Reliability Pricing Model / Avoidable Cost Rate (RPM/ACR)

User Guide for the RPM/ACR Module in MIRA

Monitoring Analytics, LLC

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RPM/ACR User Guide

1 Introduction

The RPM/ACR system is one of several modules in the Monitoring Analytics Member Information Reporting Application (MIRA). Monitoring Analytics, LLC serves as the Market Monitoring Unit (MMU) for PJM Interconnection, L.L.C. and is also known as the Independent Market Monitor (IMM) for PJM.

The RPM/ACR system is an application hosted by Monitoring Analytics, LLC and is used for the submission of data to the MMU by Capacity Market Sellers (CMS) for purposes of calculating offer caps for RPM Auctions, per PJM Open Access Transmission Tariff (OATT) Attachment DD § 6.7(b). The RPM/ACR system is also used for the communication of PJM Market Net Revenues and offer caps and for the affirmation of offer caps.

The RPM/ACR system has two parts:

- **RPM/ACR**, which is used for the selection of offer cap types and for submission of data to the MMU by Capacity Market Sellers for purposes of calculating Market Seller Offer Caps (MSOCs) for RPM Auctions.
- **RPM Offer Cap Confirmation**, which supports the MMU communication of MSOC values and the selection and affirmation of RPM MSOC values by Capacity Market Sellers.

This RPM/ACR User Guide includes:

1) An overview of RPM/ACR;
2) Instructions on how to set up an account;
3) Guidance on the format and content of, and process for submitting the data for calculating MSOCs; and
4) Guidance on the format and content of, and process for affirming offer caps.

For technical details on the MIRA system, please see the MIRA User Guide document:

https://www.monitoringanalytics.com/tools/docs/MIRA_User_Guide_2022.pdf

1.1 RPM/ACR Timelines

The RPM/ACR data submission deadlines for RPM Auctions are prescribed by the PJM Open Access Transmission Tariff (OATT or Tariff).[1] Data entry timelines for specific RPM Auctions are posted on the Tools page of the MMU website:

https://www.monitoringanalytics.com/tools/tools.shtml

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[1]   PJM OATT Attachment DD §§ 6.4(b) & 6.7(b).

2   Reliability Pricing Model / Avoidable Cost Rate (RPM/ACR)

2.1 MIRA Account Setup and Access

All PJM Capacity Market Sellers should have their PJM Company Account Manager (CAM) log in to the MIRA system and designate users for the RPM/ACR module in MIRA.

For details on the CAM process, please see the MIRA CAM Quick Start Reference document: https://www.monitoringanalytics.com/tools/docs/MIRA_CAM_Quick_Start_Reference_2022102 8.pdf

Specifically, to add access to the RPM/ACR module, CAMs should grant users the user type of RPM/ACR User.

2.2 RPM/ACR Functionality

The RPM/ACR module has the following functionality:

1) Offer Cap Type
    a. Declaration of price taker status;
    b. Selection of technology and delivery year specific default ACR as the basis for calculating a MSOC;
    c. Selection of unit specific ACR as the basis for calculating a MSOC;
    d. Selection of 1.1 Times BRA Clearing Price as the basis for calculating a MSOC;
    e. Selection of opportunity cost as the basis for calculating a MSOC;
    f. Submittal of data through the user interface or through file import to support the default ACR, and opportunity cost MSOC types.

2) Submittal of unit specific ACR data through a graphical user interface (GUI) or through upload of an ACR template spreadsheet.
3) Confirmation of MSOC values and the MW to which they will apply.

3   ACR Calculation Screen

The ACR Calculation screen is the main page for the RPM/ACR module. To submit data for the purpose of calculating MSOCs, the user should:

