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2008-13 GAS DISTRIBUTION PRICE CONTROL REVIEW - FINANCIAL MODEL FOR UPDATED PROPOSALS

Ofgem has today published the financial model for its updated proposals in the five year gas distribution price control review. The model is published to assist with the understanding of how the GDPCR allowances have been calculated.

The model also contains a number of indicative financial statements for the GDNs. These are indicative, based on notional assumptions, and do not represent Ofgem's views of the actual or forecast financial position of the GDNs.

Contents

This document contains:

i) An overview of the financial model's purpose and contents;
ii) Appendix I: A detailed guide to the calculations within the financial model; and
iii) Appendix II: A reprise of the explanation of Pots 2 and 3 which were used in the one year control to set allowances for return on the capex and repex overspend within the 2002-07 price control period.

Separately, we have published the financial model itself in spreadsheet form. The model can be accessed via the URL link below:

http://www.ofgem.gov.uk/NETWORKS/GASDISTR/GDPCR7-13/Documents1/GDPCR%20main%20control%20model%20UPDATED%20PROPOSALS%20FINAL%20for%20publication.xls

The financial model for updated proposals is not audited. However, the model is substantially similar to the model for initial proposals, which was audited. The model for final proposals will also be audited.

In addition to the changes to the input data used to calculate the allowances, which are discussed in the GDPCR Updated Proposals document (ref 226/07), there have been some minor changes to the calculations. These comprise: -

- An adjustment to the "Pot 3" allowances for efficient overspend allowed with effect from the year incurred. This represents changes following our review of 2006 and 2007 actual capital and replacement expenditure, including the impact on 2007-08. Further details are given in 5.9.1. below.
- An adjustment to the tax calculation to reflect the intended treatment of goodwill amortisation.

- An adjustment to the tax loss roll-forward opening balance to reflect the tax position at 1 April 2008 as recalculated using the interest rate within these proposals. Further details are given in 5.9.2. below.

All questions on the financial model or this guide to the financial model should be addressed to Heather Glass, Gas Distribution, heather.glass@ofgem.gov.uk, 020 7901 7276.

Overview of the Financial Model

The financial model for the 1 April 2008 to 31 March 2013 gas distribution price control review is intended to calculate the level of allowed revenue required to fund the GDNs' efficiently incurred capital expenditure (capex), replacement expenditure (repex) and operating expenditure (opex). The financial model also includes the calculation of the RAV roll-forward (real and nominal) and the allowed return and depreciation on the RAV.

In addition, the financial model calculates the key financial reporting tables (balance sheet, cash flow, profit & loss account, tax). These are for the purpose of confirming the financial position of a GDN with Ofgem's notional capital structure and tax position. These do not and are not intended to represent the actual or forecast financial statements of the GDNs, who are free to set their own capital structure.

In contrast to the one year control (published in December 2006), which focused on certain areas such as shrinkage and pensions while assuming that others such as operating expenditure and the return on capital were simply rolled forward, the five year control involves a bottom-up analysis of the costs of operating and maintaining a gas distribution network. Much of this analysis takes place outside of the financial model, and so does not have a material impact on the complexity of the model. Indeed in certain areas, the calculations are now simpler, notably the treatment of capital expenditure overspend during the period 2002-07.

Most of the calculations used in this model are the same or very similar to those used in the model employed at the one year control[1]. The majority of changes reflect the move from a one year to a five year control, for example the introduction of a tool to profile revenues if desired and the removal of a number of simplifying assumptions in the financial statements.

Additionally, the model calculates company allowances under the Information Quality Incentive (IQI). This incentive for accurate forecasting calculates companies' capex and repex allowances, plus the strength of incentives for future efficiency, based on a combination of companies' own spending forecasts and Ofgem's views of the required spend. Chapter 4 of our main updated proposals document[2] gives more detail on this incentive.

1. Model contents

The financial model is structured to provide output for one GDN at a time, but contains 8 data input sheets, one per GDN. Whilst the model therefore will only provide the financial statements and allowed revenue for a single GDN at a time, there is a macro button within the model which will run the analysis for each GDN and calculate the key outputs accordingly.

The contents are as follows:

1.1. Price Control Allowance Calculations

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1 http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=18&refer=Networks/GasDistr/GDPCR7-13

2 http://www.ofgem.gov.uk/Networks/GasDistr/GDPCR7-13/Documents1/GDPCR%20Updated%20Proposals%20Final.pdf

- Summary of key inputs per GDN, plus financial inputs (primarily cost of capital)
- Calculation of allowed capex and repex and additional allowed income under the IQI
- Calculations of price control allowed revenue based on key inputs
- Calculations of additional allowed revenue with respect to pension deficits and under-recoveries
- Checks on the model outputs

1.2. Inputs

- Input sheets for each GDN – combination of BPQ data, Ofgem analysis and RAV inputs from the one year control model
- RPI factors

1.3. Financial Statements

- P&L (real & nominal)
- Current Tax (real & nominal)
- Balance Sheet (nominal)
- Cash Flow (nominal)

1.4. RAV roll-forward

- Real RAV roll-forward from 1 April 2005
- Nominal RAV roll-forward from 1 April 2005

1.5. Outputs

- Details of allowed revenue & RAV roll-forward by GDN
- Breakdown of change in allowed revenue by year and in total for the five year period, by GDN and overall

2. Summary

The GDPCR main control financial model does the following:

