Distribution Price Control Review 4

A guide to the draft financial model

November 2003

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1. Overview

Purpose of the draft financial model

1.1.   Ofgem is required to set the price control for the Distribution Network Operators (DNOs) for the five-year period starting 1 April 2005. A financial model will be used to set the price controls. To improve the transparency of the price control review, Ofgem has decided to publish a draft of the financial model at an early stage in the process to allow all interested parties to comment.

1.2.   The draft financial model calculates allowed revenues for each of the fourteen DNOs and also analyses the financial position of each DNO. The main analysis is for the five years to 31 March 2010 but the draft financial model also includes forecasts to 31 March 2020.

1.3.   Nothing in this model represents a policy stance taken by Ofgem and the relevant price control documents should be consulted where information is sought on Ofgem policies.

1.4.   If you would like a copy of the draft financial model please send a blank email with the subject "Financial Model" to the email address below and a copy will be sent to you.

1.5.   Ofgem intends to publish a revised draft to take account of developments in the proposed approach to setting the price controls in April 2004, in advance of initial proposals being made in June 2004. If you would like to comment on the financial model, please respond by 10 February 2004. Written responses are preferred and they should be sent to:

Sam Kwafo

Regulation and Financial Affairs Division

Ofgem

9 Millbank

SW1P 3GE

Email Samuel.kwafo@ofgem.gov.uk

Fax: 020 79017478   Tel: 020 79017481

How the draft financial model works

1.6.   The draft financial model will include actual and forecast operating costs and capital expenditure data for each of the fourteen DNOs. This mainly covers the five year price control period from 1 April 2005 to 31 March 2010 but also includes data to 31 March 2020. This information is used to calculate allowed revenues for each DNO.

1.7.   Users may study the sensitivities around the financial reports by changing some or all of the inputs into the draft financial model. The draft financial model enables users to select a company, change inputs and other assumptions then view the resulting financial statements for that company. Appendix 2 contains a note on how to run the model.

Structure

1.8.   The draft financial model is made up of a number of sheets. The sheets can be grouped under the following five main functions:

- Data input sheets. The three kinds of input sheet are:

    - **DNO input sheets.** There is a DNO input sheet for each DNO and its purpose is to hold data unique to that DNO.

    - **Selected input sheet.** This sheet holds DNO specific data once a DNO has been selected by the User interface sheet.

    - **Formula input sheet.** The formula input sheet is generally used to hold data that is common to all DNOs.

- User interface sheet. This sheet allows the selection of the company the user is interested in and allows you to make accounting and other assumptions relevant to the chosen company. When a company is selected its data is held in the Selected input sheet.

- The Calculation sheets. Most of the key calculations are done on these sheets. The three calculation sheets are:

  - price control calculations sheet;

  - RAV roll forward; and

  - Capex incentive scheme. The capex incentive scheme sheet provides an example of how the capex incentive scheme could work.

- The report sheets. The three report sheets are:

  - **Financial reports (nominal).** This includes a profit and loss account, balance sheet, cash flow statement and statement of recognised gains and loss, net debt reconciliation, and a reconciliation of movements in shareholders funds. There is also a financial indicators section although this is not populated at the moment with any financial ratios. These reports are all in nominal prices.

  - **Financial reports (real).** This includes a profit and loss account, balance sheet, cash flow statement and statement of recognised gains and loss, net debt reconciliation, and a reconciliation of movements in shareholders funds. There is also a financial indicators section although this is not populated at the moment with any financial ratios. These reports are all in real prices.

  - **Graphs.** The graphs sheet includes graphs of turnover, profit before tax, profit after tax and average RAV. Once the financial indicators sections of the financial reports have been populated there will also be graphs of those indicators included in this sheet.

- Notes to the financial reports. This worksheet contains most of the workings that support the financial reports.