1) Select the company for which data are to be submitted or accessed;
2) Under Reporting in the Menu Bar, click on RPM/ACR to go to the ACR Calculation screen.
    a. Note that if a user does not have RPM/ACR User access for the selected company, the RPM/ACR reporting link will not be available.
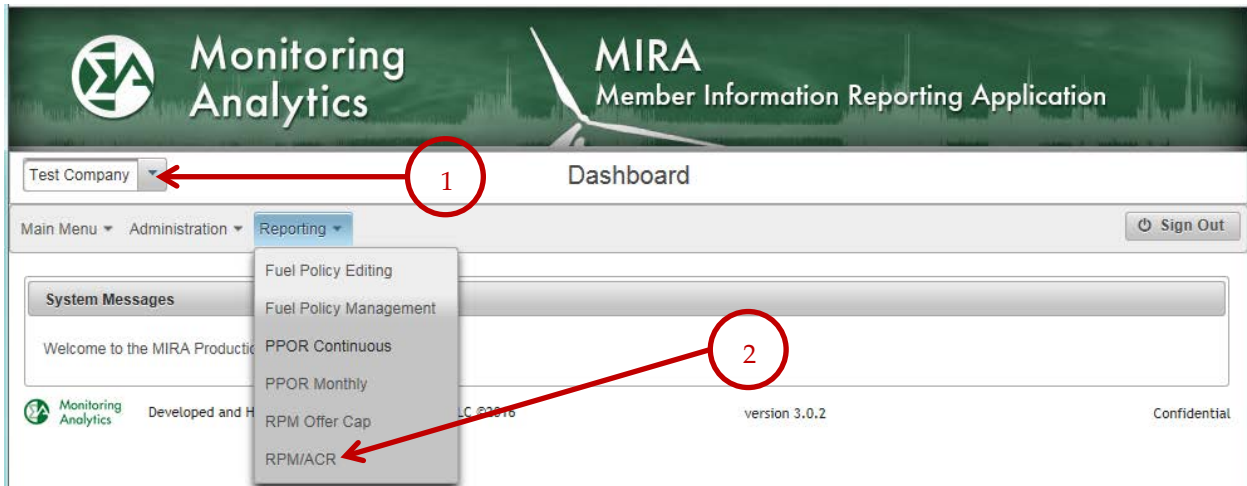
On the ACR Calculation screen, the user should select the applicable Delivery Year and auction:
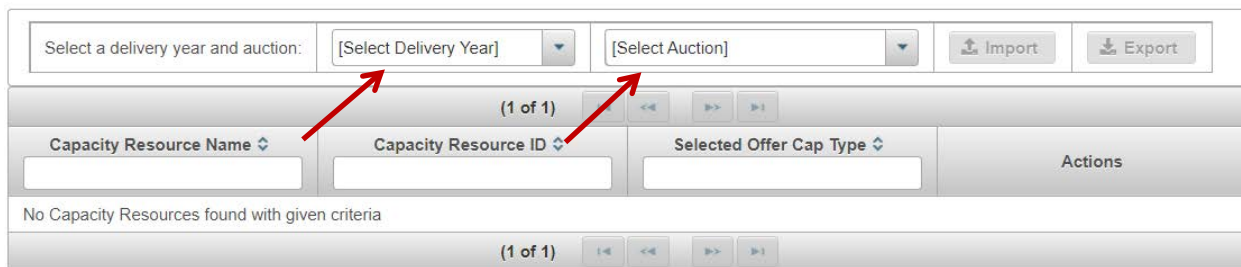
Then, the screen will present all of the capacity resources owned by or contracted to the reporting company for the specified auction. For each capacity resource, there are two ACR screens or actions to choose: Offer Cap Type and Unit Specific ACR.

If a Capacity Market Seller has many resources, the user may type a string in the search box in any column header and press Enter to find a specific resource. Clear the search box and press Enter to return to displaying the complete list of resources.

The ACR Calculation screen also shows the Selected Offer Cap Type, which is based on the selections made and saved by the user when entering ACR inputs in the Offer Cap Type screen.
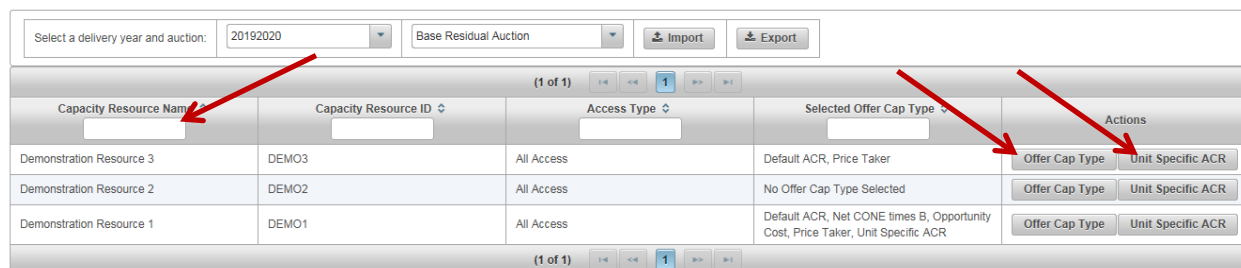
After data entry has been completed for a resource, and the Offer Cap Type screen has been closed, verify that the Selected Offer Cap Type for the capacity resource is showing the correct

calculation method. If it is not showing the expected offer cap type, open the record and confirm that the correct check box is checked, and save the record.

4   Offer Cap Type Screen

To notify the MMU of intent to have offer caps based on Price Taker status, Default ACR, Unit Specific ACR, 1.1 Times BRA Clearing Price, or Opportunity Cost, click on the Offer Cap Type button in the Actions column to open the ACR Type screen for a resource.

