Guidance

Carbon Dioxide Transport and Storage Price Control Financial Guidance

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This guidance provides a high-level overview of the principal calculation worksheets contained within the carbon dioxide transport and storage (CO2 T&S) Price Control Financial Model (PCFM) and the subsequent aggregation of those worksheets to calculate Allowed Revenue.

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Contents

1. Introduction

1.1 This guidance provides a high-level overview of the principal calculation worksheets contained within the carbon dioxide transport and storage (CO2 T&S) Price Control Financial Model (PCFM) and the subsequent aggregation of those building blocks to calculate Allowed Revenue.

1.2 This document includes an overview of the following worksheets:

a) ModelInput

b) Depreciation

c) Capitalisation

d) Regulated Asset Value (RAV)

e) Finance and Tax

f) Incentives

g) Allowed Revenue (AR)

1.3 It does not include a detailed overview of the subsidiary input worksheets, or certain analysis worksheets not used to directly calculate Allowed Revenue. These are instead documented in the model directly, with instructions provided within the model for Licensees detailing how these sheets should be populated or operated.

1.4 An overview for each worksheet is provided in a standalone chapter in this document. Further documentation is available directly within the CO2 T&S PCFM. Where formulae are used in this document, terms are used as defined in the Licence.

1.5 The purpose of the PCFM is to calculate the value of the shadow regulatory asset value (SRAV), and during the operational phase, the value of the regulatory asset value (RAV) and the annual Allowed Revenue the Licensee can recover in respect of the carbon dioxide transport and storage licence (the "Licence"), principally through charges levied on users of the network.

Related documents

1.6 This guidance describes how the PCFM calculates the value of the SRAV, the RAV and annual Allowed Revenue. It is one of several documents relevant to the calculation of SRAV, RAV and Allowed Revenue. Other documents include:

a) The Licence;

b) Project Specific Documents such as Carbon Dioxide Transport and Storage Price Control Financial Model;

c) Associated documents related to obligations under the Regulatory Instructions and Guidance (the RIGs), in accordance with Standard Condition B19; and

d) Any documents we publish in relation to the Post Construction Review or Post Commissioning Review, or subsequent Periodic Reviews.

2. Model overview and layout

2.1 Algebra contained in the Licence is the primary source of information for all calculations and takes precedence over other information sources. Any differences between algebra in the Licence and CO2 T&S PCFM should reflect modelling simplifications, and not change the underlying calculation.

2.2 The model worksheets are structured around inputs, calculations, and outputs.

2.3 Input worksheets:

a) Interface: Provides a user-interface for selecting scenarios.

b) Scenarios: Provides time-dependent scenarios which are selected for use in the model by calibrating the user-interface in the "Interface" worksheet.

c) Licensee-specific input sheets: Provides each Licensee a Licensee-specific input data worksheet, named after each individual Licensee.

d) ModelInput: Provides inputs for parameters (as well as aggregating inputs from other relevant worksheets) relating to inflation, expenditure, return on capital, tax, depreciation, decommissioning, incentives, recovered revenue, SRAV and other financial inputs.

2.4 Calculation worksheets:

a) Depreciation: Calculates the value of the Depreciation Building Block.

b) Capitalisation: Calculates expenditure added to the SRAV and the RAV, as well as identifying non-capitalised expenditure to be funded directly in Allowed Revenue.

c) RAV: Calculates RAV and SRAV balances as well as Return During Construction, Return During Commissioning (where both terms are collectively referred to as 'RDC') and Return on Capital.

d) Finance&Tax: Calculates notional net debt, notional interest costs and the value of the calculated tax allowance.

e) Incentives: Calculates the value of the Availability Adjustment.

f) Revenue: Aggregates individual revenue building blocks to calculate Calculated Revenue.

g) AR: Indexes Calculated Revenue by inflation and calculates the K-Factor true up.

2.5 Output worksheets:

a) FinancialStatements: Provides an overview of financial position and performance, including balance sheet, income statement and cash flow.

b) Metrics: Provides an overview of relevant credit ratios.

Model map

2.6 A schematic of the relevant data flows contained with the CO2 T&S PCFM is provided in 'Cover' worksheet of the PCFM.

3. Worksheet overview: ModelInput

3.1 The 'ModelInput' worksheet contains data selected from the Licensee-specific input sheets depending on which Licensee is selected in the interface worksheet. While this section provides a brief overview of the key components in the ModelInput worksheet, full details are provided in the Price Control Financial Handbook (PCFH).

