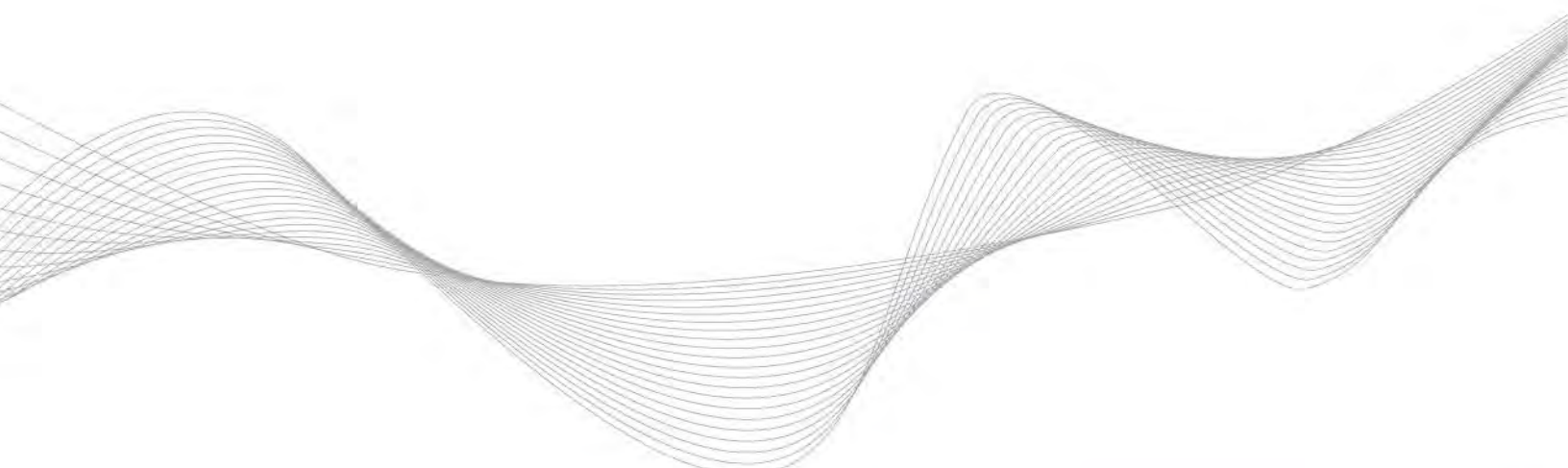




FTR Center Users Guide



Disclaimer –

The *PJM FTR Center Users Guide* is intended to provide Market Participants and other interested parties with introductory information about the bidding and administrative processes of the PJM FTR Market. The User's Guide is an instruction tool and is not intended to be a complete source of information about PJM's bidding and administrative processes. The PJM ISO provides no warranties of any kind with respect to the correctness or completeness of the information set forth in this Users Guide, and, therefore bears no responsibility for any damages resulting from a Market Participant's reliance on any error or omission in this guide. The *PJM FTR Center Users Guide* is not designed, nor is it intended to provide, advice or guidance with respect to strategies for bidding into the PJM FTR Market. Market Participants who choose to participate in the PJM FTR Market do so at their own risk and assume full responsibilities for acquiring information appropriate for participating in the auction.

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Revision Log

- **2/18/16** – First revision in new template for FTR Center. Content carried over from eFTR User Guide Revision 43 (PJM 2009).

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I. Introduction

The PJM FTR Center *Users Guide* provides Market Participants with the information needed to participate in the PJM FTR Market. It describes the FTR Center software. The User Guide also describes the tasks that Market Participants can perform, as well as the expected system responses.

A) Overview of the PJM FTR Market

Transmission congestion charges are incurred when the transmission grid is congested and differences in Congestion Prices result from the dispatch of generators out of merit order to relieve congestion. Utilizing Locational Marginal Pricing to manage transmission congestion exposes Market Participants to price uncertainty for congestion cost charges. During these constrained conditions, the market collects more revenue from loads than it pays to the generators.

Financial Transmission Rights (FTRs) are financial instruments that entitle the holder to a stream of revenues (or charges) based on the hourly Day-ahead congestion price differences across the transmission path.

The purpose of a Financial Transmission Right is to provide all Market Participants the ability to have price certainty when delivering energy across the PJM system. FTRs provide a hedging mechanism that can be traded separately from transmission service. They do not represent a right for physical delivery of power.

Throughout the year, PJM oversees the process of selling and buying FTRs through FTR Auctions. Market Participants purchase FTRs by participating in Long Term, Annual and Monthly FTR Auctions. The clearing mechanism of the FTR Auctions will maximize the quote-based value of FTRs awarded in each auction. Auction Revenue Rights (ARRs) are the mechanism by which the proceeds from the Annual FTR Auctions are allocated. Auction Revenue Rights are entitlements allocated annually to Firm Transmission Service Customers that entitle the holder to receive an allocation of the revenues from the Annual FTR Auction. The proceeds from the Annual FTR Auction are distributed to ARR holders.

B) What is a Financial Transmission Right (FTR)?

An FTR, or Financial Transmission Right, is:

“A financial instrument awarded to bidders in the FTR Auctions that entitle the holder to a stream of revenues (or charges) based on the hourly Day-ahead congestion price differences across the path.”

An FTR entitles the holder to receive compensation for Transmission Congestion Charges that arise when the transmission grid is congested in the Day-ahead Market and differences in Day-ahead Congestion Prices result from the dispatch of generators out of merit order to relieve the congestion. Each FTR is defined from a point of receipt (where the power is injected onto the PJM grid) to a point of delivery (where the power is withdrawn from the PJM grid). They do not represent a right for physical delivery of power.

Market Participants are able to acquire financial transmission rights in the form of options or obligations. For each hour in which congestion exists on the Transmission System between the receipt and delivery points specified in the FTR, the holder of the FTR is awarded a share of the Transmission Congestion Charges collected.

C) What is the Purpose of Financial Transmission Rights?

One purpose of FTRs is to protect Firm Transmission Service Customers from increased cost due to Transmission Congestion when their energy deliveries are consistent with their firm reservations. Essentially, FTRs are financial instruments that entitle the holder to rebates of congestion charges paid by the Firm Transmission Service Customers.

The holder of the FTR is not required to deliver energy in order to receive a congestion credit. If a constraint exists on the Transmission System in the Day-ahead Market, the holders of FTRs receive a credit based on the FTR MW reservation and the congestion price difference between point of delivery and point of receipt. This credit is paid to the holder regardless of who delivered energy or the amount delivered across the path designated in the FTR.

D) What is an Auction Revenue Right (ARR)?

An ARR, or Auction Revenue Right, is:

“An entitlement allocated annually to Firm Transmission Service Customers that entitle the holder to receive an allocation of the revenues from the Annual FTR Auction.”

Auction Revenue Rights (ARRs) are the mechanism by which the proceeds from the Annual FTR Auction are allocated. Auction Revenue Rights are entitlements allocated annually to Firm Transmission Service Customers that entitle the holder to receive an allocation of the revenues from the Annual FTR Auction.

E) What is the Purpose of Auction Revenue Rights?

Because Auction Revenue Rights (ARRs) are the mechanism by which the proceeds from the Annual FTR Auction are allocated, ARRs provide a revenue stream to transmission customers to offset the purchase price of FTRs on the paths for which they hold ARRs. Participation in the Annual FTR Auction for ARR holders is optional in the sense that an ARR holder can directly schedule an FTR purchase in the Annual FTR Auction on the same path and for the same MW amount as its ARR. In this case, the ARR holder would receive the FTR and be guaranteed that the ARR credit would be exactly equal to the FTR purchase price. Essentially, ARRs can act as a hedge for Network and Firm Point-to-Point transmission customers against the purchase price of an FTR in the Annual FTR Auction.

Also, since ARRs are allocated to all Network and Firm Point-to-Point Transmission Service customers, participants in the Annual FTR Auction have enhanced flexibility while maintaining the hedging priority for native load customers in the form of ARR entitlements.

F) Typical uses PJM FTR Center

Market Participants can use the PJM FTR Center to:

- Prepare and submit Long Term FTR Auction bids and offers
- Prepare and submit Annual FTR Auction bids and offers
- Prepare and submit Monthly FTR Auction bids and offers
- Participate in the FTR Secondary Market
- Manage FTR Portfolios
- Review auction results
- Prepare and submit ARR requests in the Annual ARR Allocation
- Prepare and submit FTR requests in the FTR Allocations for new market zones
- Review Annual and Residual ARR allocation results
- Upload and download auction files
- View credit requirements

G) Interfacing with PJM FTR Center

Market Participants have two primary methods of interacting with PJM FTR Center. The methods are:

Web-based Interactions — access is provided through a series of worldwide, web-based interactive displays, which are accessible in the Internet.

