NERA
Economic Consulting

NERA Economic Consulting
Darling Park Tower 3
201 Sussex Street
Sydney NSW 2000
Tel: +61 2 8864 6502 Fax: +61 2 8864 6549
brendan.quach@nera.com

Memo

To:	**Judy Green**
Date:	9 August 2007
From:	Brendan Quach
Subject:	**RFM**

Introduction

The purpose of this memo is to set out my review of the Roll Forward Model (RFM) sent by Kenny Yap on Tuesday, 7 August 2007.

I have reviewed the tax value roll forward and it operates correctly. However, I have several comments on other aspects of the RFM:

§ the CPI index used to convert nominal capital expenditure (and disposals) into real values is inconsistent with the index used to re-convert real values to nominal values that are included in the TNSP's regulatory asset base (RAB);

§ the gross-up of capital expenditure to end of year values, does not apply a rate of return that reflects actual inflation in the year that the expenditure occurs; and

§ the inflation adjustment in year ***t-1*** is unnecessary.

Each of these issues is discussed in greater detail below. I have also attached the RFM with all my suggested changes, which are shaded in green.

Issues with the CPI index

The index used to transform new capital expenditure from nominal to real terms (in the Inputs worksheet) is not consistent with the index used to reverse the transformation in the Actual RAB Roll Forward worksheet. As a result, a TNSP's capital expenditure in a given year will not be correctly recorded in its RAB.

This can be demonstrated by making the following changes to the inputs of the RFM:

§ remove all disposals; and

§ input a 100 per cent inflation outcome in 2007-08 (ie, 'Input!D175').

If one were to then compare actual Capex (input rows 31-33) with nominal net Capex ('Actual RAB Roll forward!320:322') it would show:

- that a firm that invests $72 million in 2007-08 (‘Input!D51’);
- the RFM would only increase the RAB by $38.80 million ('Actual RAB Roll forward!D319).

One would expect that if outturn inflation was 100 per cent, an investment of $72 million should result in an increase in the RAB of $104.99 million.[1] However, the RFM only increases the RAB by $38.80 million, a loss to the business of $66.19 million.

The current RFM will underestimate the required change in the RAB whenever outturn inflation is positive.

Suggested changes

- Calculate real capital expenditure using the lag index set out in the Actual RAB Roll Forward worksheet (ie, row 7).

This ensures that the index used to convert actual expenditure into real values in the input sheet is the same as the index used to covert the real actual capital expenditure back to nominal actual capital expenditure in the Actual RAB Roll forward worksheet.

This change ensures that the RFM conversion of new capital expenditure from Nominal *to* Real *back to* Nominal is consistent.

Other Issues with the Calculation of Real Capital Expenditure

Another issue is the use of the vanilla WACC to scale up real actual capital expenditure (rows 12:31 of the *Actual RAB Roll Forward worksheet*). Under this arrangement the new capital expenditure is not compensated for outturn inflation in the year that the expenditure occurs.

Suggested changes

- Replace the use of the “vanilla WACC” with the “Nominal Vanilla WACC (fixed real time varying)” in the calculation of the Real Actual Net Capex (rows 12:31 of the Actual RAB Roll Forward worksheet).

---

1 Outturn inflation of 100 per cent results in a Nominal vanilla WACC (fixed real time varying) of 112.62 per cent. Consequently, an investment of $72 million should increase the RAB by $104.99 million (ie, $\$104.99 = \$72 \times \left| (1+112.62\%)^{0.5} - 1 \right|$).

This approach implicitly assumes that the investment occurs in the middle of the year and that inflation occurs evenly throughout the year. Note that this issue also arises with capital expenditure in the last year of the previous regulatory period.[2]

> This change ensures that the RFM correctly compensates a TNSP for outturn inflation in the year that new capital expenditure occurs.

Issue with the Inflation Adjustment in year *t-1*

It is my understanding that inflation during the final year of the pervious regulatory period will be known at the time of the regulatory determination. Consequently, the inflation adjustment to in year ***t-1*** is unnecessary.

2 This can be correct by – replacing the term "previous_vanilla" (in rows 38:47 of the *Actual RAB Roll Forward worksheet*) with the "Nominal vanilla WACC (fixed real time varying) - 'Input!C182'.