59.9
Accumulated NPV (@ 1 Jan 2003) of financing costs foregone	13.6	39.7	73.8	133.7

PCR Closing RAV (including PCR1 Financing Costs Foregone)	
in 1999 Prices	2,311.68
in 2003 Prices	**2,480.35**

Total Depreciation (Initial Depreciation and Depreciation on New Investment)	
in 1999 Prices	134.42
in 2003 Prices	**144.23**

Table A.3: ADDC Electricity - Updating RAVs

Inputs	1998	1999	2000	2001	2002
Provisional figure for new investment (AEDm, 1999 prices)		196.51	300.86	398.34	389.89
Historical CPI (1995 = 100)	106.9	109.2	110.7	113.1	n/a
Forecast CPI (1995 = 100)		n/a	n/a	n/a	114.7
Initial (1 January 1999) RAV (AED m, 1999 prices)	2,939.20				
Depreciation on Initial RAV (AED m, 1999 prices)	130.95				
Assumed average asset life for new investment (years)	30				
Cost of capital (real)	6.00%				

Calculation of PCR1 Closing RAV (excluding PCR1 Financing Costs Foregone)

1999 prices	1999	2000	2001	2002
Opening RAV	2,939.2	2,998.2	3,151.5	3,389.1
Depreciation on Initial (1 January 1999) RAV	131.0	131.0	131.0	131.0
New investment	196.5	300.9	398.3	389.9
New investment 1999 to date	196.5	497.4	895.7	1,285.6
Depreciation on new investment 1999 to date	6.6	16.6	29.9	42.9
Closing RAV (excluding PCR1 Financing Costs Foregone)	2,998.2	3,151.5	3,389.1	3,605.2

Calculation of PCR1 Financing Costs Foregone

1999 prices	1999	2000	2001	2002
Depreciation foregone	6.6	16.6	29.9	42.9
Return on capital foregone	11.8	29.8	53.7	77.1
Total financing costs foregone	18.3	46.4	83.6	120.0
Years from year mid point to 1 Jan 2003	3.5	2.5	1.5	0.5
NPV @ 1 Jan 2003 of financing costs foregone	22.5	53.7	91.2	123.5
Accumulated NPV (@ 1 Jan 2003) of financing costs foregone	22.5	76.2	167.4	291.0

PCR Closing RAV (including PCR1 Financing Costs Foregone)	
in 1999 Prices	3,896.12
in 2003 Prices	**4,180.40**

Total Depreciation (Initial Depreciation and Depreciation on New Investment)	
in 1999 Prices	173.80
in 2003 Prices	**186.48**

Table A.4: ADDC Water - Updating RAVs

Inputs	**1998**	**1999**	**2000**	**2001**	**2002**
Provisional figure for new investment (AEDm, 1999 prices)		**69.11**	**44.92**	**130.47**	**380.71**
Historical CPI (1995 = 100)	**106.9**	**109.2**	**110.7**	**113.1**	**n/a**
Forecast CPI (1995 = 100)		**n/a**	**n/a**	**n/a**	**114.7**
Initial (1 January 1999) RAV (AED m, 1999 prices)	**845.56**				
Depreciation on Initial RAV (AED m, 1999 prices)	**57.13**				
Assumed average asset life for new investment (years)	30				
Cost of capital (real)	6.00%				

Calculation of PCR1 Closing RAV (excluding PCR1 Financing Costs Foregone)

1999 prices	**1999**	**2000**	**2001**	**2002**
Opening RAV	845.6	855.2	839.2	904.4
Depreciation on Initial (1 January 1999) RAV	57.1	57.1	57.1	57.1
New investment	69.1	44.9	130.5	380.7
New investment 1999 to date	69.1	114.0	244.5	625.2
Depreciation on new investment 1999 to date	2.3	3.8	8.1	20.8
Closing RAV (excluding PCR1 Financing Costs Foregone)	855.2	839.2	904.4	1,207.2

Calculation of PCR1 Financing Costs Foregone

1999 prices	**1999**	**2000**	**2001**	**2002**
Depreciation foregone	2.3	3.8	8.1	20.8
Return on capital foregone	4.1	6.8	14.7	37.5
Total financing costs foregone	6.4	10.6	22.8	58.4
Years from year mid point to 1 Jan 2003	3.5	2.5	1.5	0.5
NPV @ 1 Jan 2003 of financing costs foregone	7.9	12.3	24.9	60.1
Accumulated NPV (@ 1 Jan 2003) of financing costs foregone	7.9	20.2	45.1	105.2

PCR Closing RAV (including PCR1 Financing Costs Foregone)	
in 1999 Prices	1,312.35
in 2003 Prices	**1,408.11**

Total Depreciation (Initial Depreciation and Depreciation on New Investment)	
in 1999 Prices	77.97
in 2003 Prices	**83.66**

