ftr ●●● FINANCIAL
TRANSMISSION
RIGHTS

FTR POLICY: USE OF THE FTR INFORMATION SYSTEM (FIS)

5 JULY 2023
v 1.5

Disclaimer

1. EMS, as FTR Manager, will only accept a person as an FTR participant, and will only offer and issue FTRs to that person, if the person meets all the following requirements:

    (a) Meets the prudential requirements in relation to FTRs set out in Part 14 of the Electricity Industry Participation Code 2010 (**Code**), as determined by the Clearing Manager under the Code.

    (b) Is a natural person resident in New Zealand, a body corporate that is incorporated in New Zealand, or a person with a branch office or other substantial physical presence in New Zealand through which it conducts its FTR participation.

    (c) Has provided EMS as FTR Manager with either:

        (i) a current and valid eligible investor certificate under clause 41 of Schedule 1 of the Financial Markets Conduct Act 2013 (FMCA) in respect of the issue or sale of FTRs; or

        (ii) a current and valid wholesale investor certificate under clause 44 of Schedule 1 of the FMCA.

    (d) Is registered by the Electricity Authority as an Industry Participant under section 9 of the Electricity Industry Act 2010 as a trader in electricity.

    (e) Agrees to the standard FTR participation agreement,

    (**Authorised persons**).

2. Information about FTRs made available by EMS through any medium (**FTR information**) is not:

    (a) advice on, or a recommendation of, FTRs or any other investment, financial product or risk management arrangement;

    (b) an offer or solicitation by EMS to issue or deal in FTRs or any other investment, financial product or risk management arrangement; or

    (c) directed to any person who is not an authorised person.

3. Clause 2(c) applies to all FTR information including FTR information that is or may be accessible to persons who are not authorised persons, for example on the Internet or by being distributed outside New Zealand by persons to whom EMS initially made the FTR information available. No recipient of FTR information is authorised to distribute it outside New Zealand.

4. Prior to any person acquiring, entering into or dealing in any investment, financial product or risk management arrangement they should obtain their own tax, legal and financial advice.

5. The FTR auction, reconfiguration auction and assignment facilities provided by EMS as FTR Manager are not licensed financial product markets under the FMCA or otherwise. However, those facilities and the FTR Manager are regulated under the Electricity Industry Act 2010, Electricity Industry (Enforcement) Regulations 2010 and Electricity Industry Participation Code 2010.

Table of Contents

Document History

Version	Date	Status	Edited By	Revision Description
1.0	30 January 2013	Released	EMS	
1.1	16 July 2014	Draft	EMS	Updates for AP14 and portal security updates
1.2	1 December 2016	Released	EMS	Updates for Portal Updates
1.3	1 June 2021	Released	EMS	Updates for new FIS
1.4	1 September 2021	Released	EMS	Update for MFA
1.5	5 July 2023	Released	EMS	Updated for broken links

Abbreviations and Acronyms

AO	Asset Owner
CSV	Comma Separated Values
DB	Database
EMS	Energy Management System
FTR	Financial Transmission Right
GUI	Graphical User Interface
MOI	Market Operator Interface
MP	Market Participant
MUI	Market User Interface
PAR	Phase Angle Regulator
PTP	Point to Point FTR
XML	Extensible Markup Language

1. Introduction

The FTR Allocation Plan provides in section 3.5 that the FTR Manager will publish and keep up to date and regularly review FTR Policies detailing how it will implement the FTR Allocation Plan, including an FTR Policy on:

- Registration

- Use of the FTR Information System

- FTR Calendar

- Determining the FTR Grid

- Application of Prudential Requirements

PROCESS FOR DEVELOPING THE POLICY

Section 1.6 of the FTR Allocation Plan provides further that the FTR Manager will develop these FTR Policies transparently with the industry through:

- Open publication of current and proposed policies and their rationale
- Considering feedback from interested parties
- Use of an FTR users' group
- Keeping the industry up to date
- Advising the Authority on developments as they arise

The FTR Manager will operate a public website that will provide access to consultations on the FTR Allocation Plan and FTR policies, including the change process for these, and submissions received.

GLOSSARY

Please refer to the FTR Glossary for an explanation of terms used in this policy[1].