2. Data entry sheets

2.1.   There are three types of input sheets, however the draft financial model is designed so that users only input data into two types of input sheets. This is because the third type of input sheet is the selected input sheet which just holds data for the company you have selected. The two kinds of sheet where you can enter data are the:

- DNO named sheets; and

- Formula input sheet.

DNO named sheets

2.2.   DNO named sheets. There is one of these sheets for each DNO and they contain the majority of the data used by the model. Each input sheet is divided into a number of input areas and in each area, the cells that users can input data into are shaded with the colour green. The input areas are described below:

- **Cost of capital and other assumptions.** Data to be input here includes the assumptions for the cost of debt and cost of equity, depreciation and other assumptions. It is important to note that some data must be input in real prices whilst other data is required to be input in nominal prices. There is guidance on these requirements in the sheets but care must be taken when inputting data into these areas. Inputs in this area are mostly required for the years ending 31 March 2006 to 31 March 2020. Where inputs are not required they are blackened out.

- **Operating costs.** This area covers data for Cost of sales, Operating Costs, FRS17 Costs, and Other provisions. Under Other Provisions, users should overtype the titles: Other 1, Other 2 etc with the description of the provisions they are inputting. Inputs are for the years ending 31 March 2006 to 31 March 2020 and fields that do not require inputs are blackened out and locked.

- **Revenues.** This section contains details of excluded services and de-minimis revenues which are not price controlled. Data should be input into the cells coloured green.

- **Taxation assumptions.** This section includes details of tax assumptions like the UK corporation tax rate, deferred revenue expenditure and disallowable items. Data should be input into the cells coloured green.

- **Dividend assumptions.** This section includes the dividend assumptions. Data should be input into the cells coloured green.

- **Capex Additions.** This section includes details of capital expenditure. Data should be input into the cells coloured green.

- **Differences between regulatory and financial accounts.** The draft financial model is designed to produce accounts on both a regulatory and statutory basis. This input area allows users to specify items that should be taken into consideration in making the switch from regulatory accounting reports to statutory accounting reports or vice versa. Users should overtype the titles Other1, Other2 etc with the relevant titles.

- **RAV.** In this area data is required in 97/98 prices, nominal and 02/03 prices. Users should only concern themselves with cells shaded green as the other cells are not for user input. The green cells in this area are in 02/03 prices.

- **Financial statements and notes to the accounts.** This section allows profit and loss account information to be input for 02/03, 03/04 and 04/05 and balance sheet and cash flow information to be input for

02/03. Data input areas are clearly defined as being those coloured green and are required in nominal prices unless otherwise stated.

- **Capital allowances.** This section allows capital allowance rates and other capital allowance information to be input for 02/03. Data input areas are clearly defined as being those coloured green and are required in nominal prices unless otherwise stated.

Formula input sheet

2.3. The formula input sheet includes assumptions on RPI, gearing, asset lives, accelerated depreciation smoothing periods, writing down allowances, deferred tax discounting period, revenue drivers and the replacement capex adjustment.

3. User interface

3.1.   This sheet allows users to select a company and make assumptions for price control calculations and financial reports. As such the interface to the model is divided into three broad sections: Company, Price Control Assumptions and Financial Statements Assumptions and each section is discussed below. After any changes made in the user interface, the "run" button must be clicked to accept that change.

Company

3.2.   This section features a drop down button that allows users to select the company they are interested in. After the company name has been selected the user must click on the "run" button at the bottom of the user interface to accept the change made.

Price control assumptions

3.3.   This section features three drop down buttons and assumptions made here effect the amount of allowed revenues for a selected DNO. The options available are:

- **Pre/Post Tax WACC.** There are two options available here, you can either assume a pre tax WACC or a post tax WACC.

- **Tax treatment of deferred revenue expenditure (03/04 & 04/05).** Different DNOs may have different treatments of deferred revenue expenditure in 2003/2004 and 2004/2005. This section allows users to choose the appropriate option.