Table A.5: AADC Electricity - Updating RAVs

Inputs	1998	1999	2000	2001	2002
Provisional figure for new investment (AEDm, 1999 prices)		**188.68**	**188.68**	**188.68**	**188.68**
Historical CPI (1995 = 100)	**106.9**	**109.2**	**110.7**	**113.1**	**n/a**
Forecast CPI (1995 = 100)		**n/a**	**n/a**	**n/a**	**114.7**
Initial (1 January 1999) RAV (AED m, 1999 prices)	**1,516.14**				
Depreciation on Initial RAV (AED m, 1999 prices)	**78.78**				
Assumed average asset life for new investment (years)	30				
Cost of capital (real)	6.00%				

Calculation of PCR1 Closing RAV (excluding PCR1 Financing Costs Foregone)

1999 prices	1999	2000	2001	2002
Opening RAV	1,516.1	1,619.7	1,717.1	1,808.1
Depreciation on Initial (1 January 1999) RAV	78.8	78.8	78.8	78.8
New investment	188.7	188.7	188.7	188.7
New investment 1999 to date	188.7	377.4	566.0	754.7
Depreciation on new investment 1999 to date	6.3	12.6	18.9	25.2
Closing RAV (excluding PCR1 Financing Costs Foregone)	1,619.7	1,717.1	1,808.1	1,892.8

Calculation of PCR1 Financing Costs Foregone

1999 prices	1999	2000	2001	2002
Depreciation foregone	6.3	12.6	18.9	25.2
Return on capital foregone	11.3	22.6	34.0	45.3
Total financing costs foregone	17.6	35.2	52.8	70.4
Years from year mid point to 1 Jan 2003	3.5	2.5	1.5	0.5
NPV @ 1 Jan 2003 of financing costs foregone	21.6	40.7	57.7	72.5
Accumulated NPV (@ 1 Jan 2003) of financing costs foregone	21.6	62.3	120.0	192.5

PCR Closing RAV (including PCR1 Financing Costs Foregone)

in 1999 Prices	2,085.34
in 2003 Prices	**2,237.50**

Total Depreciation (Initial Depreciation and Depreciation on New Investment)

in 1999 Prices	103.94
in 2003 Prices	**111.52**

Table A.6: AADC Water - Updating RAVs

Inputs	**1998**	**1999**	**2000**	**2001**	**2002**
Provisional figure for new investment (AEDm, 1999 prices)		**66.35**	**66.35**	**66.35**	**66.35**
Historical CPI (1995 = 100)	**106.9**	**109.2**	**110.7**	**113.1**	**n/a**
Forecast CPI (1995 = 100)		**n/a**	**n/a**	**n/a**	**114.7**
Initial (1 January 1999) RAV (AED m, 1999 prices)	**129.32**				
Depreciation on Initial RAV (AED m, 1999 prices)	**3.85**				
Assumed average asset life for new investment (years)	30				
Cost of capital (real)	6.00%				

Calculation of PCR1 Closing RAV (excluding PCR1 Financing Costs Foregone)

1999 prices	**1999**	**2000**	**2001**	**2002**
Opening RAV	129.3	189.6	247.7	303.5
Depreciation on Initial (1 January 1999) RAV	3.9	3.9	3.9	3.9
New investment	66.3	66.3	66.3	66.3
New investment 1999 to date	66.3	132.7	199.0	265.4
Depreciation on new investment 1999 to date	2.2	4.4	6.6	8.8
Closing RAV (excluding PCR1 Financing Costs Foregone)	189.6	247.7	303.5	357.2

Calculation of PCR1 Financing Costs Foregone

1999 prices	**1999**	**2000**	**2001**	**2002**
Depreciation foregone	2.2	4.4	6.6	8.8
Return on capital foregone	4.0	8.0	11.9	15.9
Total financing costs foregone	6.2	12.4	18.6	24.8
Years from year mid point to 1 Jan 2003	3.5	2.5	1.5	0.5
NPV @ 1 Jan 2003 of financing costs foregone	7.6	14.3	20.3	25.5
Accumulated NPV (@ 1 Jan 2003) of financing costs foregone	7.6	21.9	42.2	67.7

PCR Closing RAV (including PCR1 Financing Costs Foregone)

in 1999 Prices	424.90
in 2003 Prices	**455.90**

Total Depreciation (Initial Depreciation and Depreciation on New Investment)