3.2 The Licensee will report costs and incentive performance via the Revenue Reporting Pack (RRP), which will reconcile to the inputs of the PCFM.

Inflation

3.3 All costs will be input into the CO2 T&S PCFM in Base Year prices.

3.4 Price conversion factor: used to convert from Base Year prices to nominal prices. The calculation is set out in Special Condition H9.6 (Part D: Calculation of Price Indexation Term). There are three components used to determine the price conversion factor (which are described in detail in the CO2 T&S PCFH):

a) OBR Forecast

b) Outturn CPIH + forecast (FY average)

c) Long-term inflation forecast

Actual expenditure

3.5 Actual expenditure for Opex, Capex and Devex, with allowances initially set at Licence Award for each Licensee. These include:

a) Opex:

i. Fixed opex

ii. Intermittent opex

iii. Variable opex

iv. Corrective measures

v. Non-Corrective measures

vi. Remediation works

b) Capex:

i. SRAV capex

ii. Ongoing capex

iii. Reuse assets valuation

iv. Corrective measures

v. Non corrective measures

vi. Remediation works

c) Devex:

i. Day1 SRAV – pre-FID Devex

ii. Day1 SRAV – pre-FID debt fees

iii. Actual Ongoing Devex

iv. Ongoing Devex Underspend

Return on capital

3.6 Inputs related to the WACC are selected from the interface worksheet as set out initially in the Financial Settlement Document and revised at each Periodic Review as determined by Ofgem.

3.7 Where relevant, the WACC may be adjusted in the PCFM to account for any relevant partial periods, or Delay WACC.

Model parameters

3.8 Financial parameters for the modelling of the notional net debt balance and interest costs:

a) Minimum equity issuance threshold: deviation allowed beyond notional gearing before an equity issuance is triggered.

b) Assumed dividends as % of notional equity: notional dividend assumption.

c) Index-linked debt: assumption on proportion of debt that is index-linked.

Tax allowance

3.9 Corporation tax rate, which is an input based on UK government tax policy.

3.10 Tax pool allowance rates across different tax pools to depreciate capital allowances, input from HMG policy.

3.11 Tax pool allocation rates: proportion of Capex and Opex allocated to different tax pools, input from the Licensee (as well as model inputs associated with the utilisation of First Year Allowances (FYAs)).

3.12 Tax pool adjustment rates: Ofgem will consider whether a tax adjustment is appropriate and, if so, determine the tax allowance adjustment amount.

3.13 Tax trigger events: events outside of the Licensee's control which affect their tax liability. The input line here is to adjust the Licensee's tax allowance calculation according to this event.

Incentives

3.14 Inputs required to calculate the value of the Availability Adjustment, which incentivises the performance of the Licensee's availability for the transportation of CO_2. These include:

a) Target Availability

b) Actual Availability

c) Adjustment Factor

d) Availability Floor

e) Availability Ceiling

f) Negative adjustment cap

g) Positive adjustment cap

Pass through costs

3.15 Inputs for certain categories of expenditure, that we permit to be passed through to consumers. These include:

a) Business Rates

b) Regulator Licence Fees

c) Crown Estate Lease Fees

d) NSTA Fees

e) SCA Fees

f) EA Fees

g) OPRED Fees

h) Independent Certifier Fees

ETS

3.16 Inputs to calculate the value of the ETS Building Block applicable during each Operational Charging Year.

Decommissioning

3.17 Inputs for contributions to both the Onshore Decommissioning Fund and the Offshore Decommissioning Fund.

Financial inputs

3.18 Inputs for Disposals, Debts fees, various expenditure incentives and Post Commissioning Review RAV Adjustment.

Recovered revenue

3.19 Inputs for Recovered Revenue, which is used to calculate the over or under recovery of revenue from previous years, which are utilised in the calculation of the K-factor true Up.

Depreciation profiles

3.20 A range of depreciation profiles can be input into the CO2 T&S PCFM, to facilitate various forms of scenario modelling. The model is also able to take into account the requirement to make adjustments to the value of the Depreciation Building Block during partial periods.

4. Worksheet overview: Depreciation

4.1 The depreciation worksheet in the CO2 T&S PCFM calculates the value of the Depreciation Building Block in accordance with the CO2 T&S Licence.

4.2 The depreciation worksheet calculates the value of the Depreciation Building Block. The depreciation profile is calculated by applying the depreciation inputs in the ModelInput worksheet, which is selected by calibrating the Interface worksheet. We expect to review the depreciation profiles at Periodic Reviews and during relevant reopeners.

