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Proposed Approach to Implementing the Control Mechanism for Direct Control Services

2016-2020 Regulatory Control Period

Attachment to Regulatory Proposal

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1. OVERVIEW

This paper outlines how United Energy Distribution Pty Ltd (**UE**) proposes to adjust its prices for each year in the 2016-2020 regulatory control period and how it will comply with the requirements of the National Electricity Rules (**NER**) with regard to.

- compliance with the relevant control mechanisms [NER cl. 6.12.1(13)],
- reporting and compliance with designated pricing proposal charges [NER cl. 6.12.1(19)], and
- reporting and compliance with jurisdictional scheme amounts [NER cl. 6.12.1(20)].

In general, UE agrees with the positions taken in the relevant chapter (chapter 2) of the Australian Energy Regulator's (**AER**) Framework and Approach (**F&A**) Paper. In this attachment, UE states its position regarding the treatment of some items that have been flagged as requiring resolution during the review process and notes a few points of difference between our proposed approach and our understanding of the detailed approach to particular issues currently adopted by the AER.

2. CONTROL MECHANISMS

By adhering to the formulae outlined in this section, UE considers it will meet the requirements of NER cl. 6.12.1(13) and cl. 6.8.2(c)(3), and so demonstrate compliance with the relevant control mechanism to apply in the forthcoming regulatory period.

2.1 PRICE CONTROL MECHANISM – DIRECT CONTROL SERVICES

The AER's F&A paper sets out the regulatory control mechanism that is to regulate UE's direct control service tariffs for each of the services offered in the 2016-2020 regulatory period and how they are adjusted annually via an annual pricing proposal. UE will submit an initial pricing proposal following the AER's final determination on this regulatory proposal and then by 30 September of each remaining year in the regulatory period.

The relevant control mechanisms include:

- a revenue cap for standard control services,
- a revenue cap for type 5, type 6 and smart regulated metering for 'installation, operation, repair & maintenance, and replacement' and 'collection of meter data, processing and storage of meter data, and provision of access to meter data' services, and
- price caps for each individual service for alternative control services.

2.1.1 REVENUE CAP FOR STANDARD CONTROL SERVICES

A revenue cap on standard control services means that UE has no scope to recover more from its approved tariffs than the total revenue allowed by the AER.

Box 1 sets out the approach UE proposes to use when applying the revenue cap to standard control services. In words, prices will be set each year so that forecast revenue will not exceed maximum allowable revenue.

Where tariff levels and actual demand levels result in deviations of actual revenue from maximum allowable revenue, the maximum allowable revenue for the following year will be adjusted through an 'unders-and-overs' mechanism discussed in section 5.

Box 1: Control mechanism for standard control services

Allowed nominal revenue adjusted for multiplicative incentive scheme factors in regulatory year 1 of the regulatory period will be:

$$AAR_1 = AR_1(1 + S_1^m) \quad (1)$$

while allowed nominal revenue adjusted for multiplicative incentive scheme factors in regulatory years 2 to 5 of the regulatory period will be:

$$AAR_t = AAR_{t-1}(1 + CPI_t)(1 - X_t)(1 + S_t), \quad t = 2, 3, \dots, 5 \quad (2)$$

Maximum allowable revenue in year t will be:

$$MAR_t = AAR_t + I_t + T_t + B_t, \quad t = 1, 2, \dots, 5 \quad (3)$$

Prices set in year t must satisfy:

$$\sum_{i=1}^n \sum_{j=1}^m p_{ijt} q_{ijt}^* \leq MAR_t \quad t = 1, 2, \dots, 5 \quad (4)$$

Equations (1), (2), (3) and (4) use the following definitions:

AAR_t is allowed nominal revenue adjusted for multiplicative incentive scheme factors in regulatory year t

AR_t is the annual smoothed revenue requirement from the PTRM for regulatory year t

S_t^m is the sum of the s-factors for all parameters, after application of the s-bank, adjusted for the change in the annual revenue requirement between the last year of the 2011-2015 regulatory period, that is, 2015, and the first year of the 2016-2020 regulatory period, that is, 2016.