in 1999 Prices	12.70
in 2003 Prices	**13.62**

Appendix B: Price Control Calculations for ADWEC

Table B.1: Draft Proposal Price Control Calculations for ADWEC

Line	(all amounts are in 2003 prices)		2003	2004	2005		
	Inputs		**2003**	**2004**	**2005**		
1	Operating expenditure allowance (AED , 2003 prices)		9,798,177	9,798,177	9,798,177		
2.1	Turnover (AED , 2002 prices)		3,217,916,040	3,627,659,362	4,071,606,130		
2.2	Turnover (AED , 2003 prices)		3,271,220,665	3,687,751,366	4,139,052,091		
2.3	Profit Margin on Turnover (%)	0.025%					
2.4	Profit on Turnover (AED , 2003 prices)		817,805	921,938	1,034,763		
9	Cost of Capital (real)	6.00%					
13	X Factor	0.00					
	PCR2 Required Revenue Calculations						
	PCR2 Discounted Costs		**2003**	**2004**	**2005**	**TOTAL**	
20	Discounted operating expenditure		9,516,831	8,978,142	8,469,945	26,964,918	
22	Discounted profit on turnover		794,323	844,778	894,492	2,533,593	
23	**Total discounted costs (= revenue requirement) (AED)**		10,311,153	9,822,921	9,364,437	**29,498,511**	
	PCR 2 Revenue Forecast		**2003**	**2004**	**2005**	**PV Share in TOTAL**	
36	Notified Value (A): Annual revenue (AED m)		10,718,802	10,718,802	10,718,802	**TOTAL**	Difference
37	**Discounted annual revenue (AED)**		10,411,021	9,821,718	9,265,772	**29,498,511**	**(0.00)**
			Variables for Solver Run				Target for Solver Run
	PCR2 Implied Financial Indicators		**2003**	**2004**	**2005**	**Average**	
38	Implied annual profit (AED, 2003 prices)		920,625	920,625	920,625	920,625	
39	Implied profit margin on turnover (%)		0.0281%	0.0250%	0.0222%	0.0251%	
	PCR2 Notified Values		**2003**				
40	X Factor		0.0				
41	Notified Value (A)		10,718,802 AED				

Appendix C: Price Control Calculations for TRANSCO

Table C.1: Draft Proposal Price Control Calculations for TRANSCO (Electricity)

Line	(all amounts are in 2003 prices)				2003	2004	2005		
	Inputs				**2003**	**2004**	**2005**		
1	Operating expenditure allowance (AED m, 2003 prices)				96.81	96.81	96.81		
2	Provisional figure for new investment (AEDm, 2003 prices)				1,267.79	730.38	346.04		
3	Forecast for revenue driver 1				1.0	1.0	1.0		
4	Forecast for revenue driver 2 (MW)				4,056	4,519	5,109		
5	Forecast for revenue driver 3 (GWh metered)				2,230	7,440	14,000		
6	Opening (1 January 2003) RAV (AED m, 2003 prices)			6,150.55					
7	Depreciation on Initial RAV (AED m, 2003 prices)			227.07					
8	Assumed average asset life for new investment (years)			30					
9	Cost of capital (real)			6.00%					
10	Weight in revenue for Revenue driver 1			65.00%					
11	Weight in revenue for Revenue driver 2			25.00%					
12	Weight in revenue for Revenue driver 3			10.00%					
13	X Factor			0.00					
	PCR2 Required Revenue Calculations								
	PCR2 RAV Calculations				**2003**	**2004**	**2005**		
14	Opening RAV				6,150.5	7,149.0	7,585.7		
15	Depreciation on Opening (1 January 2003) RAV				227.1	227.1	227.1		
16	New investment				1,267.8	730.4	346.0		
17	New investment 2003 to date				1,267.8	1,998.2	2,344.2		
18	Depreciation on new investment 2003 to date				42.3	66.6	78.1		
19	Closing RAV				7,149.0	7,585.7	7,626.5		
	PCR2 Discounted Costs				**2003**	**2004**	**2005**	**TOTAL**	
20	Discounted operating expenditure				94.0	88.7	83.7	266.4	
21	Discounted capital expenditure				1231.4	669.3	299.1	2199.8	
22	Discounted Difference between Opening and Closing RAVs				6,150.5		-6,403.4	-252.8	
23	**Total discounted costs (= revenue requirement) (AED m)**							**2,213.3**	
	PCR 2 Revenue Forecast				**2003**	**2004**	**2005**	**PV Share in TOTAL**	
24	**Revenue driver 1**	Driver forecast	Units		1.0	1.0	1.0		
25		Notified value (a)	AED m		**522.766**	522.766	522.766		
26		Revenue forecast	AED m		522.8	522.8	522.8	1,438.7	
27		Share of revenue	%		72%	65%	58%	**65%**	
28	**Revenue driver 2**	Driver forecast	Units		4,056.0	4,519.0	5,109.0	**Constraints for Solver Run**	
29		Notified value (b)	AED m / MW		**0.0443**	0.0443	0.0443		
30		Revenue forecast	AED m		179.6	200.1	226.2	553.3	
31		Share of revenue	%		25%	25%	25%	**25%**	
32	**Revenue driver 3**	Driver forecast	Units		2,230.0	7,440.0	14,000.0		
33		Notified value (c)	AED m / GWh		**0.0105**	0.0105	0.0105		
34		Revenue forecast	AED m		23.4	78.1	147.0	221.3	
35		Share of revenue	%		3%	10%	16%	**10%**	
			Variables for Solver Run						
36	Annual revenue (AED m)				725.8	801.0	895.9	**TOTAL**	Difference
37	**Discounted annual revenue (AED m)**				704.9	733.9	774.5	**2,213.3**	0.00
								Target for Solver Run	
	PCR2 Implied Financial Indicators				**2003**	**2004**	**2005**		
38	Implied annual profit (AED m)				359.6	410.5	493.9		
39	Implied return on mid-point RAV (%)				5.41%	5.57%	6.49%		
	PCR2 Notified Values				**2003**				
40	X Factor				0.0				
41	Notified Value (a)				522.766	AED million			
42	Notified Value (b)				0.04427823	AED million / MW			
43	Notified Value (c)				0.01049698	AED million / GWh			