THE CONTENTS OF THE CALENDAR

The FTR Information System (FIS) gives access to information on any aspect of the FTR market and provides different functionality at each access level. This policy covers the access requirements for each level and outlines the information and functionality that respective users can expect.

The diagram below illustrates the scope of this policy. It represents the site as a series of levels separated using clear user level permissions. The FIS includes the provision of publicly available information, access to the FTR register and access to the market user interface (MUI). Public information is found on the public website at www.ftr.co.nz. The URL for accessing the FTR register, and the MUI is app.ftr.co.nz. There are three levels of access:

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[1] Available at www.ftr.co.nz

- **General user (ftr.co.nz):** Public users who remain anonymous

- **Registered Public user (Site # 2):** Public users who identify themselves (i.e., sign up for a Portal account) so they can access the FTR register

- **FTR Participant (Site # 3):** Registered FTR Market Participants wishing to trade FTRs via the MUI (Market User Interface)
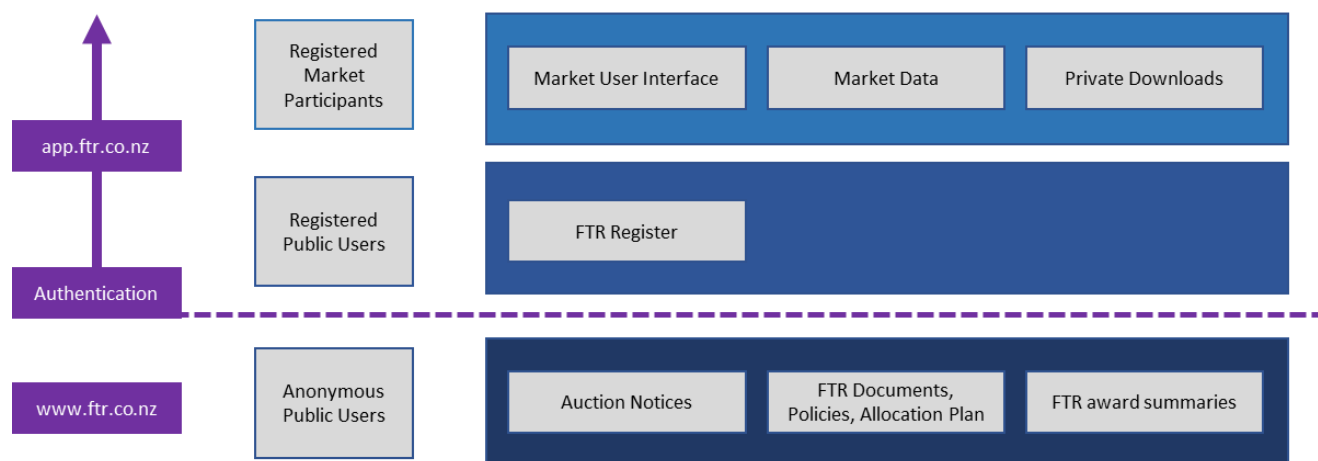
Scope of the FTR Information System (FIS)

Publicly Available Information (www.ftr.co.nz)

The general user access in the FIS provides public access to a wide variety of information on FTRs and the FTR market. Information available to all includes:

- Current Auction Notice

- Summary of some recent FTR auction clearing prices

- FTR Allocation Plan and standard FTR participation agreement

- FTR Policies:

    o Use of the FIS

    o FTR Calendar Policy - Auction schedule

    o Registration Policy - How to register to become an FTR Market Participant

    o Prudential Requirements Policy - How the FTR Manager will apply prudential information provided by the Clearing Manager to market participants who wish to bid for FTRs or assign FTRs

- Plans and progress updates on any on-going evolution of the current FTR Allocation Plan.

- Other information the FTR Manager thinks will be useful for participants

The FTR Manager updates the information content on the public pages.

Registered Public User (app.ftr.co.nz)

The public user site is restricted to the extent that users are required to register and log in to the FIS to get access to information on this level. Once a user has authenticated, they can access the **FTR Register** and see all details on awarded, assigned, and reconfigured FTRs.

A Registered Market Participant (MUI Site) can access information contained on the public user site but cannot register (self-registration) separately with the same email address on this level. All email ID's must be unique throughout the FTR Information System.