CPI_t is the percentage increase in the consumer price index for regulatory year t

X_t is the X factor in year t – to be decided upon in the final decision

S_t is the s-factor for regulatory year t – see equation (2) on page 30 of the AER's *Electricity distribution network service providers: Service target performance incentive scheme* of November 2009

MAR_t is maximum allowable revenue in regulatory year t

I_t is the sum of additive incentive scheme adjustments in regulatory year t – the method is to be decided upon in the final decision

T_t is the sum of end-of-period adjustments in regulatory year t – the method is to be decided upon in the final decision

B_t is the sum of annual adjustment factors in regulatory year t – this will incorporate but is not limited to

adjustments for the overs and unders account

p_{ijt} is the price of component i of tariff j in regulatory year t .

q_{ijt}^* is the forecast quantity of component i of tariff j in year t .

All additive adjustments will be incorporated into either I_t , T_t or B_t . Any additional multiplicative adjustment will be made in the same way as the adjustment made for the service target performance scheme.

While adopting some changed notation, UE's proposal in Box 1 is fully consistent with the control mechanism as set out in the AER's F&A paper.

The following paragraphs discuss terms which are to be decided in the final decision.

'I' Term

UE identifies the following incentive schemes:

- Building block incentives – the efficiency benefit sharing scheme (**EBSS**) and capital expenditure sharing scheme (**CESS**) are captured in the building block model and therefore precluded from the 'I' to ensure the amounts are not double counted.
- Service Target Performance Incentive Scheme (**STPIS**) – this is to be applied under its own 'S factor' term and therefore is precluded from the 'I' term to also avoid double counting.
- Small-scale incentive scheme – this is not active in this regulatory period¹ and therefore is not included in the 'I' term.
- F-Factor – the State Government's f-factor scheme is active in the 2016 regulatory period,² and UE considers the best place to incorporate the revenue adjustment is within the 'I' term.
- Demand Management and Embedded Generation Connection Incentive Scheme (**DMEGCIS**)³ – mechanistically, this scheme requires adjustment in both the building block and price control formulae:
 - building block – the allowance created in the final determination forms part of the building block allowance and is therefore excluded from the price control formulae, and
 - price control formulae – the allowance created is a 'use it or lose it scheme' and requires refunding of the unspent funds in subsequent regulatory periods. The method for achieving this is outlined below. Although the Demand Management Incentive Scheme (**DMIS**) is an incentive scheme, the revenue adjustment that it raises is more akin to a transition adjustment caused by the change from one regulatory period to the next and, therefore, it is a proposed true-up from the prior period, captured in the T term.

UE does not propose to include any other adjustments under this term.

¹ AER, "Final Framework and approach for the Victorian Electricity Distributors, Regulatory control period commencing 1 January 2016", 24 October 2014.

² s6.1, AER, "Final Framework and approach for the Victorian Electricity Distributors, Regulatory control period commencing 1 January 2016", 24 October 2014.

³ Known as the Demand Management Incentive Scheme in the 2011 regulatory period.

Previous regulatory period adjustments, 'T' Term

UE proposes that just one component be included in the transitional adjustment factor ('T' term) to account for adjustments from the 2006 and 2011 regulatory periods.

The DMIS from 2011-2015⁴ operates in a way that requires UE to return unspent funds to customers by adjusting the revenue.⁵ UE is also required to offset any revenue not recovered as a result of initiatives delivered under the DMIS.⁶ To achieve this objective, certain adjustments are proposed in the 2017 year to account for the actual revenue in accordance with the DMIS process (see Box 2).

UE does not propose to claim any foregone revenue, permissible under NER cl. 3.2.5, attributed to the DMIS scheme noting that is making a contribution to the development of demand management outcomes in the long term interests of customers.

UE does not propose to include any other adjustments under this term.

Annual adjustments, 'B' Term

License fees charges by the Victorian Essential Service Commission were recovered through the L-factor during the 2011-15 regulatory period. With a change in the form of price control towards a revenue cap and the consequential changes in price control formulae, the recovery of these fees can best be achieved through the B_t term rather than continuing the use of the L-factor mechanism.

UE also proposes to include a true-up for the under or over recovery of revenue in prior years of the forthcoming regulatory period. The method to achieve this is discussed in section 5.

UE does not propose to include any other adjustments under this term.