Table C.2: Draft Proposal Price Control Calculations for TRANSCO (Water)

Line	(all amounts are in 2003 prices)				2003	2004	2005		
	Inputs				**2003**	**2004**	**2005**		
1	Operating expenditure allowance (AED m, 2003 prices)				93.25	93.25	93.25		
2	Provisional figure for new investment (AEDm, 2003 prices)				1,261.1	1,280.1	243.2		
3	Forecast for revenue driver 1 (units)				1.0	1.0	1.0		
4	Forecast for revenue driver 2 (MGD)				389	440	490		
5	Forecast for revenue driver 3 (MG metered)				104,852	120,668	139,200		
6	Opening (1 January 2003) RAV (AED m, 2003 prices)			2,480.35					
7	Depreciation on Initial RAV (AED m, 2003 prices)			144.23					
8	Assumed average asset life for new investment (years)			30					
9	Cost of capital (real)			6.00%					
10	Weight in revenue for Revenue driver 1			65.00%					
11	Weight in revenue for Revenue driver 2			25.00%					
12	Weight in revenue for Revenue driver 3			10.00%					
13	X Factor			0.00					
	PCR2 Required Revenue Calculations								
	PCR2 RAV Calculations				**2003**	**2004**	**2005**		
14	Opening RAV				2,480.4	3,555.2	4,606.3		
15	Depreciation on Opening (1 January 2003) RAV				144.2	144.2	144.2		
16	New investment				1,261.1	1,280.1	243.2		
17	New investment 2003 to date				1,261.1	2,541.2	2,784.4		
18	Depreciation on new investment 2003 to date				42.0	84.7	92.8		
19	Closing RAV				3,555.2	4,606.3	4,612.5		
	PCR2 Discounted Costs				**2003**	**2004**	**2005**	**TOTAL**	
20	Discounted operating expenditure				90.6	85.4	80.6	256.6	
21	Discounted capital expenditure				1,224.9	1,173.0	210.3	2,608.1	
22	Discounted Difference between Opening and Closing RAVs				2,480.4		-3,872.8	-1,392.4	
23	**Total discounted costs (= revenue requirement) (AED m)**							**1,472.3**	
	PCR 2 Revenue Forecast				**2003**	**2004**	**2005**	**PV Share in TOTAL**	
24	**Revenue driver 1**	Driver forecast	Units		1.0	1.0	1.0		
25		Notified value (a)	AED m		**347.749**	347.749	347.749		
26		Revenue forecast	AED m		347.7	347.7	347.7	957.0	
27		Share of revenue	%		68%	65%	62%	**65%**	
28	**Revenue driver 2**	Driver forecast	Units		389.0	440.0	490.0	**Constraints for Solver Run**	
29		Notified value (b)	AED m / MGD		**0.3056**	0.3056	0.3056		
30		Revenue forecast	AED m		118.9	134.5	149.7	368.1	
31		Share of revenue	%		23%	25%	27%	**25%**	
32	**Revenue driver 3**	Driver forecast	Units		104852.0	120668.0	139200.0		
33		Notified value (c)	AED m / MG		**0.0004**	0.0004	0.0004		
34		Revenue forecast	AED m		46.4	53.4	61.6	147.2	
35		Share of revenue	%		9%	10%	11%	**10%**	
			Variables for Solver Run						
36	Annual revenue (AED m)				513.0	535.6	559.1	**TOTAL**	Difference
37	**Discounted annual revenue (AED m)**				498.3	490.8	483.3	**1,472.3**	**0.00**
								Target for Solver Run	
	PCR2 Implied Financial Indicators				**2003**	**2004**	**2005**		
38	Implied annual profit (AED m)				233.5	213.4	228.8		
39	Implied return on mid-point RAV (%)				7.74%	5.23%	4.96%		
	PCR2 Notified Values				**2003**				
40	X Factor				0.0				
41	Notified Value (a)				347.749	AED million			
42	Notified Value (b)				0.30556946	AED million / MGD			
43	Notified Value (c)				0.00044248	AED million / MG			

Appendix D: Price Control Calculations for ADDC

Table D.1: Draft Proposal Price Control Calculations for ADDC (Electricity)