In the Offer Cap Type screen, the user is presented with five check boxes and five tabs, which represent the choices of Price Taker, Default ACR, Unit Specific ACR, 1.1 Times BRA Clearing Price, and Opportunity Cost.

Click on the tabs to enter inputs for that specific offer cap type. The user may select more than one offer cap type at this point in the process.

Prior to saving, the user must select one or more check boxes to indicate which choice(s) will be submitted to the MMU. The MMU will use the check box selections to determine which methods to use to calculate the MSOCs, even if data were submitted under a tab for which the check box was not selected.

At the bottom of the Offer Cap Type screen is a Save button and a Cancel button. Clicking either of these buttons closes the Offer Cap Type screen.

4.1 Declaration of Price Taker Status

If a Capacity Market Seller intends to offer a resource in an RPM Auction as a price taker and at $0 per MW-day, the following steps should be taken:

1) Click on the Price Taker check box to indicate the selection of Price Taker as the offer cap type.
2) Click on the Price Taker tab.
3) On the Price Taker tab, read the confirmation language, and make sure that it is consistent with the Capacity Market Seller's intent for the selected auction.
4) On the Price Taker tab, check the check box to confirm that the Capacity Market Seller agrees to the application of an offer cap of $0 per MW-day for the specified resource.
5) Click on Save to commit these inputs to the database.

The Price Taker selection can only be saved if the selection and confirmation check boxes are both selected. If the selection check box is deselected, the confirmation check box will also be deselected.

Clicking on the Discard Changes button closes the dialogue box and reverts all values to the last values that were saved to the database.

4.2 Acceptance of Default ACR

If a Capacity Market Seller intends to have an offer cap calculated based on the default ACR applicable for the technology type and Delivery Year, the following steps should be taken:

1) Click on the Default ACR check box to indicate the selection of Default ACR as the offer cap type.
2) Click on the Default ACR tab to enter default ACR inputs.
3) On the Default ACR tab, select the applicable Technology Type from the drop down list. Only when the Technology Type has been selected will the PJM Default ACR value be presented to the user.
4) Enter values for EFORd and ICAP.
5) Observe the presented values for PJM Default ACR and MMU Net Revenue.
6) Enter values for Participant Enter Default ACR and Participant Enter Net Revenue as appropriate.
7) If applicable, enter values for Bilateral Revenues, Bilateral Costs, Reactive Capability Revenues, and Reactive Capability Revenue Justification.
8) Click on Save to commit these inputs to the database.

The Default ACR inputs will be checked to ensure that a complete record has been entered. Incomplete inputs for Default ACR offer cap type cannot be saved to the database if the Default ACR check box is selected.

Clicking on the Cancel button closes the dialogue box and reverts all values to the last values that were saved to the database.

If the MMU Net Revenue field is blank, this indicates that the MMU has not yet populated the field. If a Capacity Market Seller believes that there should be an MMU Net Revenue value for the capacity resource, please contact the MMU at rpmacr@monitoringanalytics.com.

Offer Cap Type

4.3 Opportunity Cost Based Offer Cap

The RPM/ACR module Offer Cap Type screen allows Capacity Market Sellers to communicate the intent to use the resource's opportunity cost as the basis for calculating an offer cap and to communicate the amount of MW to which that MSOC would apply.

1) Click on the Opportunity Cost check box to indicate the selection of Opportunity Cost as the offer cap type.
2) Click on the Opportunity Cost tab.
3) On the Opportunity Cost tab, enter the Opportunity Cost MW and $/MW-Day.
4) Specify the Technology Type of the resource.
5) Explain the justification for the opportunity cost in the text field. Supporting documentation should be provided to the MMU outside of the MIRA system via email.
6) Click on Save to commit these inputs to the database.

Offer Cap Type

Capacity Resource Name	Capacity Resource ID
EXAMPLE RESOURCE 1	EXAMPLE 1

Selected Offer Cap Types:

☐ Price Taker   ☐ Default ACR   ☐ Unit Specific ACR   ☐ 1.1 Times BRA Clearing Price   ☑ Opportunity Cost

Price Taker	Default ACR	Unit Specific ACR	1.1 Times BRA Clearing Price	**Opportunity Cost**

Technology Type	Combined Cycle
Opportunity Cost (MW)	
Opportunity Cost ($/MW-Day)	
Opportunity Cost Justification	250 characters remaining.

💾 Save   🔄 Cancel

5 Import and Export of Offer Cap Type Data

In the ACR Calculation screen (the landing page for RPM/ACR), there are Import and Export buttons that can be used to bulk upload certain data elements from the Offer Cap type screen. These data items include:

- Price Taker (Yes/No);
- For calculating Default ACR: Technology Type, EFORd, ICAP, CMS Default ACR, CMS Net Revenue.