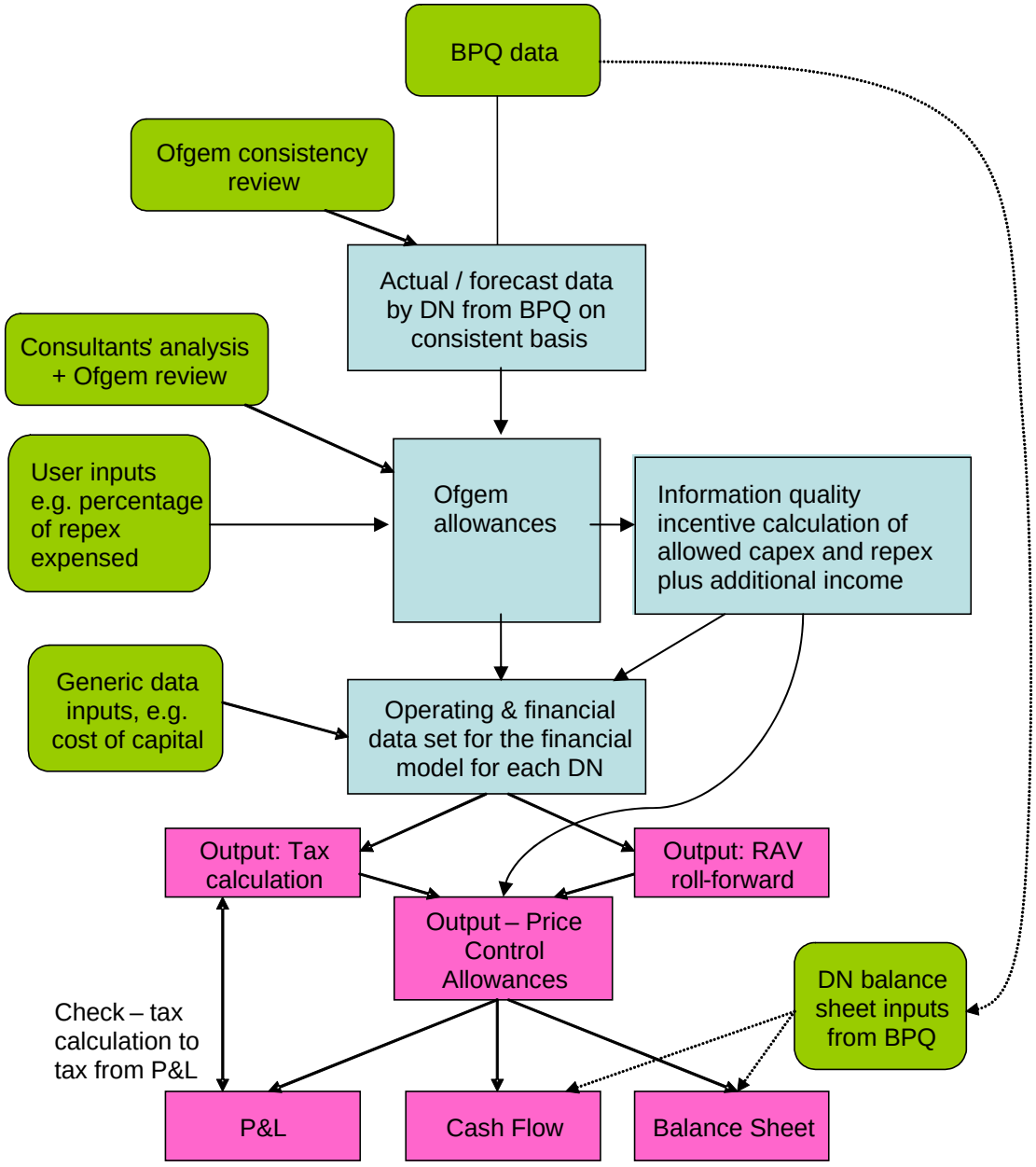
- amalgamates the various sets of data provided by the GDNs;
- adjusts for Ofgem's analysis;
- calculates allowed capex and repex expenditure using the IQI matrix;
- overlays Ofgem's generic assumptions on financial inputs, treatment of RAV additions;
- generates a roll-forward of allowed efficient RAV expenditure
- generates price control allowances for 2008-09 to 2012-13;
- profiles revenues over five years if required;
- presents indicative financial statements based on a simplified notional capital structure for each GDN; and
- provides summary information on the allowed revenue, the change in allowed revenue, and the breakdown of the change in allowed revenue and tax for each GDN.

Appendix I – Detailed Review of the Financial Model

1. Model structure and hierarchy

The diagram below provides a picture of how the financial model has been constructed.

Figure 1: Hierarchy and structure of the financial model.



2. Inputs

Within the GDPCR 2008-13 financial model, the key inputs for the allowances over the five years are based on analysis by both Ofgem and our consultants on the appropriate levels of costs. These have been calculated based on actual costs and forecast cost trends predicted by the GDNs and following our view.
All the data for each GDN is consolidated into one GDN-specific input sheet within the model.

These sheets also contain all relevant company-specific inputs for the years 2005-06 to 2007-08. Data prior to 2008-09, the first year of the main control, is included solely to facilitate comparison between this price control and earlier years and is not used in calculating allowed revenue for the years 2008-09 to 2012-13.

The input data is in a number of different pricing formats (2000 prices, 2005-06 prices, nominal, or nominal to 2005-06 then real). Therefore there are different adjustments made to conform the various inputs to the 2005-06 prices used in the price control allowance and RAV roll-forward calculations. All data in the model is based on financial years ending March 31.

The process for extracting the various sections of input data within that sheet is as follows: -

The detail below is split into the different sections within the input worksheets, labelled “East”, “London” etc within the financial model and classified by section in each sheet.

2.1. Allowances

These numbers relate to the period prior to 31 March 2008 only. For further details on these allowances please refer to the manual for Ofgem’s one year price control model.

2.2. Forecasts

These numbers relate to the period from 1 April 2008 to 31 March 2013. They are adjusted numbers from Ofgem’s review of company forecasts.

For capex and repex there are two views given: the GDN views and Ofgem’s view. This is because they combine to form the inputs to the information quality incentive calculation. This is explained further in section 4 below.