⁴ "Demand Management Incentive Scheme, Jemena, CitiPower, Powercor, SP AusNet and United Energy, 2011–15", AER, April 2009.

⁵ NER, cl. 3.1.5.

⁶ NER, cl. 3.2.5.

Box 2: Adjustments for DMIS

Annual adjustment amounts

$$C_t = C_{t-1} - \left[\frac{R_t - A_t}{(1+i)^t} \times (1+i)^5 (1+i^*)^2 \right] \quad (5)$$

Where:

- R_t ex-ante revenue allowance under the DMIS for regulatory year 't' (t = 1,2,...,5)
- A_t expenditure approved ex-post under the DMIS for regulatory year 't' (t = 1,2,...,5)
- i nominal vanilla WACC as set in the distribution determination for the forthcoming regulatory period
- i^* nominal vanilla WACC as set in the distribution determination for the forthcoming regulatory period

NPV amount (\$, 2015) to be adjusted in 2017

$$NPV = \frac{(R_1 - A_1)}{(1+i)} + \frac{(R_2 - A_2)}{(1+i)^2} + \frac{(R_3 - A_3)}{(1+i)^3} + \frac{(R_4 - A_4)}{(1+i)^4} + \frac{(R_5 - A_5)}{(1+i)^5} + \frac{C_5}{(1+i)^5 (1+i^*)^2} = 0 \quad (6)$$

Where:

- R_t ex-ante revenue allowance under the DMIS for regulatory year 't' (t = 1,2,...,5)
- A_t expenditure approved ex-post under the DMIS for regulatory year 't' (t = 1,2,...,5)
- i nominal vanilla WACC as set in the distribution determination for the forthcoming regulatory period
- i^* nominal vanilla WACC as set in the distribution determination for the forthcoming regulatory period.

Calculation of CPI

In various revenue and price control formulae, CPI is used to escalate revenues and prices to nominal dollars. In the F&A paper, the AER indicated it would advise the method for determining CPI as a part of the final determination.

UE proposes the method for determining this escalator in Box 3. This is consistent with the approach followed in the previous regulatory periods with the exception of using the June quarter data from the Australian Bureau of Statistics (**ABS**). UE proposes to balance the most recent actual escalation data with the submission timelines required under the NER requirements for tariff and revenue submissions.⁷

⁷ NER cl. 6.18.2(a) requires that our annual pricing proposal for years 2 to 5 of a regulatory period to be submitted to the AER three months prior to the start of the regulatory year (i.e. by 30 September). This is prior to the September

Box 3: Method for determining CPI_t

The Consumer Price Index, All Groups Index Number (weighted average of eight capital cities) published by the Australia Bureau of Statistics for the June Quarter immediately preceding the start of regulatory year t

divided by

The Consumer Price Index, All Groups Index Number (weighted average of eight capital cities) published by the Australia Bureau of Statistics for the June Quarter immediately preceding the start of regulatory year t-1

minus one.

Adjusting X-factor for the trailing costs of debt

The X-Factor to be incorporated into the price control formula is to be determined by the Post Tax Revenue Model (**PTRM**).⁸ The value of the X-Factor will be amended annually as a means to adjust for the trailing cost of debt.

2.1.2 REVENUE CAP FOR TYPE 5, TYPE 6 AND SMART REGULATED METERING

Similar to the approach adopted for standard control services, the AER has set out a revenue cap for type 5, type 6 and smart regulated metering. This is consistent with the form of price control adopted under the former Cost Recovery Order In Council (**CROIC**) control regime.

Box 4 sets out the approach UE proposes to use when applying the revenue cap on type 5, type 6 and smart regulated metering.

CPI becoming available, which is in October each year. This changed as a result of the 'distribution network pricing arrangements' rule change made by the Australian Energy Market Commission on 27 November 2014.

⁸ AER, "Final decision, Amendment, Electricity transmission and distribution network service providers, Post-tax revenue models (version 3)", 29 January 2015.