To generate the upload file template, click on the Export button, which will create a file containing rows for each Capacity Resource and columns for each of the data elements. The Export file will also include any data for these fields that are already saved in the database, as well as the PJM Default ACR (if the Technology Type has been selected) and the MMU Net Revenue values, if they have been populated.

After editing the exported template file, use the Import button to upload any additions or deletions. Cells left blank in the upload file will null out any existing data in the database.

6 Unit Specific ACR

If a Capacity Market Seller intends to have an offer cap calculated based on a Unit Specific ACR, the following steps should be taken:

1) Click on the Unit Specific ACR check box to indicate the selection of Unit Specific ACR as the offer cap type.
2) Click on the Unit Specific ACR tab to observe Unit Specific ACR summary data.
   a. Other than selecting the check box, there is no data entry required on this Unit Specific ACR tab in the ACR Type screen.
   b. Unit Specific ACR data are entered as described below in Section 6.1 "Manually Entering Unit Specific ACR through the GUI" and in Section 6.2 "Uploading Unit Specific ACR Template."
   c. When Unit Specific ACR data have been submitted, the installed capacity (ICAP) and unforced capacity (UCAP) based ACR values will be presented on this Unit Specific ACR tab, and the Submission Status will read "Submitted". If these ICAP and UCAP ACR fields are blank, the Unit Specific ACR data has not been completely submitted. If the MMU Net Revenue field is blank, this indicates that the MMU has not yet populated the field. If a Capacity Market Seller believes that there should be a MMU Net Revenue value for the capacity resource, please contact the MMU at rpmacr@monitoringanalytics.com.
3) Click on Save to commit this selection to the database.

Once the intent to use the Unit Specific ACR is indicated in the Offer Cap Type screen, the Unit Specific ACR data can be submitted to the MMU through the graphical user interface (GUI) or by uploading the ACR template. Data submitted using the ACR template can be reviewed and edited in the GUI after it has been uploaded.

6.1 Manually Entering Unit Specific ACR through the GUI

From the ACR Calculation screen, identify the capacity resource for which ACR data are to be submitted, and click the Unit Specific ACR button.

This will open the Unit Specific ACR Calculation screen for the specified capacity resource.

There are ten tabs for Unit Specific ACR data entry. At the bottom of each tab is a Save button. The data on each tab must be saved prior to moving to another tab. The tabs contain the following data categories:

- **Summary:** Presents a summary of calculated ACR components and requires inputs for the Adjustment Factor calculation;
- **Section 1 & 2:** Power Plant Technology information, General Unit Data, and Non-Avoidable Cost data;
- **Section 3:** Plant specifications;
- **Section 4 & 5:** Avoidable Operations and Maintenance Labor (AOML) and Avoidable Administrative Expenses (AAE);
- **Section 6 & 7 & 8:** Avoidable Maintenance Expense (AME), Avoidable Variable Expenses (AVE), and Avoidable Taxes Fees and Insurance (ATFI);
- **Section 9:** Avoidable Carrying Charges (ACC);
- **Section 10:** Avoidable Corporate Level Expenses (ACLE);
- **Section 11:** Avoidable Fuel Availability Expenses (AFAE);
- **Section 12:** Avoidable Project Investment Recovery Rate (APIR); and
- **Section 13:** Capacity Performance Quantifiable Risk (CPQR).

The requirements for each of these data categories are defined in the ACR Template Instructions document published on the Monitoring Analytics website:

http://www.monitoringanalytics.com/tools/docs/RPM-ACR_Template_Version_14.4_Instructions_20221028.pdf

The calculated fields in each tab of the user interface only calculate after the user clicks on Save. When all appropriate data are saved for all of the tabs, the user should click on the Submit button. The Submit button is only activated when there are no unsaved data in any of the tabs.

When the Submit button is clicked, all data validation rules are checked. Any validation errors are presented at the top of the Unit Specific ACR Calculation screen. ACR data cannot be submitted while data validation errors remain. ACR data that is successfully submitted results in the ACR values being displayed in the Summary tab of the Unit Specific ACR screen and the Unit Specific ACR tab of the Offer Cap Type screen. The calculated ACR is presented in terms of installed capacity (ICAP) and unforced capacity (UCAP).

6.2 Uploading Unit Specific ACR Template

The ACR template is available on the MMU website, Tools page: http://www.monitoringanalytics.com/tools/tools.shtml

However, it is advised to use the Export button on the Unit Specific ACR Calculation screen to create a version of the ACR template that is consistent with the template version expected by the system and is prepopulated with the capacity resource name, ID, and the selected Delivery Year and Auction Name. This exported file can be used as the input template for importing ACR data.

When the ACR template has been completed, and an ACR value is calculated in the template spreadsheet, click on the Import button. Then in the Select File for Import dialogue box, click on +Choose to navigate to the completed ACR template file.