The numbers for 2008-13 controllable opex include pension costs and shrinkage. Shrinkage allowances are primarily influenced by changing levels of gas prices and throughput, and therefore we have retained the assumptions from the one year control.

Non-controllable costs, which comprise license fees and rates, are allowed on a “pass-through” basis where, subject to certain reasonableness tests, costs are allowed as incurred. Therefore, to better demonstrate the impact of Ofgem’s proposals, we assume that allowed costs are unchanged year-on-year.

2.3. Allowances – detail

This section contains further detail on the underlying allowances to 31 March 2008, which are summarised in 2.1 above.

2.4. Tax allowances

The section gives some detail on inputs to the tax calculation to 31 March 2008. It also includes the portion of pensions allowed as cash in all years, which is an input into the tax calculation.

2.5. Balance Sheet Information

This data is all extracted directly from the BPQs. However, Ofgem's core concern is the impact of its proposals on a notional GDN with Ofgem's assumed gearing and interest rate structure. As such, much of this data is used only as a sense check when developing a notional balance sheet for the GDNs.

2.6. RAV analysis

This section includes the allocation of overspend and underspend for 2002-07 into one of three 'pots'. This analysis was carried out for the one year control and is detailed in the manual for the one year control model.

This section also includes the one year price control allowances for capex and repex.

2.7. One year control model outputs

This section contains outputs from the one year control model for 2002-05 that are used in order to present calculations, primarily the RAV roll forward, for years prior to 2008-09.

2.8. Disaggregated inputs

This table breaks down capex into LTS and storage capex, which is deducted for the purposes of the IQI calculation (see section 4), and all other capex. Repex is broken down into mains and services repex (covered by the mains replacement incentive) and other repex. Other repex includes rechargeable diversions, which is covered by the mains replacement incentive, but this forms less than 0.1% of total repex.

2.9. RPI factors

Ofgem uses the average RPI from each month of each price control year when converting from real prices to actual cash allowances under the RPI – X mechanism.

Input data for 2008-13 is brought into the model in 2005-06 prices. Tables of average and closing RPI factors are given for each year, for the purpose of converting between nominal and real values within the price control calculations. All allowance calculations are performed based on average year RPI (193.11 for the current review in 2005-06 prices).

3. RAV roll-forward

The RAV roll-forward calculation drives the allowances for return on RAV and depreciation.

There are five RAV roll-forward tables within the "RealRAV" sheet. An explanation of Ofgem's 'three pots' system can be found in Appendix III and the glossary on page 20.

- Allowed RAV for calculating annual returns (rows 10-14)
- Allowed RAV including Pot 3 overspend (rows 19-23)
- Ofgem RAV (rows 30-34)
- Pot 2 RAV (rows 94-102)
- Pot 3 RAV (rows 107-119)

The RAV calculation which is used within the financial model is the "Ofgem RAV", rows 30 to 34. The calculations of Pot 2 & Pot 3 are a replication of the analysis within the one year control financial model, and result from the decisions within the one year control on allowing the cost of the capex overspend within 2002-07.

The "Ofgem RAV" – i.e. the RAV to be used in the published RAV roll-forward tables – is equal to all efficient investment – i.e. Opening RAV + price control allowances + Pot 3 overspend + net Pot 2 spend (which may be positive in overspend scenario or negative in underspend scenario).

3.1. Opening RAV

Opening RAV (1 April 2005) is taken from the one year control financial model, where the Ofgem RAV calculation for 2002-07 was completed.

3.2. Depreciation

There are two methods for calculating depreciation on Gas Distribution Assets depending on whether they were acquired prior to March 2002 or after March 2002.

The model calculates depreciation separately for each of:

- Previously allowed RAV assets purchased pre-2002; (pre-2002 method)
- RAV assets allowed in 2002-03 and thereafter (post-2002 method)
- Pot 2 (post-2002 method)
- Pot 3 opening balance: Additional RAV assets included in the RAV as at 1 April 2002; (pre-2002 method)
- Pot 3 additions (post-2002 method)

As a result of combining the above, the depreciation for each of the five categories of RAV roll-forward is evaluated. Details of depreciation on Pot 2 and Pot 3 assets are given in appendix III.

3.2.1. Depreciation on pre-2002 assets

Depreciation on pre-2002 assets = gross opening assets * depreciation factor

where depreciation factor = $\frac{(28*2+1)-i}{\left(\frac{(28*2)(28*2+1)}{2}\right)}$ for i = 1 to 56, i.e. numerator goes from 56 to zero, and denominator is sum of 1 to 56, i.e. 57/2 * 56. These depreciation factors were used in the 2002-07 price control. The formula has been checked to add to one if rolled out for 56 years. The formula is equivalent to assuming that the assets were purchased evenly over time, and that each has a life of 56 years.

The RAV is adjusted for disposals, which are removed from the gross RAV at the level of disposal proceeds, and the equivalent proportion of depreciation is removed from the accumulated depreciation balance.

The RAV calculations for Pre-2002 assets are in the RealRAV sheet, rows 46-56

3.2.2. Assets purchased following March 2002 and allowed for in the price control allowances.

Annual depreciation = Cumulative cost / 45.
Depreciation removed proportionately for disposed assets

The RAV calculations for Post-2002 assets are in the RealRAV sheet, rows 64-81

4. Information Quality Incentive (IQI)

4.1. The IQI is a mechanism designed to encourage GDNs to bid their best view on the capital and replacement expenditure that they expect to incur. Companies who bid at or around Ofgem's view of the appropriate level of capex will receive a bonus in the form of additional income (equivalent to a small increase in the rate of return on RAV).

4.2. The IQI is simplified by setting a single IQI rate for each ownership group, and a single IQI rate across the five years of the price control. This avoids any concerns of distorting investment incentives and providing perverse incentives to re-allocate expenditure between group companies and within different years of the price control.