Market User Interface (app.ftr.co.nz)

The Market User Interface is accessed by registered FTR participants for the purpose of taking part in auctions, uploading buy/sell bids, retrieving auction configuration data, downloading restricted results (e.g.: binding constraints) and the management of assignments.

2. Overview of this User Manual

This FTR Market Participants User's Manual is organised into chapters that cover the following topics:

- **Introduction** gives an overview of FTRs and the EMS FTR auctions.

- **EMS FTR System Overview** gives an overview of EMS FTR system and its components

- **EMS Portal Web Site** gives an overview of how to access the FTR portal

- **Public and Private Functions of the FTR Interface** describes the information and functions available from the FTR portal interface

- **Managing FTR Portfolios** describes how to manage FTR BUY and SELL auction portfolios via the Private FTR interface

- **Managing FTR BUY/SELL Bids** describes how to manage FTR BUY and SELL bids via the Private FTR interface

- **Trading in Assignment** describes how to trade FTRs on the Assignment via the Private FTR interface

- **FTR Organisation and Users** describes the use of Site 3 for Super Users and standard Users of a Participant Organisation

The EMS Commercial Model calls for one Asset Owner to be represented by a single Market Participant. Access to the FTR System and ownership of FTRs are in the name of Asset Owners. Hence, this user manual will refer to Asset Owners and Market Participants interchangeably.

3. FTR Introduction

What is an FTR?

A **Financial Transmission Right (FTR**) is a financial instrument that entitles the holder to receive compensation for or requires the holder to pay certain congestion related transmission charges. These congestion charges arise when the transmission system is congested and differences in LMPs result from the re-dispatch of resources out of economic merit in order to relieve that congestion. An FTR is based on transmission **congestion charges** calculated in the **energy market**. A Market Participant can acquire an FTR in several ways:

- A Primary FTR Auction
- A Variation/or Reconfiguration FTR Auction
- An FTR Assignment

An FTR is structured to hedge a Market Participant for the uncertain cash flow resulting from congestion of the transmission system. FTRs do not apply to the real-time market.

On a monthly basis, the FTR Manager will conduct FTR auctions to provide Market Participants with the opportunity to purchase and sell FTRs. The FTR manager will also facilitate an Assignment Market to support trading of FTRs outside of an auction. To buy or sell FTRs in an auction or to buy or sell FTRs in the FTR Assignment, a Market Participant must meet the NZX Clearing Manager Credit criteria.

FTR System

The FTR system is used to conduct FTR auctions and support the bilateral trading of FTRs in the Assignment. A Market Participant can use the FTR system to:

- Submit FTR buy bids into a primary or variation FTR auction
- Submit SELL bids into a reconfiguration auction
- Participate in the FTR Assignment Market
- Review and download the applicable public and private data including auction results

Interfacing with the FTR System

Market Participants access the FTR system through a web-based interface termed the FTR portal.

Who is this User Manual for?

This User Manual is intended for use by FTR Market Participants to aid them in performing the following tasks:

- View and download the public existing FTRs

- View and download the public auction information such as network data, the contingency list, monitored lines/transformers; source/sink definitions and public auction results
- View and download private information such as Asset Owner specific auction results (FTR BUY and SELL bids and results)
- Manage their auction bids and FTR portfolios, including upload and download of the auction related files
- Participate in the Assignment process

4. The FTR Portal

The FTR Portal is a platform that provides a simple and a convenient way to access various web content published by the FTR Manager team. The term web content in this context primarily includes web pages, notices and other documents. The published web content might be made accessible to anyone on the Internet or to a group of users or to a particular user. The scope of published web content is determined by the FTR manager. Any user can access the published web content based on their identity within the Portal. There are two types of identity-based users:

- **Anonymous User** www.ftr.co.nz – An anonymous user will not have an identity within the FTR Portal and is not required to sign up for a portal account.
- **Portal User** www.app.ftr.co.nz – A portal user will have a unique identity within the portal and MUST sign up for a portal account.

The portal can be accessed using Edge, Firefox, Chrome and Safari browsers. The Portal provides content through different web pages, of which the following represent those available to all users.