Uploading an ACR template saves and submits the data. An ACR template that fails any validation step will fail the upload, meaning the data will not be saved or submitted.

6.3 Interaction between the Unit Specific ACR Calculation Screen and the Offer Cap Type Screen

To ensure consistency in the ACR inputs provided for a capacity resource, all fields in the Unit Specific ACR screen are linked to the corresponding fields in the Offer Cap Type screen. Updates made in one screen will also appear in the other. The selection of the Default ACR check box in the Offer Cap Type screen will set the "Use Default ACR?" dropdown in the Unit Specific ACR screen to "Yes".

6.3.1 Non-Avoidable Cost Data: Opportunity Cost, Bilateral Costs and Revenues, and Exports

Capacity Market Sellers can also submit bilateral costs and revenue data, expected bonus performance payments, reactive capability revenue data, and submit data to support offer caps based on opportunity costs by including these data in the Unit Specific ACR Calculation screen, Section 2B, Non-Avoidable Cost Data.

Capacity Market Sellers should provide required documentation to the MMU by email (rpmacr@monitoringanalytics.com) to support the data submission.

Capacity Market Sellers who intend to have default or unit specific ACR based offer caps calculated for a resource must submit a reactive capability revenue value in $ per MW-year, regardless of whether the unit was part of a fleet rate or received unit specific revenue. The value should be equal to the average reactive capability revenue received in the three most recent calendar years prior to the year in which the BRA for the relevant delivery is conducted if reactive revenue was received in each year. If reactive capability revenue was received for less than three years, the submitted value should be the average annualized value using the data available. Capacity Market Sellers should enter the relevant reactive filing docket number(s) in the Reactive Capability Revenue Justification field.

7 RPM Offer Cap Confirmation

The RPM Offer Cap Confirmation function in the RPM/ACR system is used for the communication of MSOC determinations by the MMU and notifications by Capacity Market Sellers on whether they agree with the MMU's MSOC determinations.

No later than 90 days prior to the RPM Auction, the MMU posts the MMU offer cap determinations to the RPM Offer Cap Confirmation screen in the RPM/ACR system. No later than 80 days prior to the RPM Auction, Capacity Market Seller must log into the RPM/ACR system, review the offer cap value(s) (which may be modified based on discussion with the MMU), and confirm that it agrees with the posted values or indicate the lowest value to which it commits. If the Capacity Market Seller indicates a level higher than the posted level, the MMU will evaluate

whether it must bring the matter to the attention of the Federal Energy Regulatory Commission, including the option to file a Complaint.

7.1 Accessing the RPM Offer Cap Confirmation Screen

To access the RPM Offer Cap Confirmation function, a MIRA user must have RPM/ACR User permissions for the selected company. If the user has such permissions, the RPM Offer Cap Confirmation link will be visible under Reporting on the menu bar. A PJM Company Account Manager (CAM) has the ability to grant users this access type (See Section 2.1). To access the RPM Offer Cap Confirmation function, do the following:

1) Select the Capacity Market Seller company.
2) Under Reporting in the Menu Bar, click on the RPM Offer Cap Confirmation link.
3) Select the Delivery Year and Auction and Auction Name (covered by drop down menu in screen shot below).
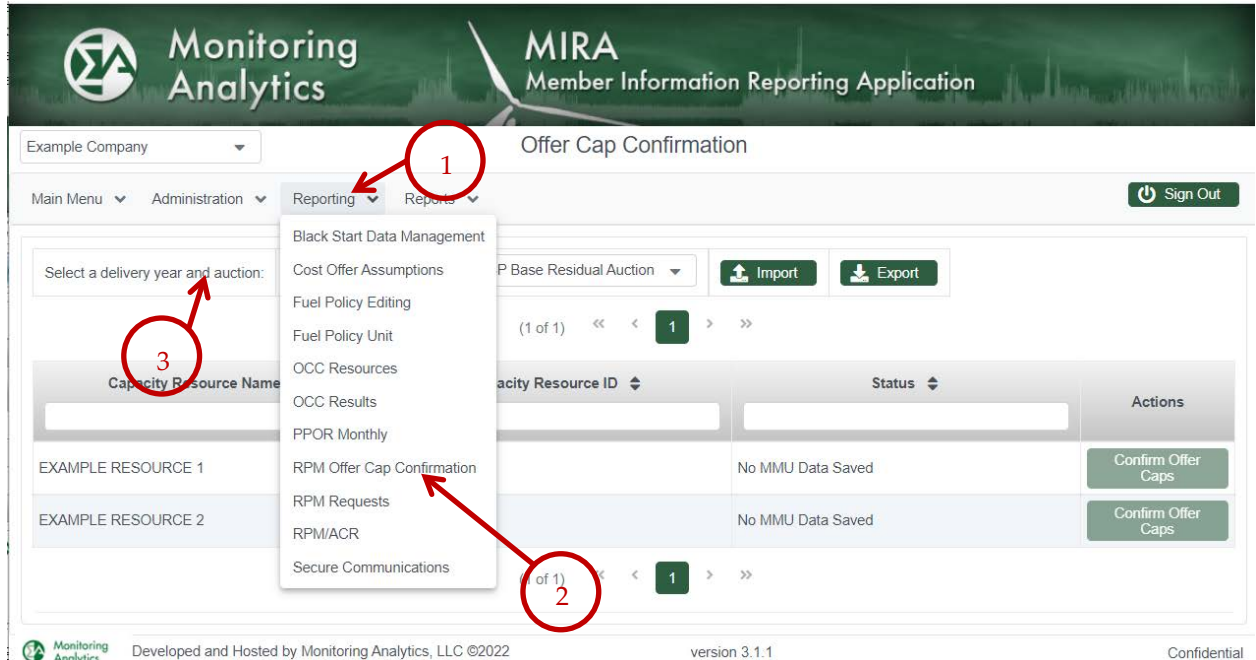
After selecting the auction name, a list of capacity resources that the company owns or has capacity rights for the specified auction will be displayed in the Offer Cap Confirmation screen.