Line	(all amounts are in 2003 prices)							
	Inputs				**2003**	**2004**	**2005**	
1	Operating expenditure allowance (AED m, 2003 prices)				196.37	196.37	196.37	
2	Provisional figure for new investment (AEDm, 2003 prices)				461.9	485.0	509.2	
3	Forecast for revenue driver 1				1.0	1.0	1.0	
4	Forecast for revenue driver 2 (Electricity Customer Accounts)				207,628	225,110	238,920	
5	Forecast for revenue driver 3 (GWh metered)				13,152	15,095	17,221	
6	Opening (1 January 2003) RAV (AED m, 2003 prices)			4,180.40				
7	Depreciation on Initial RAV (AED m, 2003 prices)			186.48				
8	Assumed average asset life for new investment (years)			30				
9	Cost of capital (real)			6.00%				
10	Weight in revenue for Revenue driver 1			65.00%				
11	Weight in revenue for Revenue driver 2			25.00%				
12	Weight in revenue for Revenue driver 3			10.00%				
13	X Factor			0.00				
PCR2 Required Revenue Calculations								
	PCR2 RAV Calculations				**2003**	**2004**	**2005**	
14	Opening RAV				4,180.4	4,440.4	4,707.3	
15	Depreciation on Opening (1 January 2003) RAV				186.5	186.5	186.5	
16	New investment				461.9	485.0	509.2	
17	New investment 2003 to date				461.9	946.8	1,456.1	
18	Depreciation on new investment 2003 to date				15.4	31.6	48.5	
19	Closing RAV				4,440.4	4,707.3	4,981.5	
	PCR2 Discounted Costs				**2003**	**2004**	**2005**	**TOTAL**
20	Discounted operating expenditure				190.7	179.9	169.7	540.4
21	Discounted capital expenditure				448.6	444.4	440.2	1,333.2
22	Discounted Difference between Opening and Closing RAVs				4,180.4		-4,182.6	-2.2
23	**Total discounted costs (= revenue requirement) (AED m)**							**1,871.4**
	PCR 2 Revenue Forecast				**2003**	**2004**	**2005**	**PV Share in TOTAL**
24	**Revenue driver 1**	Driver forecast	Units		1.0	1.0	1.0	
25		Notified value (a)	AED m		**442.008**	442.008	442.008	
26		Revenue forecast	AED m		442.0	442.0	442.0	1,216.4
27		Share of revenue	%		67%	65%	63%	**65%**
28	**Revenue driver 2**	Driver forecast	Units		207628.0	225110.0	238920.0	**Constraints for Solver Run**
29		Notified value (b)	AED m / Cust. Account		**0.0008**	0.0008	0.0008	
30		Revenue forecast	AED m		158.1	171.4	181.9	467.9
31		Share of revenue	%		24%	25%	26%	**25%**
32	**Revenue driver 3**	Driver forecast	Units		13152.0	15095.0	17221.0	
33		Notified value (c)	AED m / GWh		**0.0045**	0.0045	0.0045	
34		Revenue forecast	AED m		59.3	68.1	77.7	187.1
35		Share of revenue	%		9%	10%	11%	**10%**
			Variables for Solver Run					
36	Annual revenue (AED m)				659.4	681.5	701.6	**TOTAL** Difference
37	**Discounted annual revenue (AED m)**				640.5	624.5	606.5	**1,871.4** 0.00
								Target for Solver Run
	PCR2 Implied Indicators				**2003**	**2004**	**2005**	
38	Implied annual profit (AED m)				261.2	267.1	270.2	
39	Implied return on mid-point RAV (%)				6.06%	5.84%	5.58%	
	PCR2 Notified Values				**2003**			
40	X Factor				0.0			
41	Notified Value (a)				442.008	AED million		
42	Notified Value (b)				0.00076140	AED million / Cust. Account		
43	Notified Value (c)				0.00451025	AED million / GWh		

Table D.2: Draft Proposal Price Control Calculations for ADDC (Water)

Line	(all amounts are in 2003 prices)				2003	2004	2005		
	Inputs				**2003**	**2004**	**2005**		
1	Operating expenditure allowance (AED m, 2003 prices)				122.58	122.58	122.58		
2	Provisional figure for new investment (AEDm, 2003 prices)				151.4	159.0	166.9		
3	Forecast for revenue driver 1 (units)				1.0	1.0	1.0		
4	Forecast for revenue driver 2 (Water Customer Accounts)				184,601	200,151	212,461		
5	Forecast for revenue driver 3 (MG metered)				19,550	42,021	74,733		
6	Opening (1 January 2003) RAV (AED m, 2003 prices)			1,408.11					
7	Depreciation on Initial RAV (AED m, 2003 prices)			83.66					
8	Assumed average asset life for new investment (years)			30					
9	Cost of capital (real)			6.00%					
10	Weight in revenue for Revenue driver 1			65.00%					
11	Weight in revenue for Revenue driver 2			25.00%					
12	Weight in revenue for Revenue driver 3			10.00%					
13	X Factor			0.00					
	PCR2 Required Revenue Calculations								
	PCR2 RAV Calculations				**2003**	**2004**	**2005**		
14	Opening RAV				1,408.1	1,470.8	1,535.8		
15	Depreciation on Opening (1 January 2003) RAV				83.7	83.7	83.7		
16	New investment				151.4	159.0	166.9		
17	New investment 2003 to date				151.4	310.4	477.4		
18	Depreciation on new investment 2003 to date				5.0	10.3	15.9		
19	Closing RAV				1,470.8	1,535.8	1,603.2		
	PCR2 Discounted Costs				**2003**	**2004**	**2005**	**TOTAL**	
20	Discounted operating expenditure				119.1	112.3	106.0	337.3	
21	Discounted capital expenditure				147.1	145.7	144.3	437.1	
22	Discounted Difference between Opening and Closing RAVs				1,408.1		-1,346.1	62.1	
23	**Total discounted costs (= revenue requirement) (AED m)**							**836.5**	
	PCR 2 Revenue Forecast				**2003**	**2004**	**2005**	**PV Share in TOTAL**	
24	**Revenue driver 1**	Driver forecast	Units		1.0	1.0	1.0		
25		Notified value (a)	AED m		**197.560**	197.560	197.560		
26		Revenue forecast	AED m		197.6	197.6	197.6	543.69	
27		Share of revenue	%		70%	65%	60%	**65%**	
28	**Revenue driver 2**	Driver forecast	Units		184601.0	200151.0	212461.0	**Constraints for Solver Run**	
29		Notified value (b)	AED m / Cust.Account		**0.0004**	0.0004	0.0004		
30		Revenue forecast	AED m		70.7	76.6	81.3	209.1	
31		Share of revenue	%		25%	25%	25%	**25%**	
32	**Revenue driver 3**	Driver forecast	Units		19550.2	42020.8	74733.1		
33		Notified value (c)	AED m / MG		**0.0007**	0.0007	0.0007		
34		Revenue forecast	AED m		13.4	28.8	51.2	83.6	
35		Share of revenue	%		5%	10%	16%	**10%**	
			Variables for Solver Run						
36	Annual revenue (AED m)				281.6	303.0	330.1	**TOTAL**	Difference
37	**Discounted annual revenue (AED m)**				273.5	277.6	285.3	**836.5**	**0.00**
								Target for Solver Run	
	PCR2 Implied Financial Indicators				**2003**	**2004**	**2005**		
38	Implied annual profit (AED m)				70.3	86.4	107.9		
39	Implied return on mid-point RAV (%)				4.89%	5.75%	6.88%		
	PCR2 Notified Values				**2003**				
40	X Factor				0.0				
41	Notified Value (a)				197.560	AED million			
42	Notified Value (b)				0.00038274	AED million / Cust. Account			
43	Notified Value (c)				0.00068507	AED million / MG			