Box 4: Control mechanism for type 5, type 6 and smart meters

The allowed nominal revenue in regulatory year t will be:

$$AR_t = AR_{t-1}(1 + CPI_t)(1 - X_t) \quad (7)$$

Maximum allowable revenue in year t will be:

$$MAR_t = AR_t + T_t + B_t \quad (8)$$

Prices set in year t must satisfy:

$$\sum_{i=1}^n \sum_{j=1}^m p_{ijt} q_{ijt}^* \leq MAR_t \quad t = 1, 2, \dots, 5 \quad (9)$$

Equations (7), (8) and (9) use the following definitions:

AR_t is the annual smoothed revenue requirement from the PTRM for regulatory year t

CPI_t is the percentage increase in the consumer price index for regulatory year t

X_t is the X factor in year t – to be decided upon in the final decision

MAR_t is maximum allowable revenue in regulatory year t

T_t is the sum of end-of-period adjustments in regulatory year t – the method to be decided upon in the final decision.

B_t is the sum of annual adjustment factors in regulatory year t . Likely to incorporate but not limited to adjustments for the overs and unders account. The method to be decided upon in the final decision.

p_{ijt} is the price of component i of tariff j in regulatory year t .

q_{ijt}^* is the forecast quantity of component i of tariff j in year t .

Previous regulatory period adjustments ‘ T_t ’ term

The T term will incorporate adjustments in 2016 and 2017 in accordance with the requirements of Clause 5L of CROIC. The amounts will be determined at the time of developing the pricing proposals for the respective years.

Annual adjustments, ‘ B_t ’ term

UE proposes to include a true-up for the under or over recovery of revenue in prior years of the forthcoming regulatory period. The method to achieve this is discussed in section 5.

UE does not propose to include any other adjustments under this term.

‘CPI_t’ term

UE will calculate the CPI_t term using the same method as outlined in section 2.1.1.

‘X_t’ term

The component will be as decided upon in the final decision.

2.1.3 CAP ON INDIVIDUAL PRICES FOR ALTERNATIVE CONTROL SERVICES^{9,10}

The alternative control services price cap formula requires that the price for each service cannot be higher than the previous year’s price after adjustments for inflation (CPI) and X-factor (X).

Box 5 sets out the approach UE proposes to use when applying the revenue cap to type 5, type 6 and smart regulated metering.

Box 5: Control mechanism for alternative control services

$$\bar{p}_i^t \geq p_i^t \quad i=1,\dots,n \text{ and } t=1,2,3,4 \quad (10)$$

$$\bar{p}_i^t = \bar{p}_i^{t-1}(1 + CPI_t)(1 - X_i^t) \quad (11)$$

Where:

\bar{p}_i^t is the cap on the price of service i in year t

p_i^t is the price of service i in year t – the initial value is to be decided in the final decision.

CPI_t is the percentage increase in the consumer price index – to be decided in the final decision.

X_i^t is the X-factor for service i in year t, incorporating annual adjustments to the PTRM for the trailing cost of debt where necessary – to be decided in the final decision.

The following paragraphs discuss how UE will measure these components.

‘p_{ti}’ term

This component represents the price outlined in the final determination.

‘CPI_t’ term

UE will calculate this component using the same method as outlined in section 2.1.1.

⁹ Excludes alternative control services provided under “type 5, type 6 and smart regulated metering”.

¹⁰ While public lighting classified as an alternative control service will be calculated using a limited building block model, it is effectively compliant with this price control model.

'X_{ti}' term

This component will be as decided upon in the final determination. The only service in this category for which X-Factor will be adjusted is public lighting. No other services in this category are affected by the trailing cost of debt.

2.2 DEMONSTRATING COMPLIANCE FOR CONTROL SERVICES

The NER requires UE to demonstrate the application of the control mechanisms and provide supporting information for alternative control services.¹¹

UE's proposed approach to demonstrating compliance with this requirement is to provide the calculations, as a part of the annual pricing proposal, which mathematically solves prices in accordance with the constraints of the revenue cap formula. By approving the pricing proposal, the AER will effectively endorse that UE has complied with the requirement.

¹¹ NER cl. 6.8.2(c)(3).

3. COMPLIANCE WITH DESIGNATED PRICING PROPOSAL CHARGES

Designated Pricing Proposal Charges¹² (DPPC) include cost recovery for services that include:

- transmission charges,
- inter distribution business charges, and
- amounts paid for avoided Transmission Services in accordance with NER cl 5.5(j).