- **Tax treatment of deferred revenue expenditure (05/06 onwards).** The model allows you to use a number of different assumptions for the taxation of deferred revenue expenditure for 2005/2006 onwards.

Financial statements assumptions

3.4.   Generally the options available here are for the preparation of financial statements and do not affect the amount of price controlled revenues. The drop down box called "Faults, Capitalised Interest, Tree cutting etc" switches the financial reports from a regulatory accounting basis to a statutory accounting basis by capitalising or expensing a number of cost items including faults, capitalised interest, tree cutting and all items listed under "differences between regulatory and statutory accounts" in the data entry sheets described above.

4. Price control calculations

4.1.   Data entered into the model is used in a number of calculations mainly to produce price controlled revenues and financial statements and this sheet calculates price controlled revenues.

4.2.   The sheet called "Price Control Calcs" contains calculations and information required to determine price controlled revenues. Price controlled revenues are calculated on the basis that DNOs must be able to raise enough revenues to cover their efficiently incurred operating costs, regulatory depreciation and cost of capital. In addition there are a number of incentive schemes under which DNOs can earn more revenues and the revenues from these schemes are included in the price controlled revenues.

4.3.   One method of estimating the cost of capital is to use the Capital Asset Pricing Model (CAPM) to calculate a Weighted Average Cost of Capital (WACC). This version of the draft financial model uses an estimate of WACC to calculate a return on the Regulatory Asset Value (RAV) and this return is included in the price controlled revenues.

4.4.   DNOs are liable for corporation tax on their profits so the price controlled revenue should include an appropriate allowance for corporation tax. There are two ways in the model for calculating allowed revenues to include an allowance for corporation tax. Pre-tax is a method where the cost of equity in the WACC is grossed up at an appropriate corporation tax rate. Post-tax is where you use the appropriate corporation tax rate to determine the post tax cost of debt and allow the company's forecast tax charge in the determination of revenue.

- **Pre-tax**

  - Rows 10 to 20 of the Price Control Calcs sheet list all the relevant costs, depreciation, return, revenues from incentive schemes and other revenues.

  - Row 21 sums rows 10 to 20.

  - Row 22 calculates the present value of row 21.

- Row 23 is the total PV for each price control block (i.e. cell V23 is the total of the PVs of each year for the five years to 2010).

- Row 25 is the revenues generated from activities that are not price controlled and row 26 is the PV of revenues in row 25.

- Row 27 is the total PV for each 5 year block of activities that are not price controlled (i.e. cell V27 is the total of the PVs of each year for the five years to 2010).

- Row 29 excludes the PV of revenues generated from activities that are not price controlled from the totals in row 27.

- Rows 31, 32, 33 and 34 form a mechanism for calculating the revenue stream in row 37 such that over the relevant price control period the first years price controlled revenue is determined after adjusting the price controlled revenue for the last year of the previous price period by a factor Po. Then in the following years price controlled revenue is adjusted each year by the inflation rate less a factor called x. Revenue is also adjusted each year for the level of growth in customer demand.

- Row 37 is the price controlled revenue and the main objective of the above calculations.

- **Post-tax**

  In order to include a forecast of a DNO's tax liability in the price controlled revenues, a corporation tax calculation based on the company's estimated revenues for each year must be performed. There is a circularity issue here in that you need to know revenue to calculate tax and you need to know tax to calculate revenue. An iterative process has been used to solve the circularity problem such that, for each year, the revenue allowed by the price control calculation generates a tax charge equal to the amount of tax allowed in the price control calculation. However the solution may not be exact for certain years outside the price control period.

4.5. **RAV.** As explained above the WACC estimate is applied to the RAV to determine the return that should be included in allowed revenue. To calculate that return the WACC is applied to the average of the opening RAV and closing RAV in each year of the price control. The RAV numbers are sourced from the sheet called "Rav roll forward" and that sheet is discussed in Chapter 5.

