Transmission Services Postage Stamp Reference Price Model: User Guide

This User Guide is valid for the following version of the Postage Stamp Reference Price model: Transmission Services Postage Stamp Model v1.0

General information:

- You must have the excel solver add-on enabled to use this model, instructions to load this add-in can be found using the following link:
  https://support.office.com/en-us/article/Load-the-Solver-Add-in-612926fc-d53b-46b4-872c-e24772f078ca
- Cells that are coloured within the model contain formulae and should not be overwritten. Cells that are white are intended for the user to input something or select from a drop-down menu.
- There are a number of tabs which have been hidden in the model; they are described in this User Guide in grey font. These are used in calculations only and have been hidden to aid clarity and usability. All tabs can be unhidden, if needed by the User.
- *Troubleshooting: If any of the formulae don't appear to work, go to: File>Options>Formulas>Workbook calculation and ensure that 'Automatic' is selected.*

Tab Name	Purpose	Instructions
Model Assumptions	A list of assumptions associated to the creation of this Postage Stamp Reference Price Model.	*There are no user actions in this tab*
User Inputs	This tab allows the user to select all inputs required for the initial calculation of Reference and Reserve Prices.	Click the '**Reset Model** button before continuing. Select Required Inputs: • **Gas Year:** Drop down box to select the Gas year the model is being run for. *Note: Currently the following Gas Years are available for selection: 2016/17, 2017/18, 2018/19 and 2019/20.* • **Revenue Split**: Select the percentage of Revenue to associate to Capacity based transmission tariffs at Entry Points. *Note: the percentage associated to capacity based transmission tariffs at exit points will automatically calculate based on the*

entry value selected.

- **Revenue Reconciliation**: If a revenue adjustment figure (K) is to be applied from a previous year it should be entered here. This would be the equivalent to any previous years under or over recovery (like that of K used in the current Licence). Note: there are separate inputs for the adjustments to entry and exit).
- **Forecast Contracted Capacity (FCC)**: A drop down box to select a proxy for Forecasted Contracted Capacity for entry and exit capacity. Note: a percentage multiplier can be applied to the selected FCC that will apply across each NTS Entry and Exit Point.
- **Exclude Existing Contracts**: You can select either:
  - Yes: This excludes entry capacity associated with existing contracts from the calculation of prices; or
  - No: This allows prices to be calculated without excluding existing contracts. This allows you to see what prices would have been under the CWD model if all capacity had been sold under the new arrangements (for comparison purposes). *Note: This is unrealistic since there are existing contracts which have revenue associated to them*.
- **Non-IP Multipliers**: Allows multipliers to be set for each capacity period (Quarterly/Monthly/Daily/Within-day) for Entry Points and Exit Points (not including IPs) independently. *Note: suggested ranges have been set for each capacity period based on the TAR NC suggestions; the model will accept values outside of these ranges but will present a warning message. TAR NC only mandates these multiplier ranges for IPs but they can be selected for IPs and/or non IPs as per the Users selection.*
- **IP Multipliers**: Allows multipliers to be set for each capacity period (Quarterly/Monthly/Daily/Within-day) for Entry and Exit Interconnection Points independently. *Note: suggested ranges have been set for each capacity period based on the TAR NC recommendations; the model will accept values outside of these ranges but will present a warning message.*
- **Storage Discount**: allows the input of a percentage discount to be applied to Entry and Exit storage Sites independently.
- **LNG Discount**: allows the input of a percentage discount to be applied to Entry LNG Sites independently.
- **IP Discount**: allows the input of a percentage discount to be applied to Entry and Exit Interconnection Points independently.
- **Probability of Interruption**: Click on either the Entry or Exit Probabilities of

Interruption Buttons in turn to input any required probabilities of interruption for each Entry or Exit Point respectively.

Click the "**Calculate Prices**" Button once your inputs have been selected and before proceeding to view the outputs in the following tabs.

Once you have received a message to say that prices have been calculated, please click on the relevant button to see the initial Entry or Exit Prices. Note: these will be overwritten once adjustments have been applied.