Upload/download File Procedures — sets of data files are submitted or accessed through an upload or download process in the Internet. Section 10 of this User Guide describes how to perform these tasks.

H) Who is this user guide for?

This *PJM FTR Center User Guide* is for Market Participants who need to use the FTR Center System to perform the following tasks:

- View information, such as clearing prices for an auction, existing FTRs, or auction results for a specific auction
- Manage auction portfolios
- View participant-specific information, such as participant-specific messages and quotes
- Manage auction quotes
- Participate in the FTR Secondary Market

- Participate in the Annual ARR Allocation
- View information, such as awarded ARRs from the Annual ARR Allocation
- Participate in FTR Allocations conducted for integration of new market zones.
- Upload and download XML files

l) What this user guide covers

This user guide explains, in step-by-step fashion, how to perform all the functions available in the PJM FTR Center system. It contains the following sections:

Section Name	Contents
Introduction	An overview of the PJM FTR Market A description of the contents of this document Other sources of information Special skills you need to use the FTR Center system
PJM FTR Center System	An overview of the FTR Center system Definitions PJM FTR Center Components
PJM FTR Center Website	Accessing PJM FTR Center System PJM FTR Center Navigation
Managing Information	How to download reports How to view messages and logs
Managing Auction Portfolios	How to define new auction portfolios How to view existing auction portfolios How to add a path to an existing auction portfolio How to delete a path from an existing auction portfolio How to delete auction portfolios How to download portfolio information

Section Name	Contents
Viewing FTR Auction Results	<ul style="list-style-type: none"> How to view FTR Obligation clearing prices How to view FTR Option clearing prices How to view auction results How to view binding transmission constraints How to download auction results
Managing FTR Auction Quotes	<ul style="list-style-type: none"> How to view pending auction quotes How to create auction quotes How to update auction quotes How to delete auction quotes How to download quote information
Participating in FTR Secondary Market	<ul style="list-style-type: none"> How to view available FTR bilateral trades How to post a FTR bilateral trade How to submit a FTR bilateral trade How to accept a FTR bilateral trade How to deny a FTR bilateral trade How to download FTR bilateral trade information
Viewing FTR Positions and Credit	<ul style="list-style-type: none"> How to view FTR Positions How to view FTR Credit Summary How to view FTR Individual Credit Detail
Participating in the Annual ARR Allocation	<ul style="list-style-type: none"> How to request ARRs in Stage 1 of the Annual ARR Allocation How to request ARRs in Stage 2 of the Annual ARR Allocation How to view the results of the Annual ARR Allocation How to download ARR information
Transferring Files	<ul style="list-style-type: none"> An overview of the file transfer process How to upload files How to download files

Each section presents the following introductory information:

An overview

- Steps to follow to perform a task
- Expected PJM FTR Center system responses

J) Knowledge it's assumed you have

The *PJM FTR Center User Guide* is written under the assumption that you:

- Understand how the PJM Energy Market operates
- Know what an FTR is and how the PJM Energy Market uses FTRs
- Know what an ARR is and how the PJM Energy Market uses ARRs

If you would like additional information about any of these topics, consider referencing the following information sources:

- PJM Manuals
- PJM Energy Market Training Material
- PJM FTR External Interface Specification
- PJM's Internet site (www.pjm.com)

II. PJM FTR Center System

A) Overview

PJM FTR Center is designed to make it easy for you to participate in PJM's Long Term FTR Auction, Annual FTR Auction, the Monthly FTR Auctions, and the FTR Secondary Market. Market Participants use PJM FTR Center to acquire or sell FTRs.

PJM FTR Center is also designed to make it easy for you to participate in PJM's Annual ARR Allocation. Market Participants use PJM FTR Center to request ARRs in the Annual ARR Allocation.

B) Definitions

The following terms appear on the PJM FTR Center web pages:

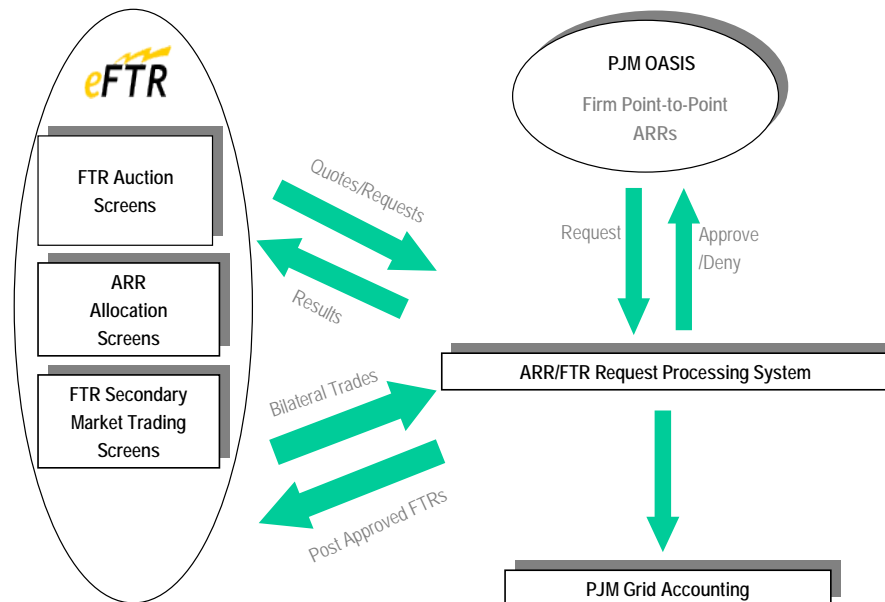
- **24 Hour Price** -- The clearing price on a path for an auction for the 24 Hour period. The clearing prices are defined by the differences of the locational marginal prices at the sink and source nodes of an FTR Obligation when the hourly interval associated with the FTR Obligation is specified as "24 Hour".
- **Bid MW** – The MW amount of the FTR requested or sold, specified to the nearest 0.1 MW. FTR MW values are treated as up to quotes in the FTR auction analysis.
- **Bid Price** – The dollar amount of the quote, specified in \$/MW-period to the nearest \$0.01. The Bid Price may be a positive or a negative number for an FTR Obligation. The Bid Price cannot be negative for an FTR Option.
- **Class** — Designates the hourly interval associated with the FTR specified as:
 - OnPeak — for the on-peak period
 - OffPeak — for the off-peak period
 - 24Hr — for the 24-hour period
- **Cleared MW** – The MW cleared on a path for an auction.
- **Cleared Price** – The clearing price on a path for an auction. The clearing prices are defined by the differences of the locational marginal prices at the sink and source nodes of an FTR.
- **Contingency** — The facility whose outage would cause a monitored facility violation.
- **End Date** — The end date for the FTR, in DD/MM/YYYY format.
- **Hedge** – An FTR can be specified as an Obligation or Option.
- **On Peak MW** — For an upcoming FTR auction, the available FTR capability on a specified path for the on-peak period.

- **Off Peak MW** — For an upcoming FTR auction, the available FTR capability on a specified path for the off-peak period.
- **OnPeak Price** – The clearing price on a path for an auction for the On Peak period. The clearing prices are defined by the differences of the locational marginal prices at the sink and source nodes of an FTR Obligation when the hourly interval associated with the FTR Obligation is specified as “On Peak”.
- **OffPeak Price** -- The clearing price on a path for an auction for the Off Peak period. The clearing prices are defined by the differences of the locational marginal prices at the sink and source nodes of an FTR Obligation when the hourly interval associated with the FTR Obligation is specified as “Off Peak”.
- **Marginal Value** — The shadow price of the constraint.
- **Market** — For FTR Quotes, the FTR Auction, long term, annual or monthly, for which the quotes are submitted. For ARR Requests, the Annual or Residual ARR Allocation for which requests are submitted.
- **Monitored Facility** — The facility that is violated under normal or contingency conditions.
- **NSPL** – The Network Service Peak Load value in each transmission zone.
- **Period** – The duration of an FTR.
- **Portfolio** — Participant chosen name for the portfolio.
- **Round Capability** – The amount of ARRs that may be requested in Stage 1A, Stage 1B and each round of Stage 2 of the Annual ARR Allocation. ARRs awarded in previous rounds are taken into account in Stage 1B and each round of Stage 2.
- **Sink** – The pricing node specifying the sink of the path.
- **Source** – The pricing node specifying the source of the path.
- **Stage** — The stage, Stage 1A, Stage 1B or Stage 2, and round (1, 2, 3) of the Annual ARR Allocation.
- **Start Date** — The start date for the FTR, in DD/MM/YYYY format.
- **Trade** – Field specifying whether a quote is an offer to sell or bid for purchase. User may specify a quote as Buy, Sell or Self-Scheduled. Awarded Auction Revenue Rights (ARRs) from the Annual ARR Allocation may only be self-scheduled as FTRs in the first round of the Annual FTR Auction.

c) PJM FTR Center Components

PJM FTR Center is an Internet application that allows Market Participants to participate in PJM's FTR Auctions and FTR Secondary market.