UE proposes to include a true-up for under or over recovery of revenue in prior years of the forthcoming regulatory period. The method to achieve this is discussed in section 5.

¹² NER cl. 6.18.7.

4. JURISDICTIONAL COST RECOVERY SCHEME

The Jurisdictional Cost Recovery Scheme (**JCRS**)¹³ includes cost recovery for services that are required within the Victorian Jurisdiction. These include, but are not limited to:

- rebates for the Premium Feed-in tariff (**PFIT**),¹⁴ and
- rebates for the Transitional Feed-in tariff (**TFiT**).¹⁵

UE proposes to include a true-up as required¹⁶ by the NER for the under or over recovery of revenue in prior years of the forthcoming regulatory period. The method to achieve this is discussed in section 5.

¹³ NER cl. 6.18.7A.

¹⁴ NER cl. 6.18.7A(e)(1)(iv).

¹⁵ NER cl. 6.18.7A(d)(1).

¹⁶ NER cl. 6.18.7A(b).

5. REVENUE TRUE-UPS

For the following services, the revenue cap form of control mechanism requires a true-up of the actual revenue as it varies from forecast:

- standard control services,
- type 5 and 6 regulated metering services,
- designated pricing proposal charges, and
- jurisdictional scheme amounts.

To undertake these adjustments, UE will follow the formulation outlined in Box 6. It should be noted that, for standard control services, provision is made within the methodology to account for 'pass through amounts'.

The unders and overs mechanism must operate in a way that delivers revenue neutral outcomes for DNSPs and their customers over time. This involves the nominal **WACC** (as approved for the year in which the under or over recovery is incurred) being used in effect to index the unders and overs balance and preserve the time value of the balance.

The most straight-forward approach would be to use a two-year lag before any difference between allowed and actual revenues in year t-2 can be objectively verified, and so accounted for in the forecast year's (year t's) proposed tariff schedules. Year t-2 is the first year that audited actuals are available when forecasting revenue in the upcoming year (year t).

However, as the AER recognises, this simple method can give rise to undesirable price instability. To reduce the likelihood of undesirable price shocks, the AER's current preference – supported by UE – instead is to use a smoothing (or rolling) account method, which also incorporates a more updated and accurate estimate of the under/(over) recovery amount in the middle year (year t-1) as well as the audited actual amount from year t-2. Specifically, this method means that, instead of only incorporating data on the under/(over) recovery of allowed revenue that is two years old, an estimate for any subsequent under/(over) recovery in year t-1 (typically based on nine months of data) is additionally used in the calculation of any under/(over) recovery to be recovered in year t. This reduces the likelihood of undesirable price shocks by smoothing the under/(over) recovery estimates.

This smoothing (or rolling) account method also eliminates the need for tolerance limits to restrict unstable prices. A tolerance limit of 2% of maximum allowable revenue in year t has been used by the AER in other jurisdictions in the past. The AER now recognises that the banking of excess under/(over) recovery amounts may result in greater price shocks in the future (as was the case in Queensland in 2010). UE agrees, and accepts that it is preferable for a DNSP to develop a pricing strategy/structure that smooths out price shocks in the absence of any tolerance limits.

When the 'revenue cap' control mechanism is adopted in the place of a price cap mechanism:

- in the first year (year 1), there is no basis for any unders and overs balance adjustment,
- in the second year (year 2), only one year's adjustment is possible, and then that adjustment can only be based on estimates for year t-1, and
- only in the third, fourth and fifth years (years 3, 4 and 5) will data be available for both year t-2 and year t-1 for the purposes of calculating the unders and overs balance.

Any unders and overs amounts from years 4 and 5 in one regulatory period during which a revenue cap mechanism was applied can be either cleared as a P_0 adjustment at the commencement of the next regulatory period or banked to be recovered in year 1 of the next regulatory period.

In UE's view, the only contentious issue surrounding the operation of the unders and overs account relates to whether there should be a calculation of interest for the opening balance of that account in year t, and if so what rate of interest should apply.

First principles suggest that if there is a simple two [or one] year lag in collecting any revenue then a full two years [or one year] of discounting/indexing should be applied in total to the relevant under/(over) recovery amount.