4.3 The depreciation allowance accounts for the Licensee's Day1 RAV and any subsequent annual RAV additions.

4.4 RAV additions in the operating phase are depreciated in the year following capitalisation, while any SRAV transferred into RAV is depreciated (if appropriate, on a partial period basis) in the year of transfer.

5. Worksheet overview: Capitalisation

5.1 The capitalisation worksheet identifies the proportion of expenditure that is permitted to be added to the SRAV or RAV.

5.2 In both the Construction Period and the Commissioning Period, SRAV additions are given by:

$$\boldsymbol{SRA_t = RUAV_t + SRAVCO_t + SRCOI_t + PTC_t + OD_t + DF_t - Dis_t}$$

5.3 Adjustments are made to expenditure according to the Capex and Opex incentives. In the PCFM these are treated as model inputs and are expected to be calculated in the RRP PCFM input sheets. We will provide detailed instructions to the Licensee on the nature and structure of any data to be provided via the RRP guidance documents, however, we expect the Licensee's submissions to align to the requirements of the Licence.

5.4 The value of the SRAV Capex and Opex Incentive may be calculated using a different methodology depending on whether the Licensee has underspent or overspent. This is detailed in Special Conditions F7 (SRAV Capex and Opex Incentive During the Construction Period) and G10 (SRAV Capex and Opex Incentive During the Commissioning Period) of the Licence.

5.5 The Licensee's Actual Ongoing Devex Costs will accrue to the SRAV. In the event that the Licensee's actual expenditure exceeds the Ongoing Devex Allowance, only expenditure up to the allowance limit is permitted to be added to the SRAV.

5.6 In both the Construction Period and the Commissioning Period, the Ongoing Devex for each SRAV Calculation Period will be calculated in accordance with the following formula:

$$\boldsymbol{OD_t = AODC_t + ODUA_t}$$

5.7 In both the Construction Period and Commissioning Period, the Pass Through Costs will be capitalised onto the SRAV, and calculated in accordance with the following formula:

$$\boldsymbol{PTC_t = BR_t + RLF_t + NSTAF_t + CELF_t + SCAF_t + EA_t + OPRED_t + IC_t}$$

5.8 The Ongoing Capex Incentive for each Operational Charging Year will be calculated in accordance with the following formula:

$$\boldsymbol{OCI_t = (OCA_t - AOCC)_t \times OCSF}$$

6. Worksheet Overview: Regulated Asset Value

6.1 Day1 SRAV is the value of the SRAV as at Licence Award in Base Year prices as set out in the Financial Settlement Document.

6.2 Closing SRAV in both the Construction Period and the Commissioning Period are given by:

$$\boldsymbol{CSRAV_t = SRAV_{Day1} + \left[\sum_{n=1}^{t} SRA_n\right] + \left[\sum_{n=1}^{t} RDC_n\right]}$$

6.3 SRAV Additions in both the Construction Period and the Commissioning Period are given by:

$$\boldsymbol{SRA_t = RUAV_t + SRAVCO_t + SRCOI_t + PTC_t + OD_t + DF_t - Dis_t}$$

6.4 Ofgem will calculate on a provisional basis the Closing SRAV for the final SRAV Calculation Period in the Commissioning Period.

6.5 In the scenario where there is a First User Delay, any First User Delay payments received by the Licensee under the Revenue Support Agreement will be deducted from the Day1 RAV value at the Post Commissioning Review.

6.6 The Closing RAV in the Operational Charging Year will be calculated in accordance with the following formula:

$$\boldsymbol{CRAV_t = RAV_{Day1} + \left[\sum_{n=1}^{t} RA_n\right] + \left[\sum_{n=1}^{t} PComRA_n\right] - \left[\sum_{n=1}^{t} Dep_n\right] + \left[\sum_{n=1}^{t} OCI_n\right] + \left[\sum_{n=1}^{t} CMCI_n\right] + \left[\sum_{n=1}^{t} NCMCI_n\right]}$$

6.7 And RAV Additions in the Operational Period are given by:

$$\boldsymbol{RA_t = OC_t + OD_t + CMC_t + NCMC_t + TSRAV_t - Dis_t}$$

Return During Construction and Return During Commissioning

6.8 During the pre-COD period, the Licensee may be entitled to a Return During Construction and a Return During Commissioning which is added to the SRAV during the respective periods. These building blocks are collectively referred to as 'RDC'.