Estimated Capacity Booking Split: Please enter your expected split between each capacity type as a percentage (note that the percentage for Yearly capacity will automatically calculate based on your other inputs, if this value goes negative please review your inputs and ensure that the total of all the percentages is 100%).
The total revenue that is recovered under this booking scenario is then compared to the target revenue recovery for Entry and Exit capacity and the difference to Target Recovery is displayed.

Adjustments:
- **Type of Adjustment**: Options in the drop down box are as follows:
    - *Revenue adjustment*: applied to the revenue input at the start of the model and flows through to all prices, maintaining the same weighting between locations that was established with the initial run of the CWD model.
    - *Unit Reference Price adjustment*: applied to the reference price, this is prior to multipliers and storage discount being applied which means that storage will only take on a proportion of the adjustment (depending on the storage discount selected in the inputs).
    - *Unit Reserve Price adjustment*: applied to the reserve price meaning that all locations have an equal adjustment to their reserve price.
    - *Scaling Factor*: applied to the reference price, will maintain the weighting of prices that was established in the initial run of the CWD model.
    - *CRRC* (*Complementary Revenue Recovery Charge*): a separate charge that is calculated as p/kWh based on either forecast or historical flows or forecast or historical capacity bookings (selected by the User in the next cell). Please note that the CRRC does not apply to Interconnection Points under TAR NC. If existing contracts have been excluded from the generation of prices these are also excluded from the CRRC calculation.

		• **Basis for CRRC**: allows the User to select the denominator (from the list defined in TAR NC: either forecast or historical flows or forecast or historical capacity bookings) that will be used in the CRRC calculation. Please note that these values do not include IP data since the CRRC cannot be applied at IPs. If existing contracts have been excluded from the generation of prices these are also excluded from the CRRC calculation. • **Include Existing Contracts if making Unit Reserve Price Adjustment**: This allows Existing Contracts to be included in the adjustments if a Unit Reserve Price Adjustment is being applied, this creates a top-up charge to the existing contracts (along with all other locations) if an under-recovery is expected (or conversely a reduction if an over-recovery is expected). This is the only type of adjustment that can be applied (if the User chooses to) to Existing Contracts. Click the 'Set Adjustments' button. *The model will then generate updated Reference and reserve prices based on the adjustment selected and present the adjustment figure and updated expected recovery in the output cells. Note: the adjustments will be displayed in the Outputs section.* Click on the relevant button to see the Entry or Exit Prices to view the Entry or Exit Prices with the adjustments added. *If you have reason to believe that your selected FCC is not reflective of anticipated bookings then click on the Anticipated Entry Revenue Recovery Button or Anticipated Exit Revenue Recovery Button, which will take you to the relevant tabs.* *Please note that if the actual booking were to differ from the combinations selected there may be an under or over recovery to manage through the available reconciliation processes.*
Drop Down Inputs	*Hidden Tab* A list of inputs that feeds some of the drop down boxes that appear in this model	*There are no user actions in this tab*
Revenue Input	*Hidden Tab*	*There are no user actions in this tab*

	Contains the inputs for the Transmission Services revenue for each Gas Year and the calculations for the part of the revenue to be recovered from capacity based transmission tariffs at either Entry or Exit points.	
Locations & Types	*Hidden Tab* A lookup list for each location that gives its type (e.g. Interconnection Point, Storage Site, etc)	*There are no user actions in this tab*
Existing Contracts – Entry	*Hidden Tab* This gives the quantity of capacity associated with Existing Contracts at each entry point as an average quantity per day (in kWh/d) for the relevant gas year and the total revenue associated with those contracts.	*There are no user actions in this tab*
YY-YY FCC – Entry	*Hidden Tab* This gives the entry capacity quantities associated to each option for the Forecasted Contracted Capacity (in kWh/d) for the applicable gas year (given in the tab name).	*There are no user actions in this tab*
YY-YY FCC – Exit	*Hidden Tab* This gives the exit capacity quantities associated to each option for the Forecasted	*There are no user actions in this tab*