Appendix E: Price Control Calculations for AADC

Table E.1: Draft Proposal Price Control Calculations for AADC (Electricity)

Line	(all amounts are in 2003 prices)								
	Inputs				**2003**	**2004**	**2005**		
1	Operating expenditure allowance (AED m, 2003 prices)				100.12	100.12	100.12		
2	Provisional figure for new investment (AEDm, 2003 prices)				205.8	205.8	205.8		
3	Forecast for revenue driver 1 (units)				1.0	1.0	1.0		
4	Forecast for revenue driver 2 (Electricity Customer Accounts)				84,000	88,202	92,612		
5	Forecast for revenue driver 3 (GWh metered)				5,915	6,385	6,873		
6	Opening (1 January 2003) RAV (AED m, 2003 prices)			2,237.50					
7	Depreciation on Initial RAV (AED m, 2003 prices)			111.52					
8	Assumed average asset life for new investment (years)			30					
9	Cost of capital (real)			6.00%					
10	Weight in revenue for Revenue driver 1			65.00%					
11	Weight in revenue for Revenue driver 2			25.00%					
12	Weight in revenue for Revenue driver 3			10.00%					
13	X Factor			0.00					
	PCR2 Required Revenue Calculations								
	PCR2 RAV Calculations				**2003**	**2004**	**2005**		
14	Opening RAV				2,237.5	2,324.9	2,405.5		
15	Depreciation on Opening (1 January 2003) RAV				111.5	111.5	111.5		
16	New investment				205.8	205.8	205.8		
17	New investment 2003 to date				205.8	411.6	617.4		
18	Depreciation on new investment 2003 to date				6.9	13.7	20.6		
19	Closing RAV				2,324.9	2,405.5	2,479.2		
	PCR2 Discounted Costs				**2003**	**2004**	**2005**	**TOTAL**	
20	Discounted operating expenditure				97.2	91.7	86.5	275.5	
21	Discounted capital expenditure				199.9	188.6	177.9	566.4	
22	Discounted Difference between Opening and Closing RAVs				2,237.5		-2,081.6	155.9	
23	**Total discounted costs (= revenue requirement) (AED m)**							**997.8**	
	PCR 2 Revenue Forecast				**2003**	**2004**	**2005**	**PV Share in TOTAL**	
24	**Revenue driver 1**	Driver forecast	Units		1.0	1.0	1.0		
25		Notified value (a)	AED m		**235.676**	235.676	235.676		
26		Revenue forecast	AED m		235.7	235.7	235.7	648.6	
27		Share of revenue	%		66%	65%	64%	**65%**	
28	**Revenue driver 2**	Driver forecast	Units		84000.0	88202.0	92612.0	**Constraints for Solver Run**	
29		Notified value (b)	AED m / Cust. Account		**0.0010**	0.0010	0.0010		
30		Revenue forecast	AED m		86.4	90.7	95.3	249.5	
31		Share of revenue	%		24%	25%	26%	**25%**	
32	**Revenue driver 3**	Driver forecast	Units		5915.0	6385.0	6873.0		
33		Notified value (c)	AED m / GWh		**0.0057**	0.0057	0.0057		
34		Revenue forecast	AED m		33.7	36.3	39.1	99.8	
35		Share of revenue	%		9%	10%	11%	**10%**	
			Variables for Solver Run						
36	Annual revenue (AED m)				355.8	362.8	370.1	**TOTAL**	Difference
37	**Discounted annual revenue (AED m)**				345.5	332.4	319.9	**997.83**	0.00
								Target for Solver Run	
	PCR2 Implied Financial Indicators				**2003**	**2004**	**2005**		
38	Implied annual profit (AED m)				137.3	137.4	137.8		
39	Implied return on mid-point RAV (%)				6.02%	5.81%	5.64%		
	PCR2 Notified Values				**2003**				
40	X Factor				0.0				
41	Notified Value (a)				235.676	AED million			
42	Notified Value (b)				0.00102883	AED million / Cust. Account			
43	Notified Value (c)				0.00568981	AED million / GWh			