But the AER – in its latest draft determination (in NSW) – has opted for no interest to apply during year t on either year t-2's or year t-1's under/(over) recovery amounts. Roundly, the AER approach implies the crediting of one and one-half year's of interest on year t-2's under/(over) recovery and just one-half year's interest on year t-1's under/(over) recovery.

If both year t-2's or year t-1's under/(over) recovery amounts were instead to attract a full year's interest during the year (year t) in which those amounts are being recovered, roundly this would involve the crediting of two and one-half year's of interest on year t-2's under/(over) recovery amount and one and one-half year's interest on year t-1's under/(over) recovery amount.

As explained further in Box 6, consideration of first principles suggests the appropriateness of a middle ground option. Just as a crediting of interest on a semi-annual basis is appropriate on the under/(over) recovery amounts in the year such amounts are first incurred, the recovery of those amounts during year t – which will also be spread over the course of year t – should also attract a crediting of interest on the opening balance at a semi-annual rate during year t. Roundly, this will result in a full two year's of interest on year t-2's under/(over) recovery amount and a full one year's interest on year t-1's under/(over) recovery amount.

UE proposes to adopt this formulation of the unders and overs adjustment component of the control mechanism applying to annual adjustments of prices for all direct control services.

Box 6: Calculating the unders and overs account balance

Measurement of the adjustment amount for prior years' under/(over) recovery of revenue ($\Delta U\&O_t$) can be generalised as follows:

$$\begin{aligned} \Delta U\&O_t = & (MAR_{t-2} - Rev_{t-2}) * (1 + semiWACC_{t-2}) * (1 + WACC_{t-1}) * (1 + r_t) \\ & + (MAR_{t-1} - Rev_{t-1}) * (1 + semiWACC_{t-1}) * (1 + r_t) \end{aligned} \quad (12)$$

where:

the subscripts t-2, t-1 and t refer to the most recent completed year, the current (incomplete) year and the forthcoming (or forecast) year respectively

MAR = maximum allowable revenue in respect of a particular year

Rev = total revenue received from approved DUoS tariffs in a particular year

WACC = the nominal weighted average cost of capital approved in respect of a particular year

semi WACC = the semi-annual interest rate in respect of a particular year = $(1 + WACC)^{0.5} - 1$

r = the rate of interest to be applied in year t on year t-2's and year t-1's under/(over) recoveries of revenue.

The AER's stance in its NSW draft determination is that no interest be credited during year t on either year t-2's or year t-1's under/(over) recovery, and so effectively that a zero interest rate should be applied in year t to any under/(over) recovery balance. This treatment is inconsistent with the semi-annual accruing of interest in the year in which any under/(over) recovery amount is incurred on the basis that any subsequent recovery of these amounts during year t would likewise accrue over the course of year t and not all on day 1 of year t.

Nor does this logic support the application of a full year's interest on year t's opening balance. Once again, this treatment would be inconsistent with the semi-annual accruing of interest in the year in which any under/(over) recovery amount is incurred on the basis that any subsequent recovery of these amounts during year t would not all accrue on the final day 1 of year t.

Application of first principles suggests that both year t-2's and year t-1's under/(over) recovery during year t should attract the semi-annual interest rate applicable in year t ($= semiWACC_t$). Consistent with the semi-annual accruing of interest in the year in which any under/(over) recovery amount is incurred, any subsequent recovery of these amounts during year t should also be assumed to accrue over the course of year t and not all on day 1 (or day 365) of year t.

UE therefore proposes an unders and overs account mechanism for application during the 2016-2020 regulatory period which measures the adjustment amount for any prior years' under/(over) recovery of revenue ($\Delta U\&O_t$) as follows:

$$\begin{aligned} \Delta U\&O_t = & (MAR_{t-2} - Rev_{t-2}) * (1 + semiWACC_{t-2}) * (1 + WACC_{t-1}) * (1 + semiWACC_t) \\ & + (MAR_{t-1} - Rev_{t-1}) * (1 + semiWACC_{t-1}) * (1 + semiWACC_t) \end{aligned} \quad (13)$$

where:

the subscripts t-2, t-1 and t refer to the most recent completed year, the current (incomplete) year and the forthcoming (or forecast) year respectively

MAR = maximum allowable revenue in respect of a particular year,

Rev = total revenue received from approved DUoS tariffs in a particular year, involving audited amounts for year t-2 and estimates for year t-1

WACC = the nominal weighted average cost of capital approved in respect of a particular year

semi WACC = the semi-annual interest rate in respect of a particular year = $(1 + WACC)^{0.5} - 1$.