The following figure illustrates interfaces to PJM FTR Center:



III. PJM FTR Center Web Site

Market Participants interface with PJM FTR Center via the Market User Interface, or MUI. The PJM FTR Center application is integrated into PJM SSO integration which allows the user to access various PJM web based applications via a single username and password. The Single Sign on environment is accessed via Internet facilities, using the following Web Browsers:

- Internet Explorer 9 & forward
- Current version of Chrome
- Current version of Firefox
- Current version of Safari

A) Accessing PJM FTR Center Application

- i) Enter the following URL for PJM FTR Center on the ADDRESS field of Internet Explorer

Ftrcenter.pjm.com

- ii) Type in Username and Password.

You must login as a qualified user of FTR Center.

B) PJM FTR Center Navigation

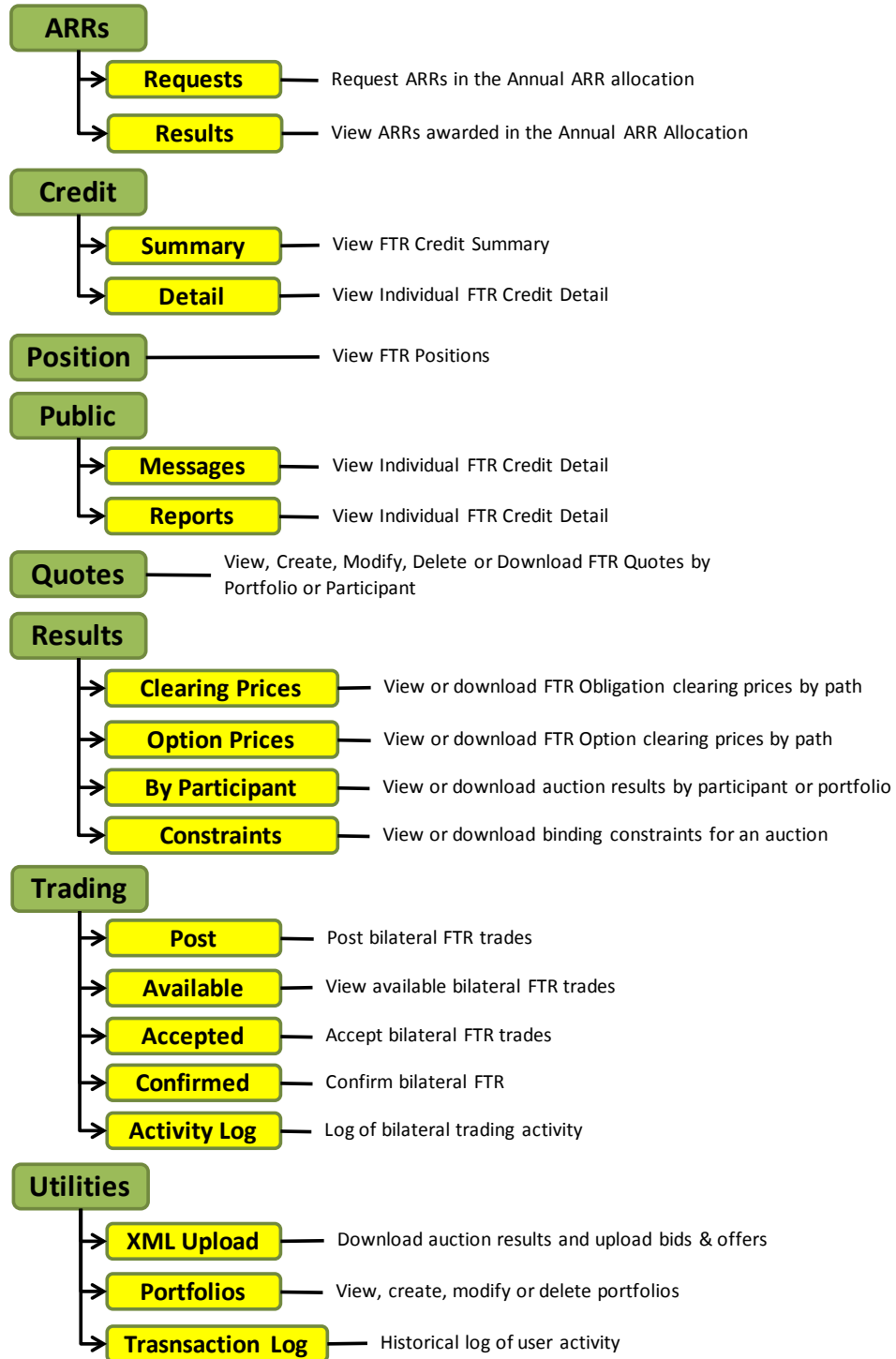
Using the PJM FTR Center web site, you can navigate to PJM FTR Center web pages, as well as to other PJM web sites in the PJM application environment.

FTR Center Navigation Buttons — The Navigation Buttons provide links to the following PJM webpages within the FTR Center System:

- ARRs
- Credit
- Position
- Public
- Quotes
- Results
- Trading
- Utilities

c) PJM FTR Center Web Pages

The following diagram provides an overview of PJM FTR Center menu options. Use it as a memory aid if you are unsure where to look to perform a particular task.



IV. Managing Information

A) Overview

Prior to accessing FTR Center web pages you must be a PJM Member and register with PJM. Registered FTR Center users can view and modify the following information:

Registered FTR Center users:

- can view user-specific information, system status information, and FTR market information
- may submit user-specific information, such as auction quotes and bilateral trades
- can view general public information, such as auction clearing prices and option prices
- may download information in the form of reports, as well as upload information to the FTR Center system

B) What Web Pages Do I Use?

The following web pages are used to manage user information.

- Messages - use this web page to view messages sent by PJM regarding the status of the FTR Market or the status eFTR System.
- Reports – use this view and download reports.

C) Task 1: Download Reports

FTR Center provides a number of reports that a user can view, download, or save. These reports provide the FTR Center user the ability to view auction results for past auctions to evaluate past performance, as well as view user information.

The following is list of reports that an FTR Center user can select:

- Obligation Clearing Prices By Node
- Option Clearing Prices By Path
- Cleared FTRs by Owner
- Constraints
- FTR Quotes

- Auction Results
- Portfolios
- Option Paths
- FTR Nodes

Steps:

- 1) Select the Public button.
- 2) Select the Reports tab.
A list of reports appears.
- 3) Select desired market, round and period from the dropdown.
Previously cleared and upcoming FTR Auctions appear in Market pulldown list.
- 4) Click the checkbox to highlight desired report.
- 5) To download report, select the XML button located in the upper right of the screen next to “Refresh” button.

D) Task 2: View Messages and Logs

- 6) Select the Public button.
- 7) Select the Messages tab.
A list of current messages appears.

V. Managing Auction Portfolios

A) Auction Portfolio Overview

Considering the large volume of buses in the expanding PJM service territory, the number of available transmission paths for FTRs becomes vast. Portfolios are a method of managing these large amounts of data. A portfolio consists of multiple transmission paths; each path is defined by a source and a sink. Portfolios enable the Market Participants to review auction results and to make auction decisions by filtering data to show only the transmission paths of interest.

B) What Web Pages Do I Use?

The following web pages are used to view auction results.

- **Portfolios** - use this web page to view, create or delete portfolios. Also use this page to add or delete paths to new and existing portfolios.

C) Task 1: Define New Portfolios

Portfolios are intended to allow participants to screen FTR information so that only paths of interest are displayed. Each eFTR user defines their individual portfolios. You may want to consider the following information when defining portfolios:

- Transmission paths for which you are interested in viewing auction information
- Transmission paths for which you deliver energy and may submit quotes for FTRs.
- Transmission paths for which you own FTRs and may want to submit offers to sell them.
- Defining multiple portfolios to match various energy trading patterns that you use.

FTR Center users name each portfolio, when it is created. There is currently no limit to the number of portfolios a user can create; nor is there currently a limit to the number of transmission paths that can be assigned to a portfolio. The same transmission path can be assigned to more than one portfolio.

Steps:

- 1) Select the Utilities button.
- 2) Select Portfolios tab.

The Portfolios webpage appears.

- 3) Select the Create Portfolios button.

A new row appears to add a user-defined name.

- 4) Right click in the Portfolio's Paths to Add, Modify or Remove paths
A new row appears to add a transmission path.
- 5) Input the desired source in the Source field.
Begin typing the name of the source, and the Source pulldown list appears. The Source pulldown list presents the list of valid FTR sources. Highlight a valid source, and then click outside field to choose node.
- 6) Input the desired sink in the Sink field.
Begin typing the name of the sink, and the Sink pulldown list appears. The Sink pulldown list presents the list of valid FTR sinks. Highlight a valid sink, and then click outside field to choose node.
- 7) Select the Save button.
If submitted correctly, You will see a successful message displayed
- 8) Click Refresh.
The most recent data from the database appears.