Table E.2: Draft Proposal Price Control Calculations for AADC (Water)

Line	(all amounts are in 2003 prices)			2003	2004	2005		
	Inputs			**2003**	**2004**	**2005**		
1	Operating expenditure allowance (AED m, 2003 prices)			93.10	93.10	93.10		
2	Provisional figure for new investment (AEDm, 2003 prices)			72.37	72.37	72.37		
3	Forecast for revenue driver 1 (units)			1.0	1.0	1.0		
4	Forecast for revenue driver 2 (Water Customer Accounts)			57,987	60,887	63,931		
5	Forecast for revenue driver 3 (MG Metered)			5,242	7,862	11,794		
6	Opening (1 January 2003) RAV (AED m, 2003 prices)		455.90					
7	Depreciation on Initial RAV (AED m, 2003 prices)		13.62					
8	Assumed average asset life for new investment (years)		30					
9	Cost of capital (real)		6.00%					
10	Weight in revenue for Revenue driver 1		65.00%					
11	Weight in revenue for Revenue driver 2		25.00%					
12	Weight in revenue for Revenue driver 3		10.00%					
13	X Factor		0.00					
	PCR2 Required Revenue Calculations							
	PCR2 RAV Calculations			**2003**	**2004**	**2005**		
14	Opening RAV			455.9	512.2	566.2		
15	Depreciation on Opening (1 January 2003) RAV			13.6	13.6	13.6		
16	New investment			72.4	72.4	72.4		
17	New investment 2003 to date			72.4	144.7	217.1		
18	Depreciation on new investment 2003 to date			2.4	4.8	7.2		
19	Closing RAV			512.2	566.2	617.7		
	PCR2 Discounted Costs			**2003**	**2004**	**2005**	**TOTAL**	
20	Discounted operating expenditure			90.4	85.3	80.5	256.2	
21	Discounted capital expenditure			70.3	66.3	62.6	199.2	
22	Discounted Difference between Opening and Closing RAVs			455.9		-518.6	-62.7	
23	**Total discounted costs (= revenue requirement) (AED m)**						**392.7**	
	PCR 2 Revenue Forecast			**2003**	**2004**	**2005**	**PV Share in TOTAL**	
24	**Revenue driver 1**	Driver forecast	Units	1.0	1.0	1.0		
25		Notified value (a)	AED m	**92.743**	92.743	92.743		
26		Revenue forecast	AED m	92.7	92.7	92.7	255.2	
27		Share of revenue	%	68%	65%	61%	**65%**	
28	**Revenue driver 2**	Driver forecast	Units	57987.0	60887.0	63931.0	**Constraints for Solver Run**	
29		Notified value (b)	AED m / Cust. Account	**0.0006**	0.0006	0.0006		
30		Revenue forecast	AED m	34.0	35.7	37.5	98.2	
31		Share of revenue	%	25%	25%	25%	**25%**	
32	**Revenue driver 3**	Driver forecast	Units	5242.0	7862.0	11794.0		
33		Notified value (c)	AED m / MG	**0.0017**	0.0017	0.0017		
34		Revenue forecast	AED m	9.2	13.7	20.6	39.3	
35		Share of revenue	%	7%	10%	14%	**10%**	
			Variables for Solver Run					
36	Annual revenue (AED m)			135.9	142.2	150.8	**TOTAL**	Difference
37	**Discounted annual revenue (AED m)**			132.0	130.3	130.4	**392.7**	**0.00**
							Target for Solver Run	
	PCR2 Implied Financial Indicators			**2003**	**2004**	**2005**		
38	Implied annual profit (AED m)			26.8	30.6	36.9		
39	Implied return on mid-point RAV (%)			5.53%	5.68%	6.23%		
	PCR2 Notified Values			**2003**				
40	X Factor			0.0				
41	Notified Value (a)			92.743	AED million			
42	Notified Value (b)			0.00058650	AED million / Cust. Account			
43	Notified Value (c)			0.00174590	AED million / MG			

Appendix F: Category B Performance Indicators for Companies

Tables F.1, F.2 and F.3 below list the proposed Category B performance indicators for ADWEC, TRANSCO and ADDC/AADC, respectively. These indicators are the same as listed in Appendix G of the Draft Proposals, with the exception of three indicators, marked with '*' in the following tables, which were in Category A in the Draft Proposals and now have been included in Category B.

Category B indicators will be monitored during the second price control period. Adjustments may be made to financial projections in 2005 for next price control review in light of assessed performance. Such indicators may be considered for suitability for Category A indicators in the PIS at the 2005 Price Controls Review.