- Overview
- FTR Documents
- Disclaimer

The Web Pages

The Home page has a link to Login in the top right-hand corner. The Login window provides the following features:
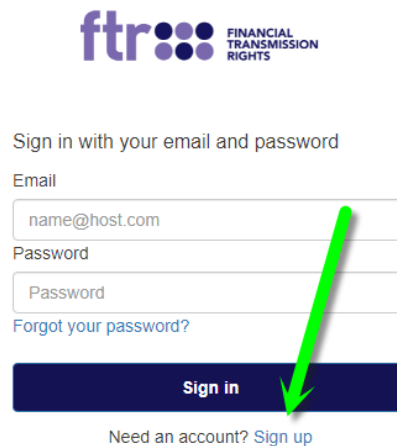
- **Sign Up**: An anonymous user can create a portal account to access the FTR Register
- **Sign in Button**: An existing Portal user can provide the login credentials and login to the Portal
- **Forgot Password link**: An existing Portal user can reset their password

Create Account

Figure 1 Create Account on the FTR Portal

Select Sign up to create an account.

Any anonymous user accessing the portal can create a portal user account through the **Sign-up** link in the Sign-In window as shown above.

Figure 2 Creation of the Portal User Account

The email address and valid mobile number (used for MFA) is required to create the portal user account as shown in Figure 2. The email address must be unique within the FTR portal. You will be prompted for a verification code as shown in Figure 3 that can be found in the confirmation email sent to the user as shown in Figure 4.

Figure 3 Email verification screen

Figure 4 Sample verification email sent to the new user

Once the user enters the verification code provided in the email as shown in Figure 5 the user is then directed to the FTR Register as shown in Figure 6.
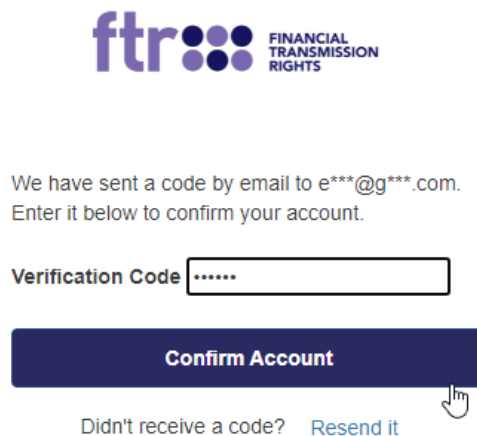
Figure 5 Entering the Verification Code

Figure 6 The FTR Register

The newly created user can subsequently sign in to access the FTR Register at any time by selecting the Log in button at the top right-hand corner of the screen as shown in Figure 7 and providing their account details or browsing directly to www.app.ftr.co.nz.
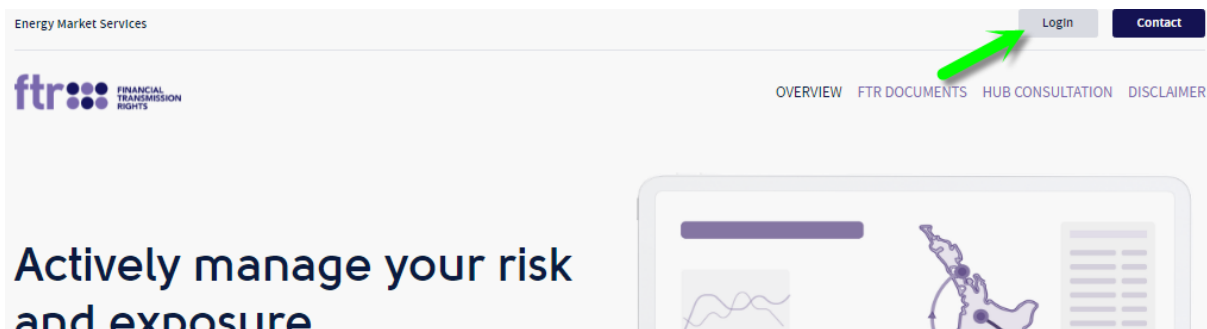
Figure 7 Sign In

Forgot Password

If a user forgets their sign-in password, the password can be reset through the link shown in Figure 8.
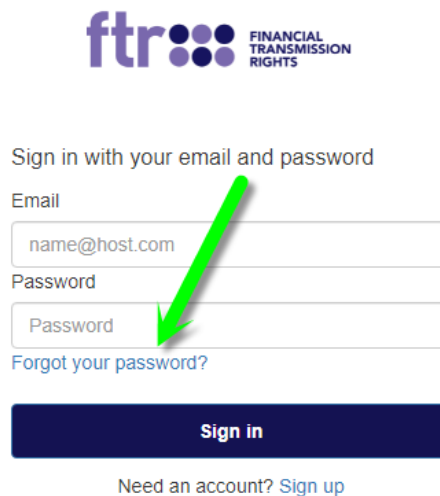
Figure 8 Sign-In page and the Forgot Password Link