7.2 The Offer Cap Confirmation Period

The offer cap confirmation period is 10 days, starting 90 days prior to the RPM Auction until 80 days prior to the RPM Auction.

Outside of the offer cap confirmation period, no offer cap data may be edited by the Capacity Market Seller. A locked Offer Cap Confirmation screen can be observed when all Edit Offer Cap buttons are grayed out, and the Import button is grayed out.

7.3 Details of Offer Cap Confirmation Screen

The RPM Offer Cap Confirmation screen shows the following details:

Capacity Resource Name and Capacity Resource ID: These columns can be sorted by using the up and down arrow next to the column header, or they can be searched by typing in the blank fields immediately below the column header.

Status: The Status column reflects the state of the offer cap data for that capacity resource. This status can be used to keep track of which resources have yet to have their offer caps confirmed by the Capacity Market Seller. The status/workflow steps are as follows:

- **No MMU Data Saved:** If the MMU has not loaded offer cap data for a capacity resource, the status will read "No MMU Data Saved." If the MMU has not loaded data for a capacity resource, there are no offer cap values available to be confirmed. Therefore, the Edit Offer Cap button under the Actions column is disabled, and no Capacity Market Seller offer cap data can be entered or saved.
- **No CMS Data Submitted:** If the MMU has loaded offer cap data for a capacity resource, but the Capacity Market Seller has yet to enter any data, the status will read "No CMS Data Submitted."
- **CMS Data Submitted:** If the Capacity Market Seller has successfully saved Offer Cap data for a capacity resource, the status will read "CMS Data Submitted." As long as the Offer Cap confirmation period is open, Capacity Market Sellers can update their offer cap selections.

Actions: Each capacity resource has a single action button (Edit Offer Cap), which is available during the Offer Cap confirmation period if MMU offer cap data have been loaded. When the Capacity Market Seller clicks on the Edit Offer Cap button for a resource, a dialogue box will appear for that resource, which provides an opportunity to view the MMU offer cap values and to submit Capacity Market Seller offer cap values.

7.4 Confirming Offer Caps through the User Interface

The Edit Offer Cap screen contains four columns for each offer cap type. The first two columns are populated by the MMU and present the MMU MW and $/MW-Day values. The last two columns are for Capacity Market Sellers to enter their selection of MW and the $/MW-Day values for the selected resource.

To select a single offer cap value to be applied to all offered MW for a resource, enter the offer cap value in the CMS $/MW-Day field in the corresponding offer cap type row, and the CMS MW field may be left blank. It is only necessary to enter a value in the CMS MW field when different offer cap types are to be applied by segment.

The number of rows in the Edit Offer Cap screen will depend on the number of offer cap types that are available to the Capacity Market Seller. The number of offer cap types depends on the data that have been provided to the MMU as well as the rules pertaining to the auction. For example, in the Edit Offer Cap screen below, there are two offer cap types: one based on ACR data and one based on Opportunity Cost data provided to the MMU by the Capacity Market Seller.

To complete the offer caps confirmation, the following steps should be taken:

1) Observe the MMU MW and MMU $/MW-Day values.
2) Enter CMS selection of MW and $/MW-Day values in the Capacity Market Seller (CMS) columns.
3) Notice the MW Limit field. The sum of all CMS MW may not exceed the MW Limit specified.
4) Once CMS data have been entered, click the Save button to commit the entered CMS data to the database.