D) Task 2: View Existing Portfolios

Steps:

- 1) Select the Utilities button.
- 2) Select Portfolios tab.
The Portfolios webpage appears.
- 3) Select the desired portfolio from the Portfolio list.
The paths for the selected portfolio appear in the Source/Sink list.
- 4) Review the defined paths for the selected portfolio in the Source list.
- 5) Click the Refresh button.
The most recent data from the database appears.

E) Task 3: Add Paths in Portfolio

Steps:

- 1) Select the Utilities button.
- 2) Select Portfolios tab.

The Portfolios webpage appears.

- 3) Select the desired portfolio from the Portfolio list.

The paths for the selected portfolio appear in the Source/Sink List.

- 4) Review the defined paths for the selected portfolio in the Source list.

- 5) Right click in the Portfolio's Paths section and select "Add Path"

A new row appears to add a transmission path.

- 6) Input the desired source in the Source field.

Begin typing the name of the source, and the Source pulldown list appears. The Source pulldown list presents the list of valid FTR sources. Highlight a valid source, and then click outside field to choose node.

- 7) Input the desired sink in the Sink field.

Begin typing the name of the sink, and the Sink pulldown list appears. The Sink pulldown list presents the list of valid FTR sinks. Highlight a valid sink, and then click outside field to choose node.

- 8) Click the Save Button

If submitted correctly, the entire line will change color.

- 9) Click the Refresh button.

The most recent data from the database appears.

F) Task 4: Delete Paths in a Portfolio

Steps:

- 1) Select the Utilities button.

- 2) Select Portfolios tab.

The Portfolios webpage appears.

- 3) Select the desired portfolio from the Portfolio list.

The paths for the selected portfolio appear in the Source/Sink List.

- 4) Review the defined paths for the selected portfolio in the Source/Sink list.

- 5) Click to highlight desired transmission path to be deleted.

- 6) Right click and select Remove item

- 7) Refresh.

The most recent data from the database appears.

G) Task 5: Delete Portfolios

Steps:

1) Select the Utilities button.

2) Select Portfolios tab.

The Portfolios webpage appears.

3) Select the desired portfolio from the Portfolio list.

The paths for the selected portfolio appear in the Source/Sink List.

4) Review the defined paths for the selected portfolio in the Source/Sink list.

5) Select the Remove button.

6) Select Refresh.

The most recent data from the database appears.

VI. Viewing Auction Results

A) Auction Results Overview

The focus of this section is viewing auction information that is available to Market Participants and other interested parties who are registered users of the FTR Center system. Auction results include auction results for long term, annual and monthly auctions, obligation clearing prices, option prices, and binding transmission constraints.

B) What Web Pages Do I Use?

The following web pages are used to view auction results.

- **Clearing Prices** – use this web page to view FTR Obligation clearing prices for all paths within a user specified portfolio for an auction.
- **Option Prices** – use this web page to view FTR Option clearing prices for all valid FTR Option paths that have cleared in an auction.
- **By Participant** – use this web page to view all winning quotes for an auction for participant, using the Portfolio filters will also show winning quotes by portfolio.
- **Constraints** – use this web page to view binding transmission constraints for an auction. The web page presents the monitored facility, as well as the contingency.

C) Task 1: View Clearing Prices

A user can view the clearing prices of FTR Obligations for an auction, filtered by a transmission path defined in one of the portfolios. (For more information on portfolios, see Section 5). The Clearing Prices web page presents on peak, off peak, and 24 hour clearing prices for FTR Obligations. You can view clearing prices for past auctions to evaluate past performance.

For each path defined within a portfolio, the following clearing price information for each FTR Obligations is presented:

- **Period** – *The Market Period for the selected market name.*
- **Source** – The pricing node specifying the source of the path.
- **Sink** – The pricing node specifying the sink of the path.

- **OnPeak Price** – The clearing price on a path for an auction for the On Peak period. The clearing prices are defined by the differences of the locational marginal prices at the sink and source nodes of an FTR Obligation when the hourly interval associated with the FTR Obligation is specified as “On Peak”.
- **OffPeak Price** – The clearing price on a path for an auction for the Off Peak period. The clearing prices are defined by the differences of the locational marginal prices at the sink and source nodes of an FTR Obligation when the hourly interval associated with the FTR Obligation is specified as “Off Peak”.
- **24Hour Price** – The clearing price on a path for an auction for the 24 Hour period. The clearing prices are defined by the differences of the locational marginal prices at the sink and source nodes of an FTR Obligation when the hourly interval associated with the FTR Obligation is specified as “24 Hour”

Steps:

- 1) Select the Results button.
- 2) Select the Clearing Prices tab.
The Clearing Prices webpage appears.
- 3) Select portfolio name from Portfolio list.
The source/sink paths defined for the selected portfolio appear.
- 4) Select desired market from Market list.
FTR Auctions that have cleared appear in Market pulldown list.
- 5) Select desired round from Round list.
Rounds 1 – 4 appear in Round list. If a Long Term or Annual FTR Auction is selected by user in Step 3, an auction round must be selected.
- 6) Select desired period from the Period list
- 7) Review the following clearing price data with respect to each path in selected portfolio:
 - ◆ Period
 - ◆ Source
 - ◆ Sink
 - ◆ On-Peak Price (\$/MWh)
 - ◆ Off-Peak Price (\$/MWh)
 - ◆ 24-Hour Price (\$/MWh)

- 8) To download information;
 - a. CSV – Click CSV button in the upper right corner
 - b. XML – Click XML button in the upper right corner

D) Task 2: View Option Prices

A user can view the clearing prices of FTR Options for an auction, filtered by a transmission path. The Option Prices web page presents on peak, off peak, and 24 hour clearing prices for FTR Options. You can view clearing prices for past auctions to evaluate past performance.

For each path defined within a portfolio, the following clearing price information for each FTR Options is presented:

- **Period** – *The market period for the selected market name.*
- **Source** – The pricing node specifying the source of the path.
- **Sink** – The pricing node specifying the sink of the path.
- **OnPeak Price** – The clearing price on a path for an auction for the On Peak period. The clearing prices are defined by the differences of the locational marginal prices at the sink and source nodes of an FTR Option when the hourly interval associated with the FTR Option is specified as “On Peak”.
- **OffPeak Price** – The clearing price on a path for an auction for the Off Peak period. The clearing prices are defined by the differences of the locational marginal prices at the sink and source nodes of an FTR Option when the hourly interval associated with the FTR Option is specified as “Off Peak”.
- **24Hour Price** – The clearing price on a path for an auction for the 24 Hour period. The clearing prices are defined by the differences of the locational marginal prices at the sink and source nodes of an FTR Option when the hourly interval associated with the FTR Option is specified as “24 Hour”.

Steps:

- 1) Select the Results button.
- 2) Select the Option Prices tab.
The Option Prices webpage appears.
- 3) Select desired market from Market list.
FTR Auctions that have cleared appear in Market pulldown list.
- 4) Select desired round from Round list.

Rounds 1 – 4 appear in Round list. If an Annual FTR Auction is selected by user in Step 2, an auction round must be selected. FTR option products are not available in Long Term FTR Auctions.

- 5) Select the desired Period from the Period list.
- 6) Review the following clearing price data with respect to all FTR Option paths that have cleared in selected market:
 - ◆ Period
 - ◆ Source
 - ◆ Sink
 - ◆ On-Peak Price (\$/MWh)
 - ◆ Off-Peak Price (\$/MWh)
 - ◆ 24-Hour Price (\$/MWh)
- 7) To download information;:
 - a. CSV – Click CSV button in the upper right corner
 - b. XML – Click XML button in the upper right corner

E) Task 3: View Auction Results by Portfolio

An FTR Center user can view auction results filtered by user-defined portfolios. (For more information on portfolios, see Section 5). Auction results include user-specific information, such as the participant's price and MW quote for the auction. The FTR Auctions, Long Term, Annual and Monthly, clear based on maximizing the net quote-based value of FTR bids and offers submitted to an auction.

The following auction results information is presented:

- **Source** – The pricing node specifying the source of the path.
- **Sink** – The pricing node specifying the sink of the path.
- **Class** – Designates the hourly interval associated with the FTR specified as:
 - On-Peak — for the on-peak period
 - Off-Peak — for the off-peak period
 - 24-Hr — for the 24-hour period
- **Period** – The duration of FTR.
- **Hedge** – An FTR can be specified as an Obligation or Option.