	Contracted Capacity (in kWh/d) for the applicable gas year (given in the tab name).	
Entry Interruption Prob's	This allows the Probability of Interruption ('Pro' factor) and the Adjustment factor (A) to be set for each Entry Point, in accordance with the calculation for Interruptible Capacity reserve prices detailed in TAR NC Article 16.	Select Required Inputs: **Pro**: Probability of Interruption – Please enter a probability of interruption for each Entry Point, please note that if cells are left blank the probability of interruption is zero by default. **A**: Adjustment Factor – note that this has been set to 1 for each Entry Point following discussion in the subgroup. Click on return to USER INPUTS to navigate back to the User Inputs tab
Exit Interruption Prob's	This allows the Probability of Interruption ('Pro' factor) and the Adjustment factor (A) to be set for each Exit Point, in accordance with the calculation for Interruptible Capacity reserve prices detailed in TAR NC Article 16.	Select Required Inputs: **Pro**: Probability of Interruption – Please enter a probability of interruption for each Exit Point, please note that if cells are left blank the probability of interruption is zero by default. **A**: Adjustment Factor – note that this has been set to 1 for each Exit Point following discussion in the subgroup. Click on return to USER INPUTS to navigate back to the User Inputs tab
Entry Prices	Contains each of the steps in calculating the reference price for a location (in p/kWh/a) and then applies any multipliers and storage/LNG/IP discounts selected in the initial 'User Inputs' tab to generate reserve prices for each capacity period (Yearly, Quarterly, Monthly, Daily and Within-day) in addition to the reserve price for Daily Interruptible Capacity. Reserve prices are given in p/kWh/d.	*There are no user actions in this tab.* This tab shows the Entry Prices, you can navigate back to the User Inputs tab by clicking on the 'Return to USER INPUTS' button

	Where an adjustment is selected in the 'User Inputs' tab it will feed through to the 'Unit Reference Price Adjustment', 'Scaling Factor' or 'Unit Reserve Price Adjustment' columns here and update the prices generated accordingly.	
Exit Prices	Contains each of the steps in calculating the reference price for a location (in p/kWh/a) and then applies any multipliers and storage/IP discounts selected in the initial 'User Inputs' tab to generate reserve prices for each capacity period (Yearly, Quarterly, Monthly, Daily and Within-day) in addition to the reserve price for Daily Interruptible Capacity. Reserve prices are given in p/kWh/d. Where an adjustment is selected in the 'User Inputs' tab it will feed through to the 'Unit Reference Price Adjustment', 'Scaling Factor' or 'Unit Reserve Price Adjustment' columns here and update the prices generated accordingly.	*There are no user actions in this tab* This tab shows the Exit Prices, you can navigate back to the User Inputs tab by clicking on the 'Return to USER INPUTS' button.
CRRC Inputs – Entry	*Hidden Tab* Gives the four options (Historical or Forecast Capacity Bookings or Historical or Forecast Flows) as described in TAR NC that can be used as the denominator in the	*There are no user actions in this tab*

	calculation of the CRRC (which is generated in the 'User Inputs' Tab). Note that the data in this tab will automatically update for the selected Gas Year based on the data elsewhere in the model.	
Entry Adjustment Calcs	*Hidden Tab* This tab calculates the how much revenue is expected to be collected for each capacity type (Yearly, Quarterly, etc. and daily interruptible) based on the assumptions set within the 'User Inputs' tab. This feeds into the over/under recovery and adjustment results on the 'User Inputs' tab.	*There are no user actions in this tab*
CRRC Inputs – Exit	*Hidden Tab* Gives the four options (Historical or Forecast Capacity Bookings or Historical or Forecast Flows) as described in TAR NC that can be used as the denominator in the calculation of the CRRC (which is generated in the 'User Inputs' Tab). Note that the data in this tab will automatically update for the selected Gas Year based on the data elsewhere in the model.	*There are no user actions in this tab*
Exit Adjustment Calcs	*Hidden Tab* This tab calculates the how much revenue is expected to be	*There are no user actions in this tab*