As shown in (Figure 9), the user is shown a screen to enter their unique code sent in an email (Figure 10) and to enter a new password

Figure 9 Captcha challenge during a reset of the password

Figure 10 Email with reset password code

When the user provides the verification code and a valid new password that satisfies the EMS Portal Password Policy requirements (as shown in Figure 11) and this action completes the process of resetting a password.

Figure 11 Entering Verification Code

FTR Docs

The FTR Docs page is the online repository of all the FTR Market related documents. The FTR Manager will publish the necessary documents as per business policy. Users can only browse and download the documents.

FTR Docs page
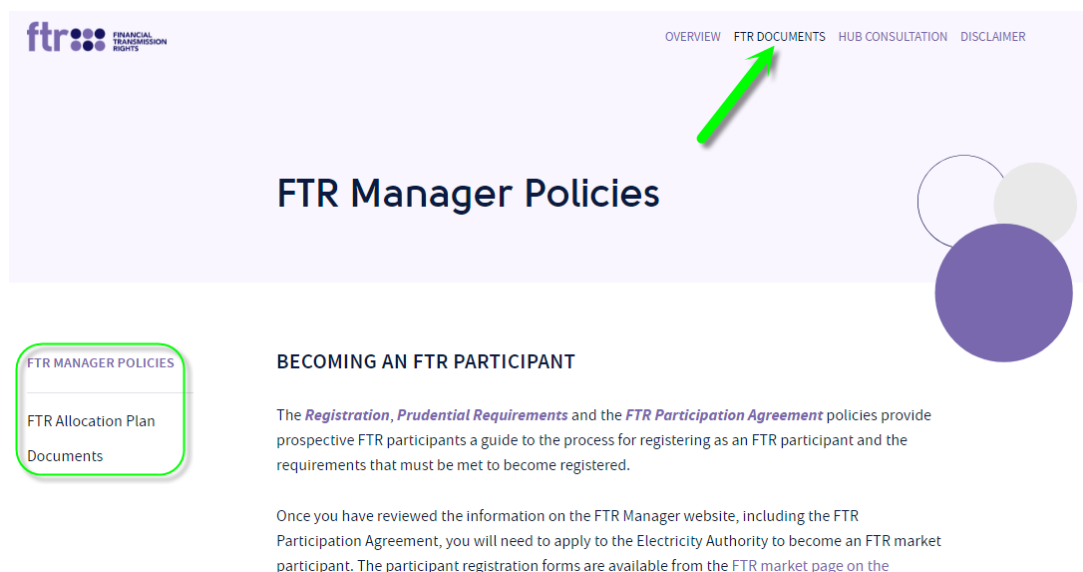
Figure 12 FTR Documents page

The Register

The Register is only accessible to registered portal users. A portal user must successfully login to the portal to view the FTR Register. The register provides a grid view of the published FTR data. A portal user can filter the results by selecting the filter icon and download the market FTR data.

Register Page

Figure 13 FTR Register

Figure 14 Filter Options on the FTR Register page

The whole register or the filtered data can be downloaded as an Excel spreadsheet or csv by using the download and download with filter buttons as shown in Figure 15.
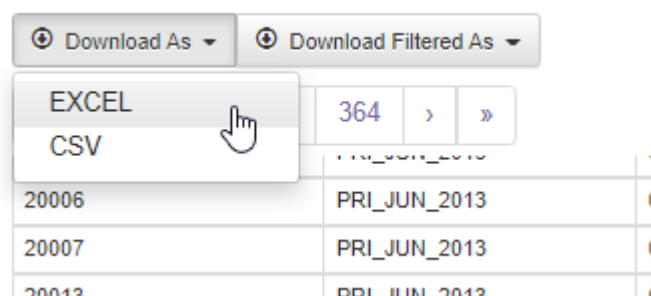
Figure 15 Download options