6.9 The Licence sets out several different methodologies for calculating the RDC to reflect the differing circumstances of partial periods and full Charging Years throughout both the Construction Period and the Commissioning Period. We

explain below the incidences where the different calculation methodologies are applied in the model.

6.10 Where the first Charging Year is not a partial year, the RDC for the respective Construction Period or Commissioning Period is calculated using the following formula:

$$\boldsymbol{RDC_t = PreCODWACC_t \times (Day1SRAV + \frac{SRA_t}{2 + PreCODWACC})}$$

6.11 Where the first Charging Year is a partial year, the RDC for the respective Construction Period or Commissioning Period is calculated using the following formula:

$$\boldsymbol{RDC_t = ((1 + PreCODWACC_t)^{Partial\ Period\ Share} - 1) \times (Day1SRAV + \frac{SRA_t}{2 + ((1 + PreCODWACC_t)^{Partial\ Period\ Share} - 1)})}$$

6.12 Where the Charging Year is not a partial year, and it is not the first Charging Year, the RDC for the respective Construction Period or Commissioning Period is calculated using the following formula:

$$\boldsymbol{RDC_t = PreCODWACC_t \times (CSRAV_{t-1} + \frac{SRA_t}{2 + PreCODWACC})}$$

6.13 Where the Charging Year is a partial year, but is not the first Charging Year, the RDC for the respective Construction Period or Commissioning Period is calculated using the following formula:

$$\boldsymbol{RDC_t = ((1 + PreCODWACC_t)^{Partial\ Period\ Share} - 1) \times (CSRAV_{t-1} + \frac{SRA_t}{2 + ((1 + PreCODWACC_t)^{Partial\ Period\ Share} - 1)})}$$

Return on capital

6.14 To calculate Return on Capital (ROC) the model uses the NPV-neutral RAV return base, which is consistent with our approach to regulating other network Licensees. Where the Charging Year is not a partial year, ROC is calculated using the following formula:

$$\boldsymbol{RoC_t = NNRAV_t \times PostCODWACC_t}$$

6.15 For each Operational Charging Year that falls within a partial year, the ROC will be calculated using the following formula:

$$\boldsymbol{ROC_t = NNRAV_t \times ((1 + PostCODWACC_t)^{PartialPeriodShare} - 1)}$$

6.16 Where $NNRAV_t$ is the average present value RAV (the NPV-neutral RAV return base):

$$\boldsymbol{NNRAV_t = \frac{(CRAV_{t-1}) + (DCRAV_t)}{2}}$$

And calculation for Discounted RAV is defined as:

$$\boldsymbol{DCRAV_t = (CRAV_t) \times \left(\frac{1}{1 + ((1 + PostCODWACC_t)^{PeriodShare} - 1)}\right)}$$

7. Worksheet overview: Finance and Tax

Net debt & equity

7.1 The model calculates net debt by netting all cash inflows (revenue and equity issuance) against all outflows (Capex, Opex, Devex, Pass-Through, decommissioning contribution, dividends, debt fees, net interest paid, and tax), with the net result being the annual change in net debt. Equity is assumed to be issued at the start of the financial year if calculated gearing from the previous year deviates beyond a threshold (specified in Financial inputs) from Notional Gearing.

7.2 Interest costs are calculated as nominal cost of debt multiplied by fixed rate debt (assumed as a constant proportion of net debt balance). Index-linked debt interest costs (if relevant) and accretion payments are calculated separately as interest multiplied by index-linked debt and inflation rate multiplied by index-linked debt.

7.3 Closing net debt "Closing balance" is calculated as closing net debt (before tax and interest) adding tax allowance, less tax paid, less net interest paid, less principal inflation accretion.

Tax allowance

7.4 A notional tax allowance is calculated based on the Licensee's taxable profits (losses) and capital allowances (including "Revenue" pool additions). Actual expenditure is allocated to tax pools. Capital allowance balances are calculated in section 5 of the Finance&Tax worksheet. Profits attributable to income tax (after losses) is Calculated Revenue, less net interest paid, capital allowances and in-year tax losses. Tax is grossed up by the corporation tax rate to account for "tax-on-tax".

7.5 The Tax Trigger adjustment provides an adjustment to tax calculations if the Licensee's tax liability changes in response to external events not able to be reflected in the PCFM input (i.e. changes to the corporation tax rate and capital allowance writing down rates are variable values in the PCFM). This policy area is described in detail in the PCFH and provides for:

a) Changes to applicable legislation;

b) Setting of legal precedents through case law;

c) Changes to HMRC interpretation of legislation;

d) Changes in accounting standards.