- **Trade** – Field specifying whether a quote is an offer to sell or bid for purchase. User may specify a quote as Buy, Sell or Self-Scheduled. Awarded Auction Revenue Rights (ARRs) from the Annual ARR Allocation may be self-scheduled as FTRs in the first round of the Annual FTR Auction.
- **Bid MW** – The MW amount of the FTR requested or sold, specified to the nearest 0.1 MW. FTR MW values are treated as up to quotes in the FTR auction analysis.
- **Bid Price (\$/MW-Period)** – The dollar amount of the quote, specified in \$/MW-period to the nearest \$0.01. The Bid Price may be a positive or a negative number for an FTR Obligation. The Bid Price cannot be negative for an FTR Option.
- **Cleared MW** – The MW cleared on a path for an auction.
- **Cleared Price (\$/MWh)** – The clearing price on a path for an auction. The clearing prices are defined by the differences of the locational marginal prices at the sink and source nodes of an FTR.

Steps:

- 1) Select the Results button.
- 2) Select By Participant tab.
The By Participant webpage appears.
- 3) Select portfolio name from Portfolio list.
User defined Portfolios appear in Portfolio pulldown list.
*** “All Portfolios” will show the Participant view*
- 4) Select desired market from Market list.
FTR Auctions that have cleared appear in Market pulldown list.
- 5) Select desired round from Round list.
Rounds 1 – 4 appear in Round list. If a Long Term or Annual FTR Auction is selected by user in Step 3, an auction round must be selected.
- 6) Review the following auction data with respect to the selected market and portfolio:
 - ◆ Source
 - ◆ Sink
 - ◆ Class
 - ◆ Period
 - ◆ Hedge

- ◆ Trade
- ◆ Bid MW
- ◆ Bid Price (\$/MW-Period)
- ◆ Cleared MW
- ◆ Cleared Price (\$/MWh)

- 7) To download information;
- a. CSV – Click CSV button in the upper right corner
 - b. XML – Click XML button in the upper right corner

F) Task 4: View Auction Results By Participant

An FTR Center user can view auction results which include user-specific information, such as the participant's price and MW quote for the auction. The FTR Auctions, Monthly and Annual, clear based on maximizing the net quote-based value of FTR bids and offers submitted to an auction.

The following auction results information is presented:

- **Source** – The pricing node specifying the source of the path.
- **Sink** – The pricing node specifying the sink of the path.
- **Class** — Designates the hourly interval associated with the FTR specified as:
 - On-Peak — for the on-peak period
 - Off-Peak — for the off-peak period
 - 24-Hr — for the 24-hour period
- **Period** – The duration of FTR.
- **Hedge** – An FTR can be specified as an Obligation or Option.
- **Trade** – Field specifying whether a quote is an offer to sell or bid for purchase. User may specify a quote as Buy, Sell or Self-Scheduled. Awarded Auction Revenue Rights (ARRs) from the Annual ARR Allocation may be self-scheduled as FTRs in the first round of the Annual FTR Auction.
- **Bid MW** – The MW amount of the FTR requested or sold, specified to the nearest 0.1 MW. FTR MW values are treated as up to quotes in the FTR auction analysis.
- **Bid Price** – The dollar amount of the quote, specified in \$/MW-period to the nearest \$0.01. The Bid Price may be a positive or a negative number for an FTR Obligation. The Bid Price cannot be negative for an FTR Option.

- **Cleared MW** – The MW cleared on a path for an auction.
- **Cleared Price** – The clearing price on a path for an auction. The clearing prices are defined by the differences of the locational marginal prices at the sink and source nodes of an FTR.

Steps:

- 1) Select Results button.
- 2) Select By Participant tab.
The By Participant webpage appears.
- 3) Select “All Portfolios” from the Portfolio list.
By selecting “All Portfolios” you will see the Participant view.
- 4) Select desired market from Market list.
FTR Auctions that have cleared appear in Market pulldown list.
- 5) Select desired round from Round list.
Rounds 1 – 4 appear in Round list. If a Long Term or Annual FTR Auction is selected by user in Step 2, an auction round must be selected.
- 6) Review the following auction data with respect to the selected market and portfolio:
 - ◆ Source
 - ◆ Sink
 - ◆ Class
 - ◆ Period
 - ◆ Hedge
 - ◆ Trade
 - ◆ Bid MW
 - ◆ Bid Price (\$/MW-Period)
 - ◆ Cleared MW
 - ◆ Cleared Price (\$/MWh)
- 7) To download information;
 - a. CSV – Click CSV button in the upper right corner
 - b. XML – Click XML button in the upper right corner

G) Task 5: View Binding Constraints

Binding transmission constraints are transmission constraints that limit the number of FTRs that can be awarded in an auction. There is, therefore, an opportunity cost associated with each binding constraint in terms of the value of the FTRs that could be awarded if that constraint did not exist.

There is interdependency among FTR prices. The “marginal” FTRs are the most valuable FTRs that cannot be awarded because it is not simultaneously feasible. This trade-off exists among all FTRs that have an impact on a common transmission constraint.

The price of every FTR path is determined by the value of the marginal FTR.

If there is only one binding constraint then the value of every FTR is determined by the impact of each FTR relative to the marginal FTR on the constraint.

When there is more than one constraint, the market-clearing price of each FTR is determined by the impact on each of the constraints, relative to the marginal FTRs.

The following binding constraint information is posted:

- **Period** – *The market Period for the selected market name.*
- **Class** — Designates the hourly interval associated with the FTR specified as:
 - On-Peak — for the on-peak period
 - Off-Peak — for the off-peak period
 - 24-Hr — for the 24-hour period
- **Monitored**— The facility that is violated under normal or contingency conditions.
- **Contingency** — The facility whose outage would cause a monitored facility violation.
- **Marginal Value (\$)** — The shadow price of the constraint.

Steps:

- 1) Select the Results button.
- 2) Select Constraints tab.

The Constraints webpage appears.

- 3) Select desired market from Market list.

FTR Auctions that have cleared appear in Market pulldown list.

- 4) Select desired round from Round list.

Rounds 1 – 4 appear in Round list. If a Long Term or Annual FTR Auction is selected by user in Step 2, an auction round must be selected.

- 5) Select desired Period from the Period list
- 6) Review the following constraint data with respect to the selected market:
 - ◆ Period
 - ◆ Class
 - ◆ Branch Name (Monitored)
 - ◆ Contingency Name
 - ◆ Marginal Value (\$)
- 7) To download information;
 - a. CSV – Click CSV button in the upper right corner
 - b. XML – Click XML button in the upper right corner

VII. Managing FTR Auction Quotes

A) FTR Auction Quote Overview

FTR Auctions supports the following three types of quotes:

- **Bids** — submitted by Market Participants that wish to purchase an FTR in the auction or in a secondary trade. (Remember, FTR bids are financially binding).
- **Offers** — submitted by Market Participants that wish to sell an FTR in the auction or in a secondary trade.
- **Self-Scheduled** — submitted by Market Participants that wish to convert an awarded ARR into a FTR in the Annual FTR Auction. Awarded Auction Revenue Rights (ARRs) from the Annual ARR Allocation may only be self-scheduled as FTRs in the first round of the Annual FTR Auction.

B) Valid FTR Quotes

A valid quote consists of the following information:

- **Source** – The pricing node specifying the source of the path.
- **Sink** – The pricing node specifying the sink of the path.
- **Period** – The duration of FTR.
- **Class** — Designates the hourly interval associated with the FTR specified as:
 - On-Peak — for the on-peak period
 - Off-Peak — for the off-peak period
 - 24-Hr — for the 24-hour period
- **Hedge** – An FTR can be specified as an Obligation or Option.
- **Trade** – Field specifying whether a quote is an offer to sell or bid for purchase. User may specify a quote as Buy, Sell or Self-Scheduled. Awarded Auction Revenue Rights (ARRs) from the Annual ARR Allocation may be self-scheduled as FTRs in the first round of the Annual FTR Auction.
- **Bid MW** – The MW amount of the FTR requested or sold, specified to the nearest 0.1 MW. FTR MW values are treated as up to quotes in the FTR auction analysis. The default value for this field is 0.0 MW.
- **Bid Price** – The dollar amount of the quote, specified in \$/MW-period to the nearest \$0.01. The Bid Price may be a positive or a negative number for an FTR Obligation. The Bid Price cannot be negative for an FTR Option. The default for this field is \$0.00/MW.

C) Task 1: View FTR Quotes by Portfolio

Steps:

- 1) Select Quotes button.

The Quotes webpage appears.

- 2) Select the desired portfolio from the Portfolio List.

A list of user-defined portfolios appears in Portfolio pulldown list.

***Note – Selecting “All Portfolios” will provide the By Participant view*

- 3) Select the desired market from the Market list.

A list of upcoming FTR Auctions appears in Market pulldown list.

- 4) Select desired round from Round list.

Rounds 1 – 4 appear in Round list. If an Annual FTR Auction is selected by user in Step 2, an auction round must be selected.