5. RAV roll forward

5.1.   For depreciation purposes the RAV can be divided into three elements: vesting, post-vesting and non-operational.

5.2.   The vesting element relates to assets in existence at the time of the privatisation of the regional electricity companies (RECs) in 1990. The post-vesting element relates to operational assets acquired after privatisation. Non-operational assets relate to non-operational assets acquired from 1 April 2005. Different regulatory asset lives were assigned to vesting and post-vesting and the non-operational element of the RAV will also have a different regulatory asset life.

5.3.   At the 1999 electricity distribution price control review, it was noted that the vesting assets included in the RAV of all the DNOs would have been fully depreciated either before or during DPCR4, and that the depreciation allowances from post-vesting assets alone would not be sufficient to provide appropriate levels of allowed revenue. It was therefore decided in the DPCR 3 determination that for the purpose of calculating the price controlled revenues of the DNOs for the period 2000 - 2005, when vesting assets become fully depreciated the lives of the post vesting assets are shortened to increase the depreciation allowances obtainable from those assets. The difference between the RAV before and after the shortening of the asset lives is then spread over a period of time which for DPCR 3 was 15 years.

5.4.   The sheet works as follows:

   - Row 11 is the opening balance at vesting and for subsequent years to year 2020.

   - Rows 13 to 16 either adds assets (e.g. capital expenditure), or removes assets (asset disposals) from the RAV.

   - Row 17 calculates the depreciation allowance for vesting assets.

   - Row 18 calculates depreciation for post vesting assets and uses "If functions" and other formulas to identify the year in which vesting assets become fully depreciated to determine the year in which the post vesting asset life could be shortened (e.g. from 33 years to 20

years). When the post vesting asset life is shortened the post vesting depreciation charge is sourced from rows 29.

- Row 19 is the RAV used in the calculation of allowed revenues.

- Row 22 is used to calculate the effect on the RAV of shortening the depreciation life of post vesting assets and this amount is then spread over a period of time, which at the moment is assumed to be 15 years.

- Rows 25 to 30. Row 29 is the post vesting depreciation charge based on a shortened post vesting life (e.g. 20 years). These numbers when appropriate are used in row 18. The other lines in this section reconcile the RAV using the post vesting depreciation charge calculated in row 28 but are for reconciliation purposes only and are not to be compared to the RAV numbers in row 19.

- Rows 34 to 38 are used to roll forward assets that have a shorter regulatory life than other assets used in the DNO businesses. These assets are termed non-operational assets and include short life assets like computer equipment.

Appendix 1 Glossary

Abbreviation	Description
Kd	Cost of debt
Ke	Cost of equity
WACC	Weighted average cost of capital
Int	Interest
A/c	Accounting
NTR	Non transferable recharge
EBITDA	Earnings before interest, tax, depreciation and amortisation
EBIT	Earnings before interest and tax
FFO	Funds from operations
RAV	Regulatory asset value
RCF	Retained cashflow
Capex	Capital expenditure
Opex	Operating costs

Appendix 2 Operating instructions

Before you open the model:

1. On the **Tools** menu, click **Options**.

2. Click the **Security** tab.

3. Under **Macro Security**, click **Macro Security**.

4. Click the **Security Level** tab, and then select "Medium".

After you open the model:

Data entry

1. Select the data input sheet of the company concerned. The company data input sheets are the main input sheets and will contain data that is mainly company specific. Data is to be entered into the fields coloured green.

2. Be careful when entering data because some data is required to be entered in 02/03 or 97/98 real prices while other data is required to be entered in nominal prices.

3. Select the "Formula Inputs" sheet. This sheet contains information that can be common to all DNOs. You may enter data into the fields coloured green.

Running the model

1. Select the sheet called "User Interface".

2. The interface is divided into three parts:

    - Company;
    - Price Control Assumptions; and
    - Financial Statements Assumptions.

3. Once you have selected your assumptions, click on the "Run Model" button to run the model.

4. There are four questions asked at the top right of the user interface. Make sure that the answers to all the questions are **yes.**