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	FTR_ID	AuctionName	StartDate	EndDate	CurrentOv	PreviousC	FirstOwne	HedgeTyp	Source	Sink	MW	Price	AcquisitionCost	OriginalAcquisitionCost	DateAcquired	Status	AllocationPlan
2	4094403	VAR_SEP_2019	1/12/2019	31/12/2019	OMFM		OMFM	OPT	HAY	ISL	0.1	8.35	621.24	621.24	19/09/2019	AWARDED	2018
3	4094415	VAR_SEP_2019	1/12/2019	31/12/2019	OMFM		OMFM	OPT	OTA	KIK	0.1	13.83	1028.95	1028.95	19/09/2019	AWARDED	2018
4	4094250	VAR_SEP_2019	1/12/2019	31/12/2019	HETL		HETL	OPT	HAY	BEN	11.2	0.84	6999.55	6999.55	19/09/2019	AWARDED	2018
5	4094430	VAR_SEP_2019	1/12/2019	31/12/2019	OMFM		OMFM	OPT	KIK	RDF	0.1	11.94	888.34	888.34	19/09/2019	AWARDED	2018
6	4094387	VAR_SEP_2019	1/12/2019	31/12/2019	OMFM		OMFM	OPT	HAY	BEN	0.1	0.84	62.5	62.5	19/09/2019	AWARDED	2018
7	4094442	VAR_SEP_2019	1/12/2019	31/12/2019	OMFM		OMFM	OPT	ISL	WKM	0.1	10.93	813.19	813.19	19/09/2019	AWARDED	2018
8	4094254	VAR_SEP_2019	1/12/2019	31/12/2019	HETL		HETL	OPT	RDF	WKM	6.6	0.3	1473.12	1473.12	19/09/2019	AWARDED	2018
9	4094211	VAR_SEP_2019	1/12/2019	31/12/2019	SWET		SWET	OPT	OTA	WKM	5.7	0	0	0	19/09/2019	AWARDED	2018
10	4094324	VAR_SEP_2019	1/12/2019	31/12/2019	MRPL		MRPL	OPT	WKM	HAY	1	1.39	1034.16	1034.16	19/09/2019	AWARDED	2018
11	4094429	VAR_SEP_2019	1/12/2019	31/12/2019	OMFM		OMFM	OPT	OTA	RDF	0.1	0.61	45.38	45.38	19/09/2019	AWARDED	2018
12	4094309	VAR_SEP_2019	1/12/2019	31/12/2019	MRPL		MRPL	OPT	OTA	WKM	1	0	0	0	19/09/2019	AWARDED	2018
13	4094433	VAR_SEP_2019	1/12/2019	31/12/2019	OMFM		OMFM	OPT	HAY	RDF	0.1	4.25	316.2	316.2	19/09/2019	AWARDED	2018
14	4094426	VAR_SEP_2019	1/12/2019	31/12/2019	OMFM		OMFM	OPT	WKM	KIK	0.1	14.02	1043.09	1043.09	19/09/2019	AWARDED	2018
15	4094378	VAR_SEP_2019	1/12/2019	31/12/2019	OMFM		OMFM	OPT	RDF	OTA	0.1	5.86	435.98	435.98	19/09/2019	AWARDED	2018
16	4094428	VAR_SEP_2019	1/12/2019	31/12/2019	OMFM		OMFM	OPT	HAY	OTA	0.1	9.01	670.34	670.34	19/09/2019	AWARDED	2018
17	4094413	VAR_SEP_2019	1/12/2019	31/12/2019	OMFM		OMFM	OPT	ISL	KIK	0.1	4.29	319.18	319.18	19/09/2019	AWARDED	2018
18	4094332	VAR_SEP_2019	1/12/2019	31/12/2019	GENE		GENE	OPT	WKM	RDF	40.8	0.61	18516.67	18516.67	19/09/2019	AWARDED	2018
19	4094405	VAR_SEP_2019	1/12/2019	31/12/2019	OMFM		OMFM	OPT	HAY	INV	0.1	10.24	761.86	761.86	19/09/2019	AWARDED	2018
20	3923899	VAR_JUN_2019	1/09/2019	30/09/2019	MERI		MERI	OPT	RDF	HAY	5.6	1.13	4549.83	4549.83	20/06/2019	AWARDED	2018
21	3924053	VAR_JUN_2019	1/09/2019	30/09/2019	GENE		GENE	OPT	HAY	RDF	20.8	2.19	32751.89	32751.89	20/06/2019	AWARDED	2018
22	3923949	VAR_JUN_2019	1/09/2019	30/09/2019	OMFM		OMFM	OPT	WKM	BEN	2.4	1.29	2226.02	2226.02	20/06/2019	AWARDED	2018
23	3923979	VAR_JUN_2019	1/09/2019	30/09/2019	CTCT		CTCT	OPT	WKM	RDF	6.2	0.4	1783.12	1783.12	20/06/2019	AWARDED	2018
24	3923415	VAR_JUN_2019	1/09/2019	30/09/2019	SWET		SWET	OPT	OTA	BEN	0.6	0.84	362.38	362.38	20/06/2019	AWARDED	2018
25	3923947	VAR_JUN_2019	1/09/2019	30/09/2019	OMFM		OMFM	OPT	RDF	BEN	2.1	1.47	2219.55	2219.55	20/06/2019	AWARDED	2018
26	3923466	VAR_JUN_2019	1/09/2019	30/09/2019	SWET		SWET	OPT	WKM	HAY	0.7	0.95	478.14	478.14	20/06/2019	AWARDED	2018
27	3923426	VAR_JUN_2019	1/09/2019	30/09/2019	SWET		SWET	OPT	OTA	HAY	0.6	0.5	215.7	215.7	20/06/2019	AWARDED	2018
28	3923889	VAR_JUN_2019	1/09/2019	30/09/2019	MERI		MERI	OPT	HAY	WKM	11.7	1.91	16067.49	16067.49	20/06/2019	AWARDED	2018
29	3923508	VAR_JUN_2019	1/09/2019	30/09/2019	TRUS		TRUS	OPT	BEN	WKM	1	6.13	4407.47	4407.47	20/06/2019	AWARDED	2018