- 5) Review the following auction data with respect to the selected market and portfolio:

- ◆ Path – Source | Sink
- ◆ Period
- ◆ Class
- ◆ Hedge
- ◆ Trade
- ◆ Bid MW
- ◆ Bid Price (\$/MW-Period)

- 6) Select Refresh.

The most recent data from the database appears.

D) Task 2: Create FTR Quotes by Portfolio

Steps:

- 1) Select the Quotes button.

The Quotes webpage appears.

- 2) Select the desired portfolio from the Portfolio list.
A list of user-defined portfolios appears in Portfolio pulldown list.
- 3) Select the desired market from the Market list.
A list of upcoming FTR Auctions appears in Market pulldown list.
- 4) Select desired round from Round list.
Rounds 1 – 4 appear in Round list. If an Annual FTR Auction is selected by user in Step 2, an auction round must be selected.
- 5) Select desired Period from the Period list
- 6) Right click within the table area and select “Add Item”
A new row appears to add quote values.
- 7) Select the desired transmission path from the Source list.
The Source and Sink Pulldown lists present the transmission paths for the selected portfolio.
- 8) Select the period from the Period pulldown list.
- 9) Select Off-peak, On-peak, or 24-Hr from the Class pulldown list
- 10) Select Obligation or Option from the Hedge pulldown list.
- 11) Select Buy, Sell, or Self-Scheduled from the Trade pulldown list.
- 12) Enter the MW amount of the sale or buy in the Bid MW field.
- 13) Enter the buy or sell price in the Bid Price field.
- 14) Select the Save button
If submitted correctly, you will see a Successful message on screen
- 15) Select Refresh.
The most recent data from the database appears.

E) Task 3: Modify FTR Quotes by Portfolio

Steps:

- 1) Select the Quotes button.
The Quotes webpage appears.
- 2) Select the desired portfolio from the Portfolio list.
A list of user-defined portfolios appears in Portfolio pulldown list.
- 3) Select the desired market from the Market list.

A list of upcoming FTR Auctions appears in Markets pulldown list.

- 4) Select desired round from Round list.

Rounds 1 – 4 appear in Round list. If an Annual FTR Auction is selected by user in Step 2, an auction round must be selected.

- 5) A list of pending auction quotes is presented. Review the following auction data with respect to the selected market and portfolio:

- ◆ Path – Source | Sink
- ◆ Period
- ◆ Class
- ◆ Hedge
- ◆ Trade
- ◆ Bid MW
- ◆ Bid Price (\$/MW-Period)

- 6) Select Refresh.

The most recent data from the database appears.

F) Task 4: Copy FTR Quotes by Portfolio

Steps:

- 1) Select the Quotes button.

The Quotes webpage appears.

- 2) Select the desired portfolio from the Portfolio list.

A list of user-defined portfolios appears in Portfolio pulldown list.

- 3) Select the desired market from the Market list.

A list of upcoming FTR Auctions appears in Market pulldown list.

- 4) Select desired round form Round list.

Rounds 1 – 4 appear in Round list. If an Annual FTR Auction is selected by user in Step 2, an auction round must be selected.

- 5) A list of pending auction quotes is presented. Review the following auction data with respect to the selected market and portfolio:

- ◆ Path – Source | Sink
- ◆ Period
- ◆ Class
- ◆ Hedge
- ◆ Trade
- ◆ Bid MW
- ◆ Bid Price (\$/MW-Period)

- 6) Select desired quote to copy by using the checkbox or clicking the row.
- 7) Right click and Select Copy Item option from the list, then right click and select Paste Item on a new row
If copied correctly, the entire line will be duplicated.
- 8) Select the Submit button.
If submitted correctly, the entire line will change color.
- 9) Select Refresh.
The most recent data from the database appears.

G) Task 5: Delete FTR Quotes by Portfolio

Steps:

- 1) Select the Quotes button.
The Quotes webpage appears.
- 2) Select the desired portfolio from the Portfolio list.
A list of user-defined portfolios appears in Portfolio pulldown list.
- 3) Select the desired market from the Market list.
A list of upcoming FTR Auctions appears in Market pulldown list.
- 4) Select desired round from Round list.
Rounds 1 – 4 appear in Round list. If an Annual FTR Auction is selected by user in Step 2, an auction round must be selected.
- 5) Select desired Period from the Period list
A list of pending auction quotes is presented.

- 6) Review the following auction data with respect to the selected market and portfolio:
 - ◆ Source
 - ◆ Sink
 - ◆ Class
 - ◆ Period
 - ◆ Hedge
 - ◆ Trade
 - ◆ Bid MW
 - ◆ Bid Price
- 7) Select desired quotes to delete.
- 8) Right Click and Select the Remove Item button.
If deleted correctly, the entire line will disappear.
- 9) Select Save then Refresh.
The most recent data from the database appears.

H) Task 6: View FTR Quotes by Participant

Steps:

- 1) Select the Quotes button.
The Quotes webpage appears.
- 2) Select the desired market from the Market list.
A list of upcoming FTR Auctions appears in Market pulldown list.
- 3) Select desired round.
Rounds 1 – 4 appear in Round list. If an Annual FTR Auction is selected by user in Step 2, an auction round must be selected.
- 4) Select desired Period from the Period list
- 5) Review the following auction data with respect to the selected market and portfolio:
 - ◆ Source
 - ◆ Sink

- ◆ Class
- ◆ Period
- ◆ Hedge
- ◆ Trade
- ◆ Bid MW
- ◆ Bid Price

6) Select Refresh.

The most recent data from the database appears.

VIII. Participating in FTR Secondary Market

A) FTR Secondary Market Overview

The FTR Secondary Market is a bilateral trading system that facilitates the trading of existing FTRs between PJM Members, using a bulletin board system in PJM FTR Center. The FTR secondary market allows trading of existing FTRs only. FTRs cannot be reconfigured in the secondary market.

Using PJM's FTR Center, Market Participants can buy and sell FTRs directly with other Market Participants. Market Participants specify trades by transmission paths. An FTR can be split into multiple FTRs on the same path with different MW amounts and different start and end dates from the original FTR.

When a Market Participant trades an FTR, PJM transfers the ownership of the FTR to the new owner.

B) FTR Bilateral Trading

The following three steps are required to trading an FTR:

- A Market Participant posts a secondary trade.
- Another Market Participant accepts this offer.
- The Market Participant that originally posted the trade confirms the trade.

C) What Web Pages Do I Use?

The following web page is used to participate in the secondary market:

- **Trading** — Use this web page to view, post, accept, and confirm secondary FTR trades. The FTR Trading web page presents five navigation buttons, as follows:
 - **Post** —Market Participants uses this webpage to view outstanding offers and to post FTRs available for a secondary trade. This webpage presents the current offerings for the eFTR user.
 - **Available** — Market Participants use this webpage to view all FTRs that are available in the bilateral trading market, other than the offers they have posted. This webpage presents all FTR Buyers and Sellers offerings that have not been accepted. A Market Participant uses this webpage to accept a secondary trade.

- **Accepted** — The Market Participant that originally posted the FTR trade uses this webpage to confirm another Market Participants acceptance. The Market Participant that originally posted the offer can also use this webpage to decline an acceptance by another Market Participant.
- **Confirmed** — Market Participants use this webpage to view all FTRs trades submitted by participant that have been accepted and confirmed in the bilateral trading market by another participant. This webpage presents offerings that have been accepted. This webpage presents the accepted FTR trades for the FTR Center user.
- **Activity Log** — The Market Participant uses this webpage to view all bilateral trading activity. This webpage presents bilateral trades that have been posted, deleted, accepted and confirmed.

D) Task 1: View Available Bilateral Trades

A FTR Center user can view all his or her available trades to buy and sell FTRs in the FTR Secondary market. The following information is posted with respect to each available bilateral trade:

- **Posted By** — This is the Market Participant that posted the bilateral trade for sale or purchase.
- **Source** — This is the FTR's source.
- **Sink** — This is the FTR's sink.
- **Start** — The start date for the FTR, in DD/MM/YYYY format.
- **End** — The end date for the FTR, in DD/MM/YYYY format.
- **Clearing Price (\$/MWh)** — Designates the auction clearing price of the FTR
- **Class** — Designates the hourly interval associated with the FTR specified as:
 - On-Peak — for the on-peak period
 - Off-Peak — for the off-peak period
 - 24-Hr — for the 24-hour period
- **Hedge** — An FTR can be specified as an Obligation or Option.
- **Trade** — Field specifying whether a bilateral trade is an offer to sell or bid for purchase. User may specify a bilateral trade as Buy or Sell.
- **MW** — The MW amount of the FTR requested or sold, specified to the nearest 0.1 MW. FTR MW values are treated as up to quotes in the FTR auction analysis.