	collected for each capacity type (Yearly, Quarterly, etc. and daily interruptible) based on the assumptions set within the 'User Inputs' tab. This feeds into the over/under recovery and adjustment results on the 'User Inputs' tab.	
Entry Anticipated Rev. Recovery	*Note: this tab should only be used if you have reason to believe that your selected FCC is not reflective of your anticipated bookings.* This tab allows the user to estimate what the anticipated entry revenue recovery would be based on the prices generated and the adjustments set and using a series of booking scenarios and estimates of how much capacity was booked between each capacity type. It then allows the User to generate a Unit Price Adjustment to compensate for the anticipated over/under-recovery.	Select your chosen inputs: • **Anticipated Booking Scenario**: This allows you to select a proxy for anticipated bookings so that you can see what adjustment might need to be added to the calculated prices to reduce the over/under-recovery for the applicable year. Alternatively you can type your own figures in the Anticipated Entry Bookings tab, to do this click on the If you have chosen to input your own anticipated capacity booking levels please select here to enter values Button. • **Capacity Booking Split**: Please enter your expected split between each capacity type as a percentage (note that the percentage for Yearly capacity will automatically calculate based on your other inputs, if this value goes negative please review your inputs and ensure that the total of all the percentages is 100%). • **Flow Scenario**: This allows you to select a proxy for actual flows. so that the appropriate revenue from the CRRC charge (if applied earlier to flows) can feed into the total revenue recovered cell. *The total revenue that is recovered under this booking scenario is then compared to the target revenue recovery for Entry capacity and the expected over or under recovery is displayed.* To calculate a unit price adjustment value in p/kWh/d please select the following parameters: • **Denominator for Unit Price Adjustment**: allows the User to select the denominator (either forecast or historical flows or anticipated or historical capacity bookings) that will be used in the calculation of the unit reserve price adjustment. • **Allow adjustments at IP's**: You can select either: ○ **Yes**: This allows a top-up charge to the capacity sold at Interconnection Points (along with all other locations) if an under-recovery is expected (or conversely a reduction if an over-recovery is expected) ; or

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o **No**: This excludes entry capacity sold at interconnection Points from attracting a Unit Price adjustment (note: this would be the equivalent of a CRRC charge).

- **Allow adjustments to Existing Contracts**: You can select either:
  o **Yes**: This allows a top-up charge to the existing contracts (along with all other locations) if an under-recovery is expected (or conversely a reduction if an over-recovery is expected) ; or
  o **No**: This excludes entry capacity associated with existing contracts from attracting a Unit Price adjustment.

The model then calculates an adjustment value to be applied to all Entry Bookings, dependent on your selections, in p/kWh/d.

To navigate back to the User Inputs tab, click on the Return to USER INPUTS button.

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<tr>
<td>Anticipated Entry Bookings</td>
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This tab shows the anticipated Entry booking scenarios and also allows the user to input a different capacity level (kWh/d)

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This allows the User to input their own anticipated Entry Capacity Booking Levels in the 'User Input Entry Capacity Levels (kWh/d)' column.

Please note that any anticipated booking quantity that is less than the corresponding existing contracts quantity for that location and gas year (which can be seen in Column B) will automatically highlight red.

Click on the 'Return to Entry Anticipated Revenue Recovery Tab' button to go back to the calculation of the Entry Anticipated Revenue Recovery.

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<tr>
<td>Adjustment Denominators - Entry</td>
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Hidden Tab
Gives four options (Historical or Anticipated Capacity Bookings or Historical or Forecast Flows) that can be used as the denominator in the calculation of the Unit Price Adjustment which is generated in the 'Entry Anticipated Rev. Recovery' Tab.

Note that the data in this tab will automatically update for the selected Gas Year based on the

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There are no user actions in this tab

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	data elsewhere in the model and the 'Total' row will update based on your selections in the 'Entry Anticipated Rev. Recovery' tab.	

