

# Capacity Weighted Distance (CWD) Reference Price Model: User Guide

This User Guide is valid for the following version of the Sensitivity Tool (Model) 0678 V3.1 Capacity Weighted Distance (CWD Transmission Services (21 March 2019)

## 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.
- 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
Front Sheet	Overview of the model	<i>There are no user actions in this tab</i>
Model Use and Assumptions	A list of assumptions associated to the creation of this CWD Reference Price Model.	<i>There are no user actions in this tab</i>
User Inputs	This tab allows the user to select all inputs required for the initial calculation of Reference and Reserve Prices.	<p>Click the '<b>Reset Parameters to Modification UNC0678</b>' button before continuing.</p> <p>Select Required Inputs:</p> <ul style="list-style-type: none"> <li><b>Gas Year:</b> Drop down box to select the Gas year the model is being run for. <i>Note: Currently the following Gas Years are available for selection: 2018/19 until 2030/31</i></li> <li><b>Revenue Split:</b> Select the percentage of Revenue to associate to Capacity based transmission tariffs at Entry Points. <i>Note: the percentage associated to capacity based transmission tariffs at exit points will automatically calculate based on the entry value selected.</i></li> <li><b>Revenue Reconciliation:</b> If a revenue adjustment figure (K) is to be applied from a previous year it should be entered here. <i>Note: there are separate inputs for the</i></li> </ul>

		<p><i>adjustments to entry and exit.</i></p> <ul style="list-style-type: none"> <li>• <b>Forecast Contracted Capacity (FCC):</b> A drop down box to select a proxy for Forecasted Contracted Capacity for entry and exit capacity. <i>Note: a percentage multiplier can be applied to the selected FCC that will apply across each NTS Entry and Exit Point.</i></li> <li>• <b>Exclude Existing Contracts:</b> You can select either:             <ul style="list-style-type: none"> <li>○ Yes: This excludes entry capacity associated with existing contracts from the calculation of prices; or</li> <li>○ 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). <i>Note: This is unrealistic since there are existing contracts which have revenue associated to them.</i></li> </ul> </li> <li>• <b>Non-IP Multipliers:</b> Allows multipliers to be set for each capacity period (MSEC, DADSEC, WDDSEC for Entry Points and Firm for Exit Points (not including IPs) independently.</li> <li>• <b>IP Multipliers:</b> Allows multipliers to be set for each capacity period (Quarterly/Monthly/Daily/Within-day) for Entry and Exit Interconnection Points independently.</li> <li>• <b>Storage Discount:</b> Allows the input of a percentage discount to be applied to Entry and Exit storage Sites independently.</li> <li>• <b>LNG Discount:</b> Allows the input of a percentage discount to be applied to Entry LNG Sites independently.</li> <li>• <b>Probability of Interruption:</b> 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.</li> </ul> <p>Click the <b>“Calculate Prices”</b> Button once your inputs have been selected and before proceeding to view the outputs in the following tabs.</p> <p>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. <i>Note: these will be overwritten once adjustments have been applied.</i></p> <p><b>Revenue adjustment:</b> 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</p>
--	--	--

		<p>established with the initial run of the CWD model.</p> <p>Click the '<b>Set Adjustments</b>' button.</p> <p><i>The model will then generate updated Reference and reserve prices based on the adjustment selected and present the adjustment figure and updated expected recovery.</i></p> <p>Click on the relevant button to see the Entry or Exit Prices to view the Entry or Exit Prices with the adjustments added.</p>
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.	<p>Select Required Inputs:</p> <ul style="list-style-type: none"> <li>• <b>Pro:</b> 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.</li> <li>• <b>A:</b> Adjustment Factor – note that this has been set to 1 for each Entry Point following discussion in the workgroup.</li> </ul> <p>Click on return to USER INPUTS to navigate back to the User Inputs tab</p>
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.	<p>Select Required Inputs:</p> <ul style="list-style-type: none"> <li>• <b>Pro:</b> 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.</li> <li>• <b>A:</b> Adjustment Factor – note that this has been set to 1 for each Exit Point following discussion in the subgroup.</li> </ul> <p>Click on return to USER INPUTS to navigate back to the User Inputs tab</p>
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 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. Where an adjustment is selected in the 'User Inputs' tab it will feed through and update the prices generated	<p><i>There are no user actions in this tab.</i></p> <p>This tab shows the Entry Prices, you can navigate back to the User Inputs tab by clicking on the 'Return to USER INPUTS' button</p>

	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. Where an adjustment is selected in the 'User Inputs' tab it will feed through and update the prices generated accordingly.	<i>There are no user actions in this tab</i>  This tab shows the Exit Prices, you can navigate back to the User Inputs tab by clicking on the 'Return to USER INPUTS' button.
Entry Anticipated Rev. Recovery	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 estimates of how much capacity was booked between each capacity type.	<i>There are no user actions in this tab</i>
Exit Anticipated Rev. Recovery	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 estimates of how much capacity was booked between each capacity type.	<i>There are no user actions in this tab</i>
Entry Prices Summary	This tab gives the summary of the Entry Prices	<i>There are no user actions in this tab</i>
Exit Prices Summary	This tab gives the summary of the Exit Prices	<i>There are no user actions in this tab</i>
Cost Allocation Assessment 0678	This tab gives the Cost Allocation Assessment (CAA) as per the calculation in TAR for MOD678	<i>There are no user actions in this tab</i>
Current Entry Charges	This tab gives the Current Entry Capacity and Commodity Charges for information only	<i>There are no user actions in this tab</i>
Current Exit Charges	This tab gives the Current Exit Capacity and Commodity Charges for information only	<i>There are no user actions in this tab</i>

Entry Output Summary	This tab gives an overview of the current Entry prices and the Entry prices calculated under the latest run of the CWD model	<i>There are no user actions in this tab</i>
Exit Output Summary	This tab gives an overview of the current Exit prices and the Exit prices calculated under the latest run of the CWD model	<i>There are no user actions in this tab</i>