- ***Price (\$/MWh)*** — The dollar amount of the bilateral trade, specified in \$/MWh to the nearest \$0.01. The price may be a positive or a negative number.

Steps:

1) Select the Trading button.

2) Select the Available FTRs tab.

The Available FTRs webpage appears.

3) Select Start Day and End Day, in DD/MM/YYYY format.

4) Select Refresh button.

A list of available FTR bilateral trades appears within date range.

5) View the following information in the Available FTRs webpage:

- ◆ Posted By
- ◆ Source
- ◆ Sink
- ◆ Start
- ◆ End
- ◆ Clearing Price (\$/MWh)
- ◆ Class
- ◆ Hedge
- ◆ Trade
- ◆ MW
- ◆ Price (\$/MWh)

6) To download information;

- a. CSV – Click CSV button in the upper right corner
- b. XML – Click XML button in the upper right corner

E) Task 2: Post a Bilateral Trade

The first step in completing a bilateral trade is for a Market Participant to post the offering. The Market Participant uses the Post FTRs webpage to perform this task. After the FTR is posted in the FTR Secondary market, the FTR appears on the Available webpage.

Steps:

- 1) Select the Trading button.
- 2) Select the Post tab.
The Post FTRs web page appears
- 3) Right click within the table area and select "Add Item"
A new row appears to add trade values.
- 4) Select the desired transmission path from the Source List.
The Source and Sink Pulldown lists present the transmission paths for the selected portfolio.
- 5) Select Start, in DD/MM/YYYY format.
- 6) Select End, in DD/MM/YYYY format.
- 7) Select the Market name from the pull down list.
- 8) Select Offpeak, Onpeak, or 24Hr from the Class pulldown list
- 9) Select Obligation or Option from the Hedge pulldown list.
- 10) Select Buy or Sell from the Trade pulldown list.
- 11) Enter the MW amount of the sale or buy in the MW field.
- 12) Enter the buy or sell price in the Price field.
- 13) Select the Save button.
If submitted correctly, a popup message stating Successful will display briefly and the entire line will change color..
- 14) Select Refresh.
The most recent data from the database appears.

F) Task 3: Delete a Bilateral Trade

Steps:

- 1) Select the Trading button.
- 2) Select the Post tab.
The Post FTRs web page appears
- 3) Click to highlight the desired bilateral trade to be deleted.
- 4) Right click on the row and Select the Remove Item option.
If deleted correctly, the entire line will disappear.
- 5) Select Save and then Refresh.

The most recent data from the database appears.

G) Task 4: Copy a Bilateral Trade

Steps:

1) Select the Trading button.

2) Select the Post tab.

The Post FTRs web page appears

3) Click to highlight the desired bilateral trade to be copied.

4) Right click on a selected bilateral item and Select the Copy Item button.

5) Click to highlight the new bilateral trade.

6) Right click and select Paste Item.

If done correctly the entire row will be copied to the new record

7) Select the Save button.

If submitted correctly, the entire line will change color.

8) Select Refresh.

The most recent data from the database appears.

H) Task 5: Accepting a Bilateral Trade³

The next step in completing a bilateral trade is for a Market Participant to accept a secondary trade that was posted by another Market Participant. Market Participants use the Available webpage.

Steps:

1) Select the Trading button.

2) Select the Available tab.

The Available FTRs webpage appears.

3) Select Start day and End Day, in DD/MM/YYYY format.

4) Select Refresh button.

A list of available FTR bilateral trades appears within date range.

5) View the following information in the Available FTRs webpage:

◆ Posted By

◆ Source

- ◆ Sink
- ◆ Start
- ◆ End
- ◆ Clearing Price (\$/MWh)
- ◆ Class
- ◆ Hedge
- ◆ Trade
- ◆ MW
- ◆ Price (\$/MWh)

6) Click to highlight the bilateral trade to be accepted.

7) Select the Save button.

If accepted correctly, the entire line(s) will disappear off the list of Available FTRs. Accepted trade will now appear on the Accepted FTRs webpage.

8) Select Refresh.

The most recent data from the database appears.

9) To download information;

- a. CSV – Click CSV button in the upper right corner
- b. XML – Click XML button in the upper right corner

l) Task 6: Confirm a Bilateral Trade

The last and final step in completing a bilateral trade is for the bilateral trade initiator to confirm the secondary trade. The bilateral trade initiator uses the Accepted FTRs webpage.

Steps:

8) Select the Trading button.

9) Select the Accepted tab.

The Accepted FTRs webpage appears.

10) Select Start Day and End Day, in DD/MM/YYYY format.

11) Select Refresh button.

A list of available FTR bilateral trades appears within date range.

12) View the following information in the Available FTRs webpage:

- ◆ Posted By
- ◆ Accepted By
- ◆ Source
- ◆ Sink
- ◆ Start
- ◆ End
- ◆ Clearing Price
- ◆ Class
- ◆ Hedge
- ◆ Trade
- ◆ MW
- ◆ Price

13) Click to highlight the bilateral trade to be confirmed.

14) Select the Action dropdown and select Confirmed from the list.

If confirmed correctly, the entire line will disappear from list of Accepted FTRs. Confirmed trade will now appear on Confirmed FTR webpage.

8) Select Refresh.

The most recent data from the database appears.

9) To download information;

- a. CSV – Click CSV button in the upper right corner
- b. XML – Click XML button in the upper right corner

J) Task 7: Reject a Bilateral Trade

The bilateral trade initiator can reject an accepted offer. The bilateral trade initiator uses the Accepted FTRs webpage to perform this task.

Steps:

- 1) Select the Trading button.
- 2) Select the Accepted tab.

The Accepted FTRs webpage appears.

3) Select Start Day and End Day, in DD/MM/YYYY format.

4) Select Refresh button.

A list of available FTR bilateral trades appears within date range.

5) View the following information in the Available FTRs webpage:

- ◆ Posted By
- ◆ Accepted By
- ◆ Source
- ◆ Sink
- ◆ Start
- ◆ End
- ◆ Clearing Price
- ◆ Class
- ◆ Hedge
- ◆ Trade
- ◆ MW
- ◆ Price

6) Click to highlight the bilateral trade to be rejected.

7) Select Reject from the Action column

If rejected correctly, the entire line will disappear from list of Accepted FTRs.

8) Click Save then Select Refresh.

The most recent data from the database appears.

IX. 9 Viewing FTR Positions and Credit

A) Overview

Using PJM's FTR Center, Market Participants may view their FTR Position for any given date. The FTRs will be listed regardless of market name for a user specified date. The credit summary screen displays total and market credit values based on a user specified date. The credit detail screen will display the individual credit values based on a user specified date.

B) What Web Pages Do I Use?

The following web page is used to view the FTR Position and Credit

- **Position** — Use this web page to view all FTRs for a user specified start date or filter list based on a selected path name.
- **Credit Summary** — Use this web page to view the total credit summary and credit requirement for a user specified date. The Credit Summary screen will display the credit limit, credit requirement, credit available, and any account adjustments for the user specified date.
- **Credit Detail**— Use this web page to view the credit requirement for individual FTRs and ARRs, bilateral trades and undiversified credit requirements for a user specified date.

C) Task 1: View Position

Steps:

- 1) Select Position Tab.
- 2) Select Start Day, in MM/DD/YYYY format.
- 3) Select Path if desire to view by path name.

Otherwise, the default selection is "All Paths" which will display all positions by path.

D) Task 2: View Credit Summary

Steps:

- 1) Select Credit Button.

- 2) Select Summary Tab.
- 3) Select Date, in MM/DD/YYYY format.

Data will automatically refresh with current Credit Summary

E) Task 3: View Credit Detail

Steps:

- 1) Select Credit Button.
- 2) Select Detail Tab.
- 3) Select Date, in MM/DD/YYYY format.
- 4) Select Credit Type (“Undiversified”, “Cleared”, or “Open”)
- 5) Select Source Type (Default value is “All”)

Data in the Credit Detail table will automatically refresh once all selections are made.

X.10 Participating in the Annual ARR Allocation

A) Annual ARR Allocation Overview

Auction Revenue Rights are distributed to Network Service Customers and Firm Point-to-Point Transmission Service Customers. During the Annual ARR Allocation, Network Service and Firm Point-to-Point Transmission Service Customers submit requests for Auction Revenue Rights. All ARR requests must pass a Simultaneous Feasibility Test before being given PJM approval. PJM will allocate ARRs that pass a Simultaneous Feasibility Test to Firm Transmission Service Customers based on priority. PJM enters awarded ARRs into the PJM FTR database. Market Participants are notified of awarded ARRs prior to the Annual FTR Auction.

The Annual ARR Allocation is a two-stage allocation process designed to provide long-term certainty along with increased flexibility. PJM will conduct a Simultaneous Feasibility Test (SFT) on all ARR requests. If all requests are not feasible then ARRs are prorated and allocated in proportion to the MW level requested and in inverse proportion to the effect on the binding constraint.