4.3. There are two outputs from the IQI to the model:

- An additional income calculation. This is allowed as additional cash income in the year; and
- An allowed expenditure calculation. This results in a calculation of allowed capex and repex as a proportion of Ofgem's view.

4.4. In addition, the IQI provides an incentive rate, which will be used to calculate gains and losses at the next price control review.

4.5. The inputs to the IQI calculation are:

- GDN ownership group – GDN forecast capex and repex, post Ofgem normalising adjustments.
- GDN ownership group – Ofgem view of required capex and repex.

4.6. The outputs of the IQI calculation are, for each GDN:

- GDN:Ofgem ratio. This is equal to GDN forecast divided by Ofgem view of capex and repex for the ownership group, on a simple sum basis (i.e. sum of forecast for 5 years for all GDNs divided by sum of allowance for 5 years for all GDNs).
- Allowed expenditure ratio. This is based on a formula of (allowed expenditure ratio for GDN:Ofgem ratio of 0) + (Actual Ratio * increment rate)
- Efficiency incentive rate. This is based on a formula of (incentive rate for GDN:Ofgem ratio of 0) - (Actual Ratio * increment rate)

- Allowed income ratios. This is based on a quadratic formula for allowed income as a function of the GDN:Ofgem ratio.

4.7. All allowances are then set by taking the allowed ratios, and applying to the Ofgem view on capex and repex for the individual GDN. For example, an allowed income ratio of 2.5 applied to a GDN with Ofgem allowed capex and repex of £160 million would result in IQI additional allowed income of £4.0 million. This is equivalent to allowing a higher return on RAV for those GDNs who bid closest to Ofgem's view.

4.8. The quadratic formula for the allowed income is derived to ensure the matrix is "incentive compatible" – i.e. that the companies would lose out by bidding either more or less than their forecast. While the formula is therefore moderately complex, the aim is to produce the "IQI matrix" which shows that the combined benefit for a GDN is maximised by bidding equal to their forecast spend.

4.9. Both the forecast and allowed spend exclude the LTS category of capex. Therefore, the price control calculations include the non-LTS capex allowance per the IQI and the LTS capex based on 100% of Ofgem's view.

The additional income is calculated in Row 34 of the IQI sheet – as equal to the allowed income ratio (row 33) multiplied by the Ofgem view (row 7). This feeds directly into the "Allowed Revenue" sheet.

The allowed capex and repex are calculated in Rows 37 and 38 – as equal to the allowed expenditure ratio (row 36) multiplied by the Ofgem view (fed from the Input data for capex less LTS capex and total repex). LTS capex is added back in lines 40-42 to give total allowed post-IQI expenditure.

The capex and capitalised portion of repex then feed into the RAV direct from line 41 into the RealRAV sheet (line 64).

The expensed portion of repex then feeds into the Input sheet line 83, and from there into the allowed revenue calculation. All repex allowances are split between expensing and RAV additions using line 70 of the input sheet (50 per cent in the base case).

5. Price Control Allowed Revenue

The allowed revenue for 2008-13 is calculated as the sum of:

- controllable opex allowance
- non-controllable opex allowance
- repex allowance
- Net RAV additions
- PV of change in RAV
- capex roller incentive allowance/(cost)
- cash received or forfeited under the information quality incentive (IQI)
- tax allowance (based on actual tax payable)
- Other allowances (under-recoveries, pension deficit)

5.1. Controllable Opex Allowance (includes ongoing pension allowance and shrinkage)

For FY08 (column G) this is the sum of three separate allowance calculations for pensions, shrinkage, and other controllable opex. The manual for the one year control model details this calculation.

For the main control, the model includes a total controllable opex figure that already includes shrinkage and ongoing pension allowances.

5.2. Non-controllable opex allowances

These items are a pass-through where allowances are equal to actual out-turn. Therefore the allowance is indicative only. For the main control they are rolled forward from the non-controllables for FY08 within the OPEX BPQ, being Formula Rates + Ofgem Licence Fee.

5.3. Repex allowance

This is the expensed portion (currently 50 per cent) of total allowed repex for the main control. This number is taken from the IQI sheet.

5.4. Net RAV additions

This is the allowance for new amounts in the RAV (which will be effectively offset by the PV of the closing balance in 5.5. below to give a net allowance of the return on RAV).

This calculation is performed in the "RealRAV" sheet which rolls forward the RAV for the main control (columns H to L). This calculation is in row 32. This then feeds into the price control allowance calculation in "Allowed Revenue" sheet – row 24.

This is a sum of:

- Capex allowance. Both capex and repex are outputs of the IQI calculation sheet.
- Capex element of repex allowance: equal to total repex less opex element of repex allowance

5.5. PV of change in RAV

The closing RAV is equal to opening RAV + RAV additions (see 5.4. above) less RAV depreciation, plus disposals. Disposals are assumed to be zero for 2007-08.

The PV of change in RAV = Opening RAV – Closing RAV / (1 + vanilla WACC)
The allowance for this is calculated in mid year prices by multiplying by (1 + vanilla WACC) ^ 0.5, since all price control allowances are assumed to be earned evenly through the year.

This calculation is performed in "Allowed revenue" sheet – row 36, based on the opening and closing balances from "RealRAV" in rows 30 and 34.

5.6. Capex incentive payment / (receipt)

This is equivalent to the RAV allowance calculation (net additions + PV change in RAV) applied to the Pot 2 RAV.

This calculation is performed in "RealRAV" rows 130 to 136, and the total is fed into the "Allowed revenue" sheet – row 25.