Figure 16 Downloaded FTR Register

5. EMS FTR System Overview

Overview

The FTR System allows Market Participants to participate in FTR auctions and in the FTR Assignment process. Market Participants can use the web based FTR system to purchase or bilaterally trade FTRs. Primary Auctions, which can include previously unlisted FTR Periods, and Variation Auctions, for FTR Periods <12 months before settlement, will be performed by the FTR Manager. Definitions of FTR periods associated with each auction can be found in the FTR Allocation Plan, released by the FTR Manager.

Point to Point (PTP) FTRs acquired in an auction will be available between any single node (bus) or combination of nodes (buses) designated by EMS (subject to a simultaneous feasibility test). The list of nodes and their aggregates include Generation Nodes, Load Nodes, Hubs, Load Zones, Interfaces, Receipt Zones, Pseudo-generators, Pseudo-loads Nodes.

All acquired FTRs will have a duration of one calendar month.

FTR System Components

The FTR system has the following key components:

- **FTR Interface.** The FTR interface is a web-based market interface subsystem that allows:
    - Market Participants to view public data, public auction results.
    - Market Participants to view and download private data, private auction results.
    - Market Participants to manage and submit their FTR bids to an upcoming auction
    - Market Participants to participate in the Assignment to bilaterally trade their FTRs (i.e., the FTR Assignment process)
    - Market Participants to manage users within their organisation
- **Market Operator Interface (MOI).** The MOI subsystem is a web-based system through which EMS personnel operate and manage the FTR System. This interface is not available to Market Participants.
- **FTR Database.** The Database subsystem manages all access to both public and private data in the FTR System. All bid data submitted by Market Participants are stored in this database.

FTR Auction Timeline

EMS will initiate, direct and oversee the FTR auctions.

For each auction, the timeline incorporates the following steps:

- PSS/E files and other auxiliary files are posted when the market operator initiates the auction process.
- A bidding period is opened during which Market Participants submit bids for the auction.

- The EMS market operator conducts the auction (primary or variation).
- Auction results are published/posted at the conclusion of the auction.

6. FTR System Web Site

Market Participants interface with EMS FTR system via the FTR portal at www.app.ftr.co.nz. The portal is best accessed via the Internet, using Google Chrome, but is also supported by the following browses:

- Microsoft Edge
- Mozilla Firefox
- Safari

Access to the FTR System

Registered Market Participants authenticate to www.app.ftr.co.nz. From here the user can access the FTR application.