B) What Web Pages Do I Use?

The following web page is used to participate in the Annual ARR Allocation. [These web pages are also used for any FTR Allocations that are conducted for new market zones.](#)

- **Requests** — Use this web page to request Auction Revenue Rights in Stage 1 and Stage 2 of the Annual ARR Allocation.
- **Results** — Use this web page to view Auction Revenue Rights that have been awarded to a participant from the Annual ARR Allocation.

C) Valid ARR Information

A valid ARR request consists of the following information

- **Market** — This is the Annual ARR Allocation for which requests are submitted.
- **MW Capability** — A pro-rata amount of MW capability from each historic resource based on the Customer's proportion of load in the zone that is assigned to each Customer.
- **NSPL** — The Network Service Peak Load value in each transmission zone. The Customers's total ARR amount allocated to a transmission zone cannot exceed the Customer's total network peak load in that zone or load aggregation zone.
- **Round Capability** — The amount of ARRs that may be requested taking into account ARRs awarded in previous rounds of Stage 1 and Stage 2.
- **Stage** — This is the stage of the Annual ARR Allocation.

- **Source** — This is the ARR's source.
- **Sink** — This is the ARR's sink.
- **Sink Zone** — This is the transmission zone or aggregate where load is served.
- **Bid MW** – For an ARR request submitted to PJM in the Annual ARR Allocation, the amount of MWs requested on a transmission path.

D) Task 1: Request ARRs in Stage 1

An FTR Center user can request Auction Revenue Rights in Stage 1 of the Annual ARR Allocation prior to the Annual FTR Auction.

Steps:

- 1) Select the ARRs button.
- 2) Select Requests tab.

The Request ARRs webpage appears.

- 3) Select the desired market from the Market list.

A list of upcoming Allocations appears in Market pulldown list.

- 4) Select desired stage from Stage list.
- 5) Select a desired zone from the Sink Zone list and Sink List.
- 6) Right Click the on the screen and select Add Item.

For existing ARR Requests click the record you want to adjust the Bid MW for and make any adjustment and click Save.

- 7) Enter the Source, Sink and MW.
- 8) Select the Save button.

If submitted correctly, the entire line will change color. And a Successful message will briefly display across the screen.

- 9) Select Refresh.

The most recent data from the database appears.

E) Task 1: Request ARRs in Stage 2

An FTR Center user can request Auction Revenue Rights in Stage 2 of the Annual ARR Allocation prior to the Annual FTR Auction.

Steps:

1) Select the ARRs button.

2) Select Requests tab.

The Request ARRs webpage appears.

3) Select the desired market from the Market list.

A list of upcoming Allocations appears in Market pulldown list.

4) Select desired stage from Stage list.

5) Select a desired zone from the Sink Zone and Sink lists.

6) Right click within the table area and Select "Add Item"

A new row appears to add request values.

7) Select the desired source & sink from the Source & Sink lists.

8) Enter the MW amount in the Bid MW field.

9) Select the Save button.

If submitted correctly, the entire line will change color. And the screen will briefly display a Successful message.

10) Select Refresh.

The most recent data from the database appears.

F) Task 3: Delete ARR Request

Once submitted, an FTR Center user can delete an ARR Request prior to the closing of a Stage 2 round. ARR requests in Stage 1 can be set to zero directly on the request screen.

Steps (Stage 2):

1) Select the ARRs button.

2) Select Requests tab.

The Request ARRs webpage appears.

3) Select the desired market from the Market list.

A list of Allocations appears in Market pulldown list.

4) Select desired stage from Stage list.

5) Select a desired zone from the Sink Zone list.

A list of pending ARR requests is presented. Review the request data with respect to the selected market.

- 6) Select and highlight the request to be deleted
- 7) Right Click the active row(s) and select the “Remove Item”
If deleted correctly, the entire line will disappear.
- 8) Select Save then Select Refresh.
The most recent data from the database appears.

G) Task 4: View ARR Results by Portfolio

An FTR Center user can view all Auction Revenue Rights by Portfolio that were awarded in the Annual ARR Allocation prior to the Annual FTR Auction.

Steps:

- 1) Select the ARRs button.
- 2) Select the Results tab.
- 3) Select desired portfolio from the Portfolio list.
- 4) Select desired market from Market list.
- 5) Select desired stage from Stage list.
- 6) View the following information:
 - ◆ ARR ID
 - ◆ Sink
 - ◆ Source
 - ◆ Bid MW
 - ◆ Cleared MW
- 7) To download information;
 - a. CSV – Click CSV button in the upper right corner
 - b. XML – Click XML button in the upper right corner

H) Task 5: View ARR Results by Participant

An eFTR user can view all Auction Revenue Rights by Participant that were awarded in the Annual ARR Allocation prior to the Annual FTR Auction.

Steps:

- 1) Select the ARRs button.
- 2) Select the Results tab.
- 3) Select “All Portfolios” from the Portfolio menu to display the Participant view
- 4) Select desired market from Market list.
- 5) Select desired stage from Stage list.
- 6) View the following information:
 - ◆ ARR ID
 - ◆ Sink
 - ◆ Source
 - ◆ Bid MW
 - ◆ Cleared MW
- 6) To download information;
 - a. CSV – Click CSV button in the upper right corner
 - b. XML – Click XML button in the upper right corner

l) Task 6: View Binding Constraints

Binding transmission constraints are transmission constraints that limit the number of ARRs that can be awarded in an allocation. An eFTR user can view all binding constraints that occur in the Annual ARR Allocation.

The following binding constraint information is posted:

- **Monitored Facility** — The facility that is violated under normal or contingency conditions.
- **Contingency** — The facility whose outage would cause a monitored facility violation.
- **Market** — This is the Annual ARR Allocation for which requests are submitted.
- **Stage** — This is the stage of the Annual ARR Allocation.

Steps:

- 1) Select the ARRs button.
- 2) Select the Results tab.

3) Select the Constraints page.

The Constraints webpage appears.

4) Select desired market from Market list.

5) Select desired stage from Stage list.

6) View the following information:

- ◆ Monitored
- ◆ Contingency

7) To download information;

- a. CSV – Click CSV button in the upper right corner
- b. XML – Click XML button in the upper right corner

XI. 11 Transferring Files

A) File Transfer Overview

Market Participants have two primary methods of interacting with PJM FTR Center. The methods are:

- **Web-based Interactions** — access is provided through a series of worldwide, web-based interactive displays, which are accessible in the Internet. Section 3 of this User's Guide describes the displays.
- **Upload/download File Procedures** — sets of data files are submitted or accessed through a data exchange process via the FTR Center webpages. Market Participants utilize these webpages to upload and download information.

The data exchange process is an XML-based programmatic interface process to the PJM eFTR system that performs the following functions:

- Query for cleared FTRs, awarded ARRs and other data.
- Submit FTR quotes to Long Term, Annual or Monthly Auctions.
- Manage Portfolios of FTR Option and FTR Obligation paths.
- Trade FTRs on the FTR Secondary Market.

Market Participants create data exchange sets that contain messages to be sent to the PJM FTR Center system that will perform the above functions when interpreted by the PJM FTR Center system. Detailed instruction on the creation of these data exchange sets can be found in the ***PJM FTR External Interface Specification***. The ***PJM External Interface Specification*** describes the addressing, exchange protocol, data, and XML formulation for all defined messages.

This section of the User's Guide describes how data exchange files are transferred to the PJM FTR Center system.

B) What Web Pages Do I Use?

The following web pages are used to transfer data files.

- **XML Upload** — Use this webpage to upload and download data files.
- **Transaction Log** — Use this webpage to view user activity, including the status of file transfers.

C) Task 1: Download File

FTR Center Users can download data files using the following webpage:

- **XML Upload** — Use this webpage to download data files.

Steps:

1) Select the Utilities button.

2) Select the XML Upload tab.

The XML Upload webpage appears.

3) To download a file Click the “Choose File” button:

Choose a file containing an XML Query Request document

4) Select the Browse button and navigate to the path of the file you wish to download.

5) Highlight the file you wish to upload.

6) Select the Upload button.

File will process your Query Request and provide an available result to download

7) Click “Download Results” to receive an XML file of what is displayed on screen.

D) Task 2: Upload File

FTR Center Users can upload data files using the following webpage:

- **XML Upload** — Use this webpage to upload data files.

1) Select the Utilities button.

2) Select the XML Upload tab.

The XML Upload webpage appears.

3) To download a file Click the “Choose File” button:

Choose a file containing an XML Submit Request document

4) Select the Browse button and navigate to the path of the file you wish to download.

5) Highlight the file you wish to upload.

6) Select the Upload button.

File will process your Submit Request and provide an available result to download

7) Click "Download Results" to receive an XML file of what is displayed on screen.