5.7. IQI

This is the additional income allowed under the IQI; see section 4.7. above

5.8. Current Tax allowance

The tax allowance is calculated as the after tax (net) allowed taxable profit, grossed up for tax, to reflect that the tax allowance is itself taxable. The allowed taxable profit is calculated as follows: -

Profit chargeable to corporation tax (PCTCT) =

- Price control allowances (excluding the tax allowance) with no corresponding chargeable expense (I); less
- Chargeable expenses with no corresponding price control allowance (X); plus
- Price control allowance for tax (T) – which is itself taxable;

Therefore, T must be set such that both of:

PCTCT = I – X + T; **and**
T = t * PCTCT where t = marginal tax rate

apply. Combining these equations by eliminating PCTCT gives the tax allowance (T) as a function of income items, expense items, and the current tax rate.

$\Rightarrow T / t = I – X + T$

$\Rightarrow T = t (I – X + T)$

$\Rightarrow T – tT = t (I – X)$

$\Rightarrow T = t (I – X) / (1 – t)$

The calculations above are:

I (allowances with no corresponding tax expense) =

- RAV additions (5.4)
- Change in RAV allowance (5.5)
- Capex incentive cost (5.6)
- Additional income/penalty under information quality incentive (4.7)
- Additional allowances (see 5.9 below)

X (chargeable expenses with no corresponding price control allowance) =

- Interest payable (see below)
- Proportion of repex allowance included in RAV
- Tax depreciation
- Capitalised pension contributions[3].

[3] Under UK tax rules, all cash pension contributions are allowable as an offset to taxable income. This will include the portion of pension contributions allocated to capex, and where the regulatory allowance will be in the form of additions to the RAV.

Interest is calculated as opening gearing * average RAV * corporate debt interest rate. In calculating allowances for updated proposals, FY09 opening gearing is set to Ofgem's assumption of 62.5% and rolled forward on the balance sheet (see section 7.3).

If the tax allowance becomes negative, it is then changed to zero since negative tax allowances are not allowed, and this will feed through into the deferred tax calculation (not relevant to allowed revenue).

The current year tax allowance is calculated in the "Tax" sheet, row 31 on a net basis, and grossed up for tax in line 35, subject to adjustment for brought forward tax losses (below).

5.8.1. Brought forward tax losses

In addition to a tax calculation for the current tax allowance, a brought forward regulatory tax loss calculation is included in the model. The notional GDN which achieves a tax loss will be assumed to roll those losses forward to offset against future profits.

The brought forward tax loss calculation is calculated based on the taxable income using allowed revenues. Within each year the current year tax allowance (calculated as in 5.8. above) is then offset against the previous year's closing balance of brought forward losses. For 2008-09, this balance is derived from the one year control model, adjusted for the interest rate used in the main control model, as outlined in 5.9.2. below.

This is done as follows:

- First, calculate the **net** tax allowance, as per 5.8. above, before grossing up for tax (i.e, as if no tax were payable on the tax allowance).
- If there are brought forward tax losses (which have also not been grossed up as no tax was allowed on these losses), then offset the losses against the net tax allowance.
- This gives a net tax allowance, after use of brought forward losses.
- If the allowance is positive, then gross up for tax – to reflect the tax payable on the tax allowance.

The full tax calculation is in rows 31-35 of the "Tax" sheet.

The tax calculation is fairly detailed. However the tax allowance then feeds into allowed revenue, which in turn feeds the P&L, and therefore in turn the tax calculation.

As a result, it is possible to check exactly whether the formula is giving the correct levels of tax allowance. If the current tax payable (after use of losses) is equivalent to the tax allowance, then the allowance is correct.

Check: The total allowances including tax allowance calculated using the formula are then input into the P&L as turnover, and the tax calculated using that turnover against chargeable costs. This is checked in row 37 of the "Tax" sheet. This check has been performed for all GDNs, some of whom have losses, some making profits, and some a combination of profits and losses, The calculation works in all scenarios.

5.9. Other allowances

The model is set up to calculate the following other allowances.

- Allowance for funding of the pension deficit for active members that was incurred during the 2002-07 price control period
- Over-/(under-)recoveries of pension allowances during the 2002-07 price control period
- Allowance for NTS charge relating to pension deficits for former employees of GDNs who were non-active as of 31 May 2005 (GDN sales)
- Returns on Pot 3 RAV not allowed within the 2002-07 price control allowances
- Allowance for under-recovery of tax from the 2007-08 price control.

The other allowances are established in the "Allowed revenue" sheet, rows 40-44. The three relating to pensions are fed from the "Pensions Allowances" sheet which takes as inputs the NPV of the amounts required, subtracts the amount allowed in FY08 and then converts the remainder to an annual allowance for the years FY09-FY13. The Pot 3 RAV returns are evaluated in the "RealRAV" sheet, rows 122-127. The tax under-recovery allowance is calculated in the "Tax" sheet, rows 39-44

5.9.1 Pensions and pot 3

The manual for the one year control model explains how the pot 3 and pensions under or over recovery figures, plus the two pension deficit figures, are calculated.

The main control model brings in data from the one year control model on:

- the total under- or over-recovery, or deficit, and
- the amount allowed in 2007-08.

In the case of under recoveries, the model calculates the amount remaining to be recovered over the period 2008-13 and uses the vanilla WACC to allocate this amount between the five years. For the deficit closures, the model rolls forward the allowances from 2007-08, with an adjustment for inflation (to make the allowance flat in nominal terms) if appropriate.

In the case of Pot 3, the inputs have changed slightly since our one year control final proposals to reflect the actual capital and replacement expenditure in 2005-06 and 2006-07. For all GDNs this results in a very small change to Pot 3, and therefore to the amount that should have been allowed in the rollover year 2007-08. Therefore the total allowance for 2008-09 includes a small adjustment for this, calculated in RealRAVH130.

5.9.2. Under-recovery of tax for 2007-08

This is the difference between the tax actually allowed for 2007-08 (calculated using the rate of real interest implied by the WACC from the 2002-7 control plus inflation at 2.5%) and the tax that companies would pay for that year given an interest rate closer to that actually prevailing in 2007-08. For this rate we have used 6.05%, which is the interest rate assumed for the 2008-13 period. Both of these tax inputs are calculated using the one year control model and brought into the main control model via the company input sheets.