Roundly, applying the semi-annual interest rate to the opening unders and overs balance in year t will result in a full two year's of interest on year t-2's under/(over) recovery and a full one year's interest on year t-1's under/(over) recovery.

An illustrative calculation using our proposed method is set out in Box 7.

Box 7: Demonstration of revenue true-up

For items that require a revenue true-up, the follow demonstration outlines how the calculations will be performed:

illustrative figures (100,000 based)	Year t-2 (a) (actual)	Year t-1 (b) (estimate)	Year t (c) (forecast)
Revenue from tariffs	95,000	107,000	113,672
<i>less</i> MAR for the relevant year	100,000	105,000	110,000
<i>equals</i> Under/(over) recovery for regulatory year	-5,000	2,000	<u>3,672</u>
Unders and overs account			
Nominal WACC [1]	8.0%	8.0%	8.0%
Opening balance	0 [3]	-5,196	-3,534
Interest on opening balance	0	-416	139 [2]
Under/(over) recovery for regulatory year	-5,000	2,000	n.a.
Interest on under/(over) recovery for reg year [2]	-196	78	n.a.
Closing balance	-5,196	-3,534	0 [4]

(a) Year t-2 is the most recently completed year. The amounts for that year are audited actuals.

(b) Year t-1 is the current year, that is the year within which tariff calculations for the forthcoming year are taking place. The amounts for that year are 'best endeavours' estimates based on actuals for the completed months of year t-1.

(c) Year t is the forthcoming (or forecast) year. The amounts for that year are to be 'best endeavours' forecasts.

[1] The nominal WACC approved for the year in question.

[2] Calculated using a half year effect on the WACC; uses a semi-annual interest rate.

[3] An opening balance in year t-2 would apply only if any under/(over) recoveries prior to year t-2 had not yet been returned to (or recovered from) customers.

[4] In each forecast year, UE's annual DUoS tariff proposals will achieve an expected zero balance on its DUoS unders and overs account.

As set out in sections 5.1 and 5.2, special treatment of some types of services are required when transitioning to this method of truing up costs in the 2006-2010 regulatory period.

5.1 SPECIAL TREATMENT – SCS TRANSITION

For the SCS service, the 2016-2020 regulatory period is the first time it will be subject to a revenue cap form of control mechanism, consequently the following special adjustments to the formulation in Box 6 is necessary to ensure the transition to this new mechanism does not inadvertently result in under or over recovery of revenues from the 2011-2015 regulatory period.

- When calculating revenue and prices for the 2016 regulatory year:
 - the opening balance in year t-2 and year t-1 year must be zero, and
 - the revenue under/(over) recovery in year t-2 and year t-1 must be zero.
- When calculating revenue and prices for the 2017 regulatory year:
 - the opening balance in year t-2 must be zero, and
 - the revenue under/(over) recovery in year t-2 must be zero.

5.2 SPECIAL TREATMENT – TYPE 5 AND 6 METERING TRANSITION

While type 5 and 6 metering services are effectively subject to a revenue cap under the CROIC requirements, the CROIC requires that the true-up mechanism be calculated using a specific true-up method. To accommodate this alternative calculation into the formulation in Box 6, the following special provisions are required.

- When calculating revenue and prices for the 2016 regulatory year:
 - the opening balance in year t-2 and year t-1 must be zero,
 - revenue from tariffs in year t-2 and year t-1 must be zero,
 - allowed revenue in year t-2 and year t-1 must be zero, and
 - the pass through line for year t-2 will contain the true-up amount calculated in accordance with the CROIC clause 5L.
- When calculating revenue and prices for the 2017 regulatory year:
 - revenue from tariffs in year t-2 must be zero,
 - allowed revenue in year t-2 must be zero, and
 - the pass through line for year t-2 will contain the true-up amount calculated in accordance with the CROIC clause 5L.