Confirm Offer Caps

Capacity Resource Name	Capacity Resource ID	MW Limit
Demonstration Resource 1	DEMO1	999.0

Offer Cap Type	MMU MW	MMU $/MW-Day	CMS MW	CMS $/MW-Day
ACR Based Offer Cap	999.0	$250.00		
Opportunity Cost Offer Cap	888.0	$249.00	888.0	$249.00

Save   Cancel

In the next example, there are 10 rows of offer cap types available to the Capacity Market Seller, consisting of a variety of offer cap types.

For details on the offer cap types, see Section 7.8 Offer Cap Categories and Definitions.

Confirm Offer Caps

Capacity Resource Name	Capacity Resource ID	MW Limit
DEMO CAPACITY RESOURCE 2	99999992	999.0

Offer Cap Type	MMU MW	MMU $/MW-Day	CMS MW	CMS $/MW-Day
ACR Based Offer Cap	999.0	$250.00	999.0	$250.00
Price Taker	2.0	$0.00		
Opportunity Cost Offer Cap	888.0	$249.00		
Alternative Offer Cap	777.0	$248.00		
1.1 Times BRA Clearing Price	666.0	$247.00		
Net CONE Based Offer Cap	555.0	$246.00		
Segment 1	444.0	$245.00		
Segment 2	333.0	$244.00		
Segment 3	222.0	$243.00		
Segment 4	111.0	$242.00		

Save   Cancel

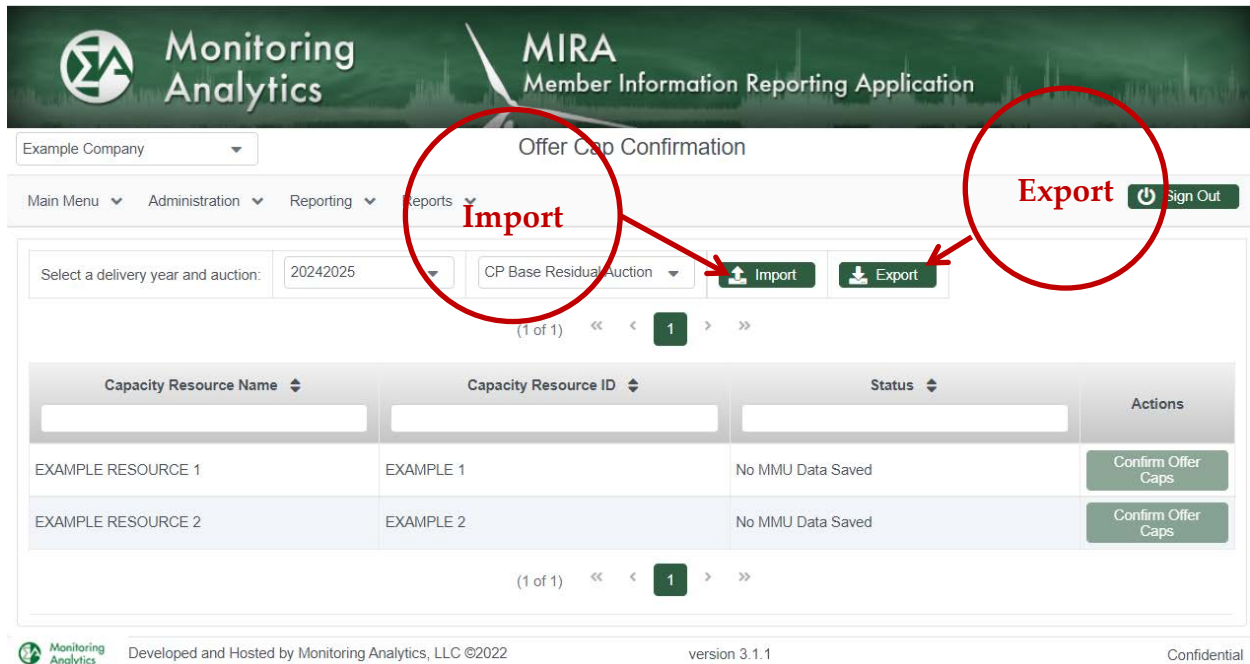## 7.5 Exporting MMU Offer Cap Values and CMS Offer Cap Selections

Capacity Market Sellers may use the Export function on the RPM Offer Cap Confirmation screen to generate a spreadsheet that contains a row for each of the CMS capacity resources, and four columns (MMU MW, MMU $/MW-Day, CMS MW, and CMW $/MW-Day) for each offer cap type. With 15 offer cap types, as well as headers, this results in over 60 columns in the export spreadsheet.

The MMU columns are shaded gray, and the CMS columns are unshaded to help differentiate. The following is a picture of the export spreadsheet example including the MMU and CMS columns for the first offer cap type.