The main control model uses the vanilla WACC to allocate this under recovery between the five years of the main control. It then divides the results by (1+ tax rate) so that companies are not allowed additional tax on this amount. Where, even after adjustment, the companies have a tax loss in this year, the tax loss amount is then carried forward to be the opening balance for 2008-09.

5.10 Profiling

The financial model provides calculations of allowed costs for each of the five years of the price control.

Within our price reviews to date, these allowed costs have in general been "profiled" for presentational purposes. The effect of profiling is to present a single number for change in allowed revenues year-on-year within the price control period. This provides stability of prices and also an underlying message on whether GDNs are being expected to reduce or allowed to increase costs within the price control period. Under profiling, the first year change is presented as "P0" and the annual changes are presented as "X" within RPI – X, i.e. a positive X reflects an annual reduction in real allowed revenue.

The GDN allowances have not been profiled in setting our updated proposals allowances. However, we have provided a tool which allows comparison of the alternative presentations of allowed revenues, under four scenarios: -

- X = 0
- X = 3
- P0 is unprofiled, X is profiled
- P0 is approximately unprofiled, whilst setting X to the nearest 0.25 per cent per annum

6. Other Model Sheets

6.1. Output checks

The 'output checks' sheet calculates allowances for the main control using the methodology for the 2002-07 price control, when there were some differences: -

- there was a metering adjustment – which has been included as a separate adjustment line in the 2002 – 07 allowance calculation.
- the WACC return on average RAV and depreciation were calculated separately, (with total comparable to Net RAV additions, plus PV change in RAV)
- the tax allowance was an explicit %age of RAV based on the difference between a pre-tax cost of capital and vanilla WACC
- there was no capex roller incentive from the previous control

Check: the total annual allowances for 2008-13 under the "change in RAV" method are then reconciled to the total allowances under the (simpler) return on average RAV method used in the 2002-07 control. The following items are considered and it is flagged if the unexplained difference is greater than £0.25m

- tax
- 6 month PV difference between return on average RAV all payable in mid-year values and PV return forward-valued to mid-year values. This relates to the fact that the "average RAV" method gives mid-year allowances that are actually calculated in end-of-year values
- difference between 6 months return on net RAV additions on simple (average RAV) and compounded (change in RAV forward-valued) basis

6.2. Nominal RAV

There is also a nominal RAV calculation, which is reconciled back to the RealRAV calculation sheet. For this to be the case, there is a "Regulatory Indexation Allowance" in each year which is applied to the RAV (both Gross Additions and Cumulative Depreciation).

All nominal RAV calculations are therefore at year end RPI – i.e. : -

- Opening RAV (Gross RAV and cumulative Depreciation) is indexed from the 31 March opening RPI to the 31 March closing RPI
- All depreciation is calculated off this closing balance
- All additions to and removals from the RAV are forward valued to the year end RPI prior to addition to the RAV.

As a result the RAV reconciliation is therefore done by comparing the Nominal RAV, divided by the difference in year end RPI and 2005-06 average RPI, to the real RAV.

The nominal RAV can be used to measure debt/RAV ratios, and therefore the use of a year-end measure is appropriate.

6.3. Breakdown output

There is an analysis of the change in allowed revenue between 2007-08 and 2002-13 in the "Breakdown output by DN" sheet. This reflects an allocation of the impacts of the various changes in allowances and policy. This breakdown is for information only, and does not impact allowances.

7. Financial Reporting Tables

The model also produces a Profit & Loss Account, a Balance Sheet, a Cash Flow, and a current tax note. All statements are based on regulatory assumptions where they exist. This includes: -

- regulatory income and allowed costs, regardless of actual costs for the historical years;
- notional balance sheet assumptions, which use the GDN balance sheet forecasts as a guide, but substitute assumptions for a notional GDN with Ofgem assumptions on creditors, debtors, stock, debt, and no intercompany balances. Where no notional assumption is used, opening balances are taken from the GDN BPQ data.

The following tables have been produced: -

Table	Real	Nominal
P&L	Yes	Yes, based on real table
Tax	Yes	Yes, based on nominal P&L & real tax tables
Balance Sheet	No	Yes, based on input

		data, consistent assumptions & notional opening debt.
Cash Flow	No	Yes, based on P&L and movements in notional balance sheet.

7.1. Profit and Loss Account

The Real Profit and Loss Account using the price control allowances in 2005-06 prices is calculated in the "P&L" sheet. The nominal P&L is in "P&L (nominal)"

The inputs to the profit and loss account are as follows:

7.1.1 Real P&L

Operating profit: sum of

- Turnover – allowed turnover from the price control calculation. Note that for 2005-07 this represents the allowed turnover before profiling, not the allowed turnover after profiling, nor the actual turnover
- Controllable Operating costs (allowed)
- 100% repex (allowed)
- Non-controllable Operating costs (allowed) – includes NTS pension charge (see 5.9 above)
- Accounting Depreciation (actual/forecast, from BPQ)
- Goodwill Amortisation (based on change in balance sheet – use nominal & work back)

Note that the model calculates total turnover using formula turnover (from allowed revenue sheet) plus non-formula turnover (from Input sheet). Non formula costs (which for updated proposals are set to equal turnover) are then deducted leading to no impact on operating profit.

PBIT = Operating Profit + profit on disposal of fixed assets (taken from nominal P&L – 2006 and 2007 only)

PBT = PBIT – Interest

where interest = average RAV * opening gearing * interest assumption

PAT = PBT – Current Tax – Deferred Tax

where current tax is from tax calc, deferred tax assumes IFRS treatment, i.e. 28% tax from 1 April 2008 including deferred tax. This is a simplifying assumption which may not reflect actual deferred tax liabilities.