Exit Anticipated Rev. Recovery	*Note: this tab should only be used if you have reason to believe that your selected FCC is not reflective of your anticipated bookings.*
	
	This tab allows the user to estimate what the anticipated exit revenue recovery would be based on the prices generated and the adjustments set and using a series of booking scenarios and estimates of how much capacity was booked between each capacity type.
	
	It then allows the User to generate a Unit Price Adjustment to compensate for the anticipated over/under-recovery.
		Select your chosen inputs:
		• **Anticipated Booking Scenario**: This allows you to select a proxy for anticipated bookings so that you can see what adjustment might need to be added to the calculated prices to reduce the over/under-recovery for the applicable year. Alternatively you can type your own figures in the Anticipated Exit Bookings tab, to do this click on the If you have chosen to input your own anticipated capacity booking levels please select here to enter values Button.
		• **Capacity Booking Split**: Please enter your expected split between each capacity type as a percentage (note that the percentage for Yearly capacity will automatically calculate based on your other inputs, if this value goes negative please review your inputs and ensure that the total of all the percentages is 100%).
		• **Flow Scenario**: This allows you to select a proxy for actual flows so that the appropriate revenue from the CRRC charge (if applied earlier to flows) can feed into the total revenue recovered cell.
		
		The total revenue that is recovered under this booking scenario is then compared to the target revenue recovery for Exit capacity and the expected over or under recovery is displayed.
		
		To calculate a unit price adjustment value in p/kWh/d please select the following parameters:
		• **Denominator for Unit Price Adjustment**: allows the User to select the denominator (either forecast or historical flows or anticipated or historical capacity bookings) that will be used in the calculation of the unit reserve price adjustment.
		• **Allow adjustments at IP's**: You can select either:
		  o **Yes**: This allows a top-up charge to the capacity sold at Interconnection Points (along with all other locations) if an under-recovery is expected (or conversely a reduction if an over-recovery is expected) ; or
		  o **No**: This excludes exit capacity sold at interconnection Points from attracting a Unit Price adjustment (note: this would be the equivalent of a

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<td></td>
<td>CRRC charge).

The model then calculates an adjustment value to be applied to all Exit Bookings, dependent on your selections, in p/kWh/d.

To navigate back to the User Inputs tab, click on the Return to USER INPUTS button.</td>
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<tr>
<td>Anticipated Exit Bookings</td>
<td>This tab shows the anticipated Exit booking based on a scenario and also allows the user to input a different capacity level (kWh/d)</td>
<td>This allows the User to input their own anticipated Exit Capacity Booking Levels in the 'User Input Exit Capacity Levels (kWh/d)' column.

Click on the 'Return to Exit Anticipated Revenue Recovery Tab' button to go back to the calculation of the Exit Anticipated Revenue Recovery.</td>
</tr>
<tr>
<td>Adjustment Denominators - Exit</td>
<td>*Hidden Tab*
Gives four options (Historical or Anticipated Capacity Bookings or Historical or Forecast Flows) that can be used as the denominator in the calculation of the Unit Price Adjustment which is generated in the 'Exit Anticipated Rev. Recovery' Tab.

Note that the data in this tab will automatically update for the selected Gas Year based on the data elsewhere in the model and the 'Total' row will update based on your selections in the 'Exit Anticipated Rev. Recovery' tab.</td>
<td>*There are no user actions in this tab*</td>
</tr>
<tr>
<td>Current Entry Capacity Charges</td>
<td>*This tab gives the Current Entry Capacity Charges for information only*</td>
<td>*There are no user actions in this tab*</td>
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<tr>
<td>Current Exit Capacity Charges</td>
<td>*This tab gives the Current Exit Capacity Charges for information only*</td>
<td>*There are no user actions in this tab*</td>
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Current Commodity Charges	*This tab gives the Current Commodity Charges for information only*	*There are no user actions in this tab*

Version Control

V1.0	Draft based on the Transmission Services Postage Stamp Model v1.0, shared with industry on 19.04.17
V1.1	Draft based on the Transmission Services Postage Stamp Model v1.1, shared with industry on 05.05.17