Delivery Year	Auction Name	Company ID	Resource ID	Resource Name	MMU ACR Based Offer Cap (MW)	MMU ACR Based Offer Cap ($/MW-Day)	CMS ACR Based Offer Cap (MW)	CMS ACR Based Offer Cap ($/MW-Day)
20182019	Base Residual Auction	DEMOCO1	DEMO1234	Demonstration Capacity Resource 1	123.4	99.99		
20182019	Base Residual Auction	DEMOCO1	DEMO2234	Demonstration Capacity Resource 2	99.9	55.55		
20182019	Base Residual Auction	DEMOCO1	DEMO3234	Demonstration Capacity Resource 3	0.5	111.11		

The MMU columns in the export file will be populated with any MMU offer cap MW or $/MW-Day data that the MMU has loaded.

Capacity Market Sellers can save this Export file, add their offer cap MW and $/MW-Day selections to the CMS columns, and then import the resulting file using the Import function described next.

7.6 Importing CMS Offer Cap Selections

To import CMS offer cap data, it is recommended to first use the Export function to observe the MMU values, and to create the correct column headers, row headers, and tab name in the spreadsheet. When the spreadsheet has been exported, the MMU values reviewed, and CMS values edited, click on the Import button shown in the screen shot above. This will present the user with a navigation pane to identify the import file in the user's file system.

The import process will read the CMS values out of the spreadsheet for each of the CMS columns. The import process ignores data in the MMU columns, so any edits made to MMU data will not be imported. The data in the CMS columns will be validated in accordance with the validation rules described in Section 7.7 Import and User Interface Data Input Validations.

If any data in the import file fail a validation check, the entire import fails, and no CMS data will be uploaded. CMS data will only successfully upload if all data passes the validation rules. Import files that pass the validation checks and are successfully imported are committed to the database without any additional save operation required.

Importing data where data already exists will overwrite the CMS data. Blank CMS cells in the import file will null out their corresponding cells in the system data, even if they had previously been populated by the CMS.

After importing the offer cap data, it is recommended that the user open the Edit Offer Cap screen for each capacity resource to visually inspect and confirm the selected offer caps.

7.7 Import and User Interface Data Input Validations

The following are the data rules that apply to importing and to manually saving CMS offer cap data. Violation of these validation rules will result in a system error, and the values will not be imported or saved.

- For a resource, the sum of all CMS MW cannot exceed the MW Limit.
- CMS MW value cannot be entered for an offer cap type in which the corresponding MMU MW value is null.
- CMS $/MW-Day value cannot be entered for an offer cap type in which the corresponding MMU $/MW-Day value is null.
- CMS MW value for an offer cap type cannot exceed the corresponding MMU MW value.

7.8 Offer Cap Categories and Definitions

Offer cap types. Offer cap types include the following (per PJM Open Access Transmission Tariff (OATT) Attachment DD § 6.4):

- **ACR based.** An ACR based offer cap which is calculated as the ACR less net revenues, where the ACR is either the default or calculated unit specific. The currently defined default ACR values and the ACR template to calculate a unit specific ACR are posted on the Monitoring Analytics website's Tools page. Effective with the 2020/2021 and subsequent Delivery Years, default ACRs are not an option for calculating offer caps.
- **Opportunity cost based.** An opportunity cost based offer cap which is the documented price available to an existing generation resource in a market external to PJM.
- **Alternative.** An alternative offer cap as approved by the MMU and FERC.
- **1.1 times BRA price.** Election of the 1.1 times the Base Residual Auction clearing price offer cap for the Third Incremental Auction.
- **Segmented.** Segmented offer caps, as arranged in advance with the MMU.

Offer Caps in terms of ICAP. Offer cap values in the Confirm Offer Caps screen are presented in $/MW-day in terms of installed capacity (ICAP) for all auctions except Third Incremental Auctions (or Conditional Incremental Auctions held after the date on which the final EFORds for a Delivery Year are posted), where offer caps are presented in terms of unforced capacity (UCAP). An ICAP based offer cap can be converted to a UCAP basis by dividing by (1 – EFORd), where the EFORd is the value submitted with the offer. The submission of seller offer prices and the application of offer caps in the auction are on a UCAP basis.

MW Limit. The MW Limit values in the Confirm Offer Caps screen are presented in terms of ICAP MW for all auctions except Third Incremental Auctions (or Conditional Incremental Auctions held after the date on which the final EFORds for a Delivery Year are posted), where the capacity values are presented in terms of UCAP MW. For Base Residual Auctions and Third Incremental Auctions, the MW Limit value in the Confirm Offer Caps screen represents the Available MW value for the auction. For First and Second Incremental Auctions, the MW Limit

value in the Confirm Offer Caps screen represents the Minimum Available MW value for the auction.