Retained Profit = PAT – dividends

where dividends = return to shareholders = dividend yield from input sheet * average RAV * (1 – gearing)

7.1.2. Nominal P&L

Equal to real P&L * inflation, with the exception of the lines listed below. The model inflates forecasts using half yearly averages for RPI in 2005-06, and 2.5% per annum thereafter.

The exceptions are: -

Goodwill amortisation = Change in balance sheet goodwill – assuming balance sheet goodwill is nominal
Profit on disposable assets (in nominal terms) is taken from the Input sheet.

7.2. Tax calculation

The Real Tax Calculation using the price control allowances in real 2005-06 prices is calculated in the "Tax" sheet. The nominal tax calculation is in "Tax (nominal)".

The current profit chargeable to corporation tax is calculated as:

- PBT from P&L
- add back Accounting depreciation and Goodwill Amortisation from P&L
- subtract capital allowances / tax depreciation
- subtract capitalised pension contributions
- subtract pension deficit funding contributions
- subtract profits on disposal
- subtract amortisations of capital contributions and finance leases (which are assumed zero within the current model)

Capital allowances are calculated on a nominal basis and the real values are derived from the nominal values. The capital allowances are taken from GDN forecasts, adjusted to reflect the percentage difference between GDN forecasts and post-IQI Ofgem allowances.

Rows 25-28 in the Tax sheet calculate carried forward tax losses, =

- Tax losses brought forward, less
- Brought forward tax losses used, plus
- New tax losses incurred in year

Rows 31 to 35 calculate tax allowance, as outlined in section 5.8 above.

7.3. Balance sheet

The Balance Sheet with 1 April 2008 debt adjusted to Ofgem notional debt is in "Balance Sheet (nominal)". Each balance sheet is rolled forward using the corresponding P&L calculation.

A number of entries to the balance sheet and cash flow are either directly calculated from the allowance model (e.g. profit) or are driven by Ofgem's notional financial structure (e.g. borrowings). For other items, we have taken companies' BPQ submissions and made appropriate adjustments, largely for consistency between companies.

The "Input" sheet allows the user to adjust the 2008-09 opening balance sheet gearing (cell G61) and proportion of debt that is index linked over the period of the price control (drop down menu in row 10).

7.3.1. Non-current assets

- Goodwill: Direct feed from BPQ for 2005-06, rolled forward using goodwill amortisation from P&L thereafter.
- Tangible Assets: Opening balance at March 2006 direct feed from BPQ.
- Movement in Tangible Assets: Accounting Depreciation + Nominal capex – book value of disposed assets where nominal capex is based on actual, not allowance.

7.3.2. Current assets

- Cash at bank – direct feed for March 2006 then set to target number (model assumes zero)
- Stock and trade debtors based on constant working capital ratio assumptions (set out in rows 65-67)
- Other debtors and investments assumed zero

7.3.3. Current liabilities

- Short-term Borrowings and other short-term creditors set at zero
- Trade creditors based on constant working capital ratio assumptions

7.3.4. Non-current liabilities

- Closing borrowings at 31 March 2008 set at closing RAV * notional gearing
- Change taken from Cash Flow (nominal)
- Indexation on any index-linked debt is calculated in row 62 and added to closing borrowings in the relevant year
- Other long-term creditors set at zero

7.3.5. Provisions

- Deferred tax – opening balance from BPQ, movements from P&L
- Current tax – closing balance each year set at 50 per cent of current tax
- Pension deficit – opening balance from company information and Ofgem's forecasts, no movement (assumes falls with deficit funding)
- Environmental and Restructuring provisions – opening balance from BPQ, then flat
- Other provisions – from BPQ until 2007-08, then flat.

7.3.6. Capital and Reserves

- Opening balance for share capital and P&L reserve at March 06 – direct feeds
- Opening balance for "other reserves" – solved from the balance sheet
- Movements in share capital – none
- Movements in P&L and other reserves – one kept flat, other moves according to retained profit

For 2006, the balance sheet will automatically balance due to the backsolving of the other reserves. Beyond 2006, whether the balance sheet balances is a check of the integrity of the inputs.

7.4. Cash Flow

The Cash Flow statement, which is based on debt at 1 April 2008 adjusted to Ofgem notional debt is in "Cash Flow (nominal)". Each cash flow is calculated based on the corresponding P&L calculation.

This is calculated as the sum of: -

- Operating Cash Flow
- Return on investments and servicing of finance
- Tax
- Dividends
- Capex
- Financing

in order to get to a cash flow – note that it is the financing number not the cash flow which is the relevant output, as cash is assumed zero from 2007.

7.4.2. Operating cash flow

- Operating profit, depreciation, amortisation – feed from nominal P&L
- Less Profit/(Add Loss) on disposal of fixed assets – feed from BPQ – assumes nominal
- Decrease / (increase) in stocks, trade debtors, other debtors & current assets feed from balance sheet
- Increase / (decrease) in trade creditors, other short-term creditors, other long-term creditors feed from balance sheet
- Increase / (decrease) in provisions feed from balance sheet on environmental and other provisions
- Cash flow from exceptional items: change in restructuring provisions from the balance sheet

Sum of above gives operating cash flow

7.4.3. Non-operating cash flow

- Interest – follows P&L
- Pension deficity contributions – from Pension Allowances sheet
- Tax – follows P&L plus change in current provision.
- Dividends paid – direct from P&L
- Capex & Disposals of fixed assets – actuals from RAV roll-forward schedule

Sum of above gives non-operating cash flow

7.4.4. Financing

Financing cash flow = (operating + non-operating) * (- 1), adjusted for the change in actual cash in FY07 only, to change from opening to target cash (i.e. zero).

Glossary

The following terms are used within the guide to the financial model: -

BPQ – Business Plan Questionnaire – a detailed review of actual and forecast business performance prepared by the GDNs for Ofgem using a format proposed by Ofgem.