Table F.1: Category B Performance Indicators for ADWEC

Performance Indicator	Description/Formula
Generation Security Standard (GSS)	Planning standard to ensure that supply of electricity to customers will not be discontinued for a total of more than 1 day in any period of 10 years i.e. Loss of Load Expectation ≤ 0.1 day / year (Refer to ADWEC's Licence Condition 17)
Desalination Security Standard (DSS)	(Refer to ADWEC's Licence Condition 17 and Seven-year Statement of July 2001)
Interim P&L Account Timeliness	Difference between the actual date and the target date (30th September each year) for submission of un-audited interim profit and loss account for the first six months of the year (Refer to ADWEC's Licence Condition 6)
PWPA Timeliness	Difference between the actual date and the target date (31st December each year) for signing of the PWPAs for the following year
Seven-Year Planning Statement Timeliness	Difference between the actual date and the agreed target date (18 May) for submission of the statement (Refer to ADWEC's Licence Condition 18)
* BST Timeliness	Difference between the actual date and the target date (31st December each year) for publication of the BST for the following year (Refer to ADWEC's Licence Condition 12)
Economic Purchase Indicator	Year-on-year difference in total production costs per unit for ADWEA owned GDs due to ADWEC's efforts (Refer to ADWEC's Licence Conditions 14-17)

Table F.2: Category B Performance Indicators for TRANSCO	
Performance Indicator	**Description/Formula**
Electricity Transmission Security	Number of incidents
Electricity Average Incident Duration	Total duration of all incidents as a proportion of the number of incidents (where incident is an event causing of loss of supply)
* Energy Lost	Energy lost or un-supplied (MWh) due to incidents
Water Transmission Security	Number of incidents
Water Average Incident Duration	Total duration of all incidents as a proportion of the number of incidents
Water Quality	The number of samples that pass water quality regulations as a proportion of the total number of samples that are required to be taken in accordance with the sampling frequency regulations (whether taken or not). In effect, this indicator will be calculated from the actual sampling frequency and samples that fail to comply with the Water Quality Regulations 2000, both of these indicators are being reported presently
Electricity Transmission Loss	Difference between the numbers of units entered into the system and units exit from the system as a proportion of the number of units entered into the system
Water Transmission Loss	Difference between the numbers of units entered into the system and units exit from the system as a proportion of the number of units entered into the system
Economic Despatch	Under discussion between the Bureau and TRANSCO (Refer to TRANSCO's Licence Condition 22)
Settlement Data Accuracy and Timeliness	Under discussion between the Bureau and ADWEC and to be discussed with TRANSCO
Planning Data Accuracy and Timeliness	Under discussion between the Bureau, TRANSCO and ADWEC
Statement of Connection and Use of System Charges Timeliness	Difference between the actual date and the target date (31 December each year, to be agreed) for submission of the statement (Refer to TRANSCO's Licence Condition 15)
Interim P&L Account Timeliness	Difference between the actual date and the target date (30^{th} September each year) for submission of un-audited interim profit and loss account for the first six months of the year (Refer to TRANSCO's Licence Condition 8)
Five-Year Planning Statement Timeliness	Difference between actual date and target date (30 June each year, to be agreed) for submission of the statement (TRANSCO's Licence Condition 15)

Table F.3: Category B Performance Indicators for ADDC and AADC	
Performance Indicator	**Description/Formula**
Electricity Distribution Security	Number of customers interrupted
Energy Lost	Energy lost (MWh) due to interruption
* Customer Minutes Lost	Number of customer minutes lost per connected customer
Electricity Meter Reading	Number of electricity customer meters read
Electricity Distribution Loss	Difference between the number of units purchased from ADWEC and RASCO and the number of units billed to customers, as a proportion of the number of nits purchased from ADWEC and RASCO
Water Distribution Metering	Difference between the number of units purchased from ADWEC and RASCO and the number of units billed to customers, as a proportion of the number of nits purchased from ADWEC and RASCO
Water Meter Reading	Number of water customer meters read
Low Pressure	Number of low pressure customers per connected customers, where low pressure customers mean the customers in all such zones, sectors and areas where the measured pressure at any of the three randomly selected locations is below the pre-agreed head or pressure i.e. 5m or 0.5 bar; however number of customers in the zones with one low pressure location can be weighed 1/3, those with two low pressure locations can have a weighting of 2/3 and those with three low pressure locations can have a weighting of 1
Water Supply Method	Number of network-connected customers as a proportion of total number of customers, where the number of customers with unrestricted supply and timed supply will be given different weightings, say 1 and 0.5 respectively
Water Quality	The number of samples that pass water quality regulations as a proportion of the total number of samples that are required to be taken in accordance with the sampling frequency regulations (whether taken or not). In effect, this indicator will be calculated from the actual sampling frequency and samples that fail to comply with the Water Quality Regulations 2000, both of these indicators are being reported presently
Customer Satisfaction	To be discussed.
Interim P&L Account Timeliness	Difference between the actual date and the target date (30th September each year) for submission of un-audited interim profit and loss account for the first six months of the year (Refer to Disco's Licence Condition 9)