7.6 Tax clawback is triggered when actual gearing and actual interest costs (submitted by the Licensee) exceed Notional Gearing and notional interest costs, resulting in an outperformance of the tax allowance. This policy area is described in detail in the PCFH.

8. Worksheet overview: Incentives

8.1 A refers to the "Availability" amount of CO_2 that the Licensee is capable of accepting at each of the Delivery Points. This assessment will be calculated by the Licensee outside the PCFM using the following formula:

$$\boldsymbol{A} = \left(\mathbf{1} - \frac{\sum_{hh=1}^{THH}\sum_{dp=1}^{TDP}(\boldsymbol{ACRC}_{dphh} + \boldsymbol{ACN}_{dphh})}{\sum_{hh=1}^{THH}\sum_{dp=1}^{TDP}\boldsymbol{RC}_{dphh}}\right)$$

Availability adjustment

8.2 When Confirmed Availability is equal to or greater than the Availability Ceiling, the Availability Adjustment will be calculated in accordance with the following formula:

$$\boldsymbol{AA}_{t-2} = \boldsymbol{Max\ Reward}_{t-2} \times (\mathbf{1} - \boldsymbol{AF}_{t-2})$$

8.3 When Confirmed Availability is lower than the Availability Ceiling and greater than the Availability Target, the Availability Adjustment will be calculated in accordance with the following formula:

$$\boldsymbol{AA}_{t-2} = \left(\frac{\boldsymbol{CA}_{t-2} - \boldsymbol{AT}_{t-2}}{\boldsymbol{AC}_{t-2} - \boldsymbol{AT}_{t-2}}\right) \times \boldsymbol{Max\ Reward}_{t-2} \times (\mathbf{1} - \boldsymbol{AF}_{t-2})$$

8.4 When Confirmed Availability is lower than the Availability Target and greater than the Availability Floor, the Availability Adjustment will be calculated in accordance with the following formula:

$$\boldsymbol{AA}_{t-2} = \left(\frac{\boldsymbol{AT}_{t-2} - \boldsymbol{CA}_{t-2}}{\boldsymbol{AT}_{t-2} - \boldsymbol{AFl}_{t-2}}\right) \times \boldsymbol{Max\ Deduction}_{t-2} \times (\mathbf{1} - \boldsymbol{AF}_{t-2})$$

8.5 When Confirmed Availability is equal to or lower than the Availability Floor, the Availability Adjustment will be calculated in accordance with the following formula:

$$\boldsymbol{AA}_{t-2} = \boldsymbol{Max\ Deduction}_{t-2} \times (\mathbf{1} - \boldsymbol{AF}_{t-2})$$

9. Worksheet overview: Allowed Revenue

9.1 During the Operational Period, Allowed Revenue, is defined in accordance with the following formula:

$$\boldsymbol{AR_t = CR_t \times PI_t + K_t}$$

9.2 Calculated Revenue for each Operational Charging Year is:

$$\boldsymbol{CR_t = BR_t + Tax_t}$$

9.3 Base Revenue calculation for each Operational Charging Year is:

$$\boldsymbol{BR_t = ROC_t + Depr_t + Opex_t + OI_t + ETS_t + PTC_t + \left(\frac{Decom_t}{PI_t}\right) + AA_{t-2} + CMO_t + NCMO_t + CMOI_t + NCMOI_t}$$

Where PI_t means the Price Indexation Term, and is calculated in accordance with the following formula:

$$\boldsymbol{PI_t = \frac{CPIH_t}{CPIH_b}}$$

9.4 The K-Factor true up is calculated in accordance with the following formula:

$$\boldsymbol{K_t = (AR_{t-2} - RR_{t-2}) \times (1 + TVM_{t-1}) \times (1 + TVM_{t-2})}$$

9.5 Where RR_t is Recovered Revenue, defined as:

$$\boldsymbol{RR_{t-2} = RSAP_{t-2} + MR_{t-2}}$$

9.6 TVM_t is the Time Value of Money for each Operational Charging Year$_{t-1}$, defined as:

$$\boldsymbol{TVM_{t-1} = \left[(1 + PostCODWACC_{t-1}) \times \frac{CPIH_t}{CPIH_{t-1}}\right] - 1}$$

The TVM for each Operational Charging Year$_{t-2}$, defined as:

$$\boldsymbol{TVM_{t-2} = \left[(1 + PostCODWACC_{t-2}) \times \frac{CPIH_{t-1}}{CPIH_{t-2}}\right] - 1}$$