Capex/CAPX – Capital Expenditure

GDN – Gas Distribution Network – one of the eight regulated gas distribution networks within Great Britain

GDPCR – Gas Distribution Price Control Review – the ongoing review into the resetting of the price control for the eight GDNs for the period 2007-13.

IQI – The Information Quality Incentive, a mechanism designed to encourage GDNs to bid their best view on the capital and replacement expenditure that they expect to incur.

LTS – The Local Transmission system for gas, a pipeline system operating at >7barg that transports gas from NTS offtakes to distribution systems. Some large users may take their gas direct from the LTS.

NTS – The National Transmission System for gas, currently owned and operated by National Grid, for which a price control was set together with the price control for gas distribution for the period 2002-07.

Opex – Operating Expenditure

P&L – Profit and Loss Account

PAT – Profit After Tax

PBT – Profit Before Tax

PBIT - Profit Before Interest and Tax

Pots 1-3 – Ofgem's treatment, as part of the one year gas distribution price control, of GDNs' capital and non-mains replacement expenditure during the period 2002-07.

Pot 1 – "wasteful and unnecessary" expenditure – outside the price control as no allowances given. Pot 1 also includes other spend which is not allowed in the RAV, e.g. related party margins, GDN sales costs.

Pot 2 – "efficient overspend" – included in the RAV, but no allowances given for depreciation or return in the first five years following inclusion

Pot 3 – "re-opener" – included in the RAV, allowances given (including allowances for under-recoveries) as if included from the period incurred.

RAV – Regulatory Asset Value – the value of capital investment in networks on which Ofgem allows, within the price control allowances, a return on capital and a depreciation return.

Repex – Replacement Expenditure

RPI – Retail Price Index – used by Ofgem as an indicator of inflation when calculating changes in allowances.

SO – System Operator – an activity within the National Transmission System regulated by Ofgem within the Transmission Price Control Review

Transco – the owner of the eight GDNs prior to GDN separation in 2003-04

Vanilla WACC – the WACC calculated on the basis of pre-tax debt, post-tax equity, which is equivalent to the cash allowance required to meet financing obligations.

WACC – Weighted average Cost of Capital – the average cost, given assumed proportions of debt and equity, of financing an entity.

Appendix II – Pot 2 and Pot 3

Pot 2 and Pot 3 are different treatments of 2002-07 "overspend" between allowed and actual capex and non-mains repex. Our one year control initial proposals document gives more information on the treatment of overspend.[4]

"Overspend" is calculated as follows:

- Actual capex + actual capitalised repex = Actual CAPX + 50% repex allowance + 100% of non-mains repex variance
- Allowed capex + allowed capitalised repex = Capex allowance + 50% repex allowance
- Overspend = Actual – allowable = CAPX variance + non-mains repex variance

The Pot 2 RAV and Pot 3 RAV are fed from the input sheet allocation of overspend into Pot 1 (disallowed and therefore outside the financial model), Pot 2 and Pot 3, which is input from Ofgem's analysis by GDN and extracted to the Input sheet, rows 123-125.

As a result of the implications of Pot 2 and Pot 3, the RAV roll-forward table has been split into various separate tables, which combined the 2002-07 allowed RAV with the over-spend, as allocated between Pot 2 and Pot 3, to get to a total Ofgem RAV and a series of price control allowances. Detail is given below:

RAV roll-forward calculations

- Allowed RAV for calculating annual returns

This is the table of RAV which can be reconciled to the combined price control allowances for capital and depreciation (after taking account of the capex roller) for each year from 2002-03 onwards. Therefore for 2002-07, it includes original allowed spend, and for 2008 onwards includes Pot 3, and Pot 2 with effect from 5 years after the spend is incurred. As a result the opening RAV for 2007-08 is not equal to the closing RAV in 2006-07.

- Allowed RAV including Pot 3 overspend

This is the table of RAV which includes all RAV spend on which allowances are earned (after taking account of the capex roller) - i.e. Opening RAV + price control allowances + Pot 3 overspend

- Pot 2 RAV

The Pot 2 RAV is separately calculated to allow for the calculation of the return and depreciation on assets held in Pot 2, as such return is then excluded from allowed revenue under the capex roller incentive (see section 5.6). Pot 2 additions for the five years 2002-07 are drawn from the input sheet, and then transferred from Pot 2 to the allowed RAV after five years.

- Pot 3 RAV

The Pot 3 RAV is separately identified in order to calculate the return and depreciation foregone on Pot 3 assets during the years 2002-07, which is then forward valued to the current price control and allowed as an under-recovery.

[4] http://www.ofgem.gov.uk/Networks/GasDistr/GDPCR7-13/Documents1/15556-169a.pdf

The Pot 3 calculation includes as an opening balance all pre-2002 assets which are allowed into the RAV as at 31 March 2002. Only the NTS offtakes are eligible for Pot 3 allowances, as the others have either already had allowances, are excluded, or represent overspend which would not earn allowances until the beginning of the next price control.

All Pot 3 assets are transferred, with accumulated depreciation, to the allowed RAV for calculating annual returns as at 1 April 2007.

Depreciation

"Pot 2"

Pot 2 assets are all post-2002 assets, and the depreciation is calculated accordingly.

The RAV calculations for Pot 2 assets are in the RealRAV sheet, rows 94-102

"Pot 3".

The Pot 3 opening balance is all pre-2002 assets, and the depreciation is calculated accordingly. All Pot 3 additions are post-2002 assets, and the depreciation is calculated accordingly.

The RAV calculations for Pot 3 assets are in the "RealRAV" sheet, rows 107-119, including Pot 3 additions linked from the "Input" sheet, row 125. The pre-2002 assets which were accepted for inclusion into the RAV since the setting of the 2002-07 control are calculated in the "RAV roll-forward to 0302" sheet of our one year control financial model.