For the FTR application, a Market Participant can be set up with one of the following roles:

- The **submit role (READ_WRITE)** allows full privilege to the Market Participants to submit/retract FTR bids and participate in the Assignment editor. The **submit role (READ_WRITE)** can access all the public and private web pages.

- The **view role (READ_ONLY)** provides view-only access to the user's private and public pages and to view bids and assignments. This account does not permit submission/retraction of portfolios into the FTR auctions or to trade FTRs in the Assignment editor.

- The Super User (**SUPER_USER**) allows a user, who can be READ_ONLY or READ_WRITE to create, delete and change user permissions inside their organization.

FTR System Interfaces

The FTR interface has many features which are all accessible through the four dropdown menus shown in Figure 17.

The four dropdown menu items are as follows:

- **FTR Bids/Offers** – link to FTR Bid Portfolio List page [default page]

- **Assignment Market**– link to FTR Assignment pages

- **Register** – link to FTR Register. This is also accessible to registered public users.

- **Downloads** – link to *Public* and *Private* Download page

- **User Management** – link to the Organisation user management, available only to the SUPER_USER

Figure 17 Functions of the FTR MUI

There are two types of information available to Market Participants: **Public information**, which is general information available to *any FTR Market Participant*, and **Private Information**, which is confidential information pertinent to *only that Market Participant*.

- The **public interface** allows Market Participants to download and view:
    - General data, which consists of the list of FTRs for all Market Participants.
    - Network data, which consists of the contingency list, monitored lines/transformers, network model in PSS/E format, nomograms and scheduled outages. This data is available for each auction period.
    - Market data, which consists of source/sink definitions, capacity and base loading FTRs. This data is available for each auction period.
    - Market Results data:
        - Auction data, which includes the auction binding constraints.

- The **private interface** allows Market Participants to access:
    - FTR Bid page that permits Market Participants to submit portfolios of buy or sell bids to primary or variation auctions.
    - Prepare and manage portfolios of buy and sell bids.
    - View portfolios that have been submitted to auctions.
    - Upload and download bid portfolios.
        - Assignment - View, post and accept bilateral FTR trades.
    - Private downloads
        - Private Auction data, which consists of the results of the FTR auction, including the bid curve associated with each of the FTR buy bids in the portfolios submitted to an auction.

FTR System Web Pages

MUI
Public Downloads

Market User Interface (MUI)

Public Downloads — Private Downloads — FTR Bids — Assignment Market

Public Downloads
- General Tab
  - Existing FTRs
- Network Tab
  - Contingencies
  - Monitored Lines and Trnsformers
  - Network Model
  - Nomograms
  - Scheduled Outages
  - Asset Mappings
- Market Tab
  - Baseloading FTRs
  - Capacity
  - Sources and Sinks
- Results
  - Binding Constraints

Private Downloads
- Results Tab
  - Bids and FTRs

FTR Bids
- Auction Portfolio List
  - View/Add/Delete Bid Portfolio
  - Submit/Retract portfolio from Auction
  - Portfolio Editor
    - View and Edit Bids in Portfolio
    - Upload / Download Bid Portfolios

Assignment Market
- View/Post/Download/ Upload Buy/Sell Offers
- View/Post/Download/ Upload response to Buy/ Sell Offers

Figure 18   FTR System Web Pages for the Public and Private FTR Interfaces

Project: Use of FIS Policy	Drawing Title: MUI Downloads	
Date: 1 June 2021	Dwg No. 20140708-001	

7. Managing FTR Auction Portfolios

Overview of an FTR Auction Portfolio

One of the important functions of the FTR interface is to manage FTR auction portfolios. An auction portfolio is an efficient and effective package to manage PTP FTR bids. Each valid FTR portfolio consists of a set of PTP FTR bids.

Valid FTR Portfolio

A valid FTR portfolio should have a name and should have the following data fields:

- **Bid ID**: system generated ID of the FTR Bid.
- **FTR ID**: ID of the FTR being sold (used only when selling FTRs in Reconfiguration auctions)
- **Bid Description**: an optional field for the FTR participant to add description to each bid.
- **Asset Owner**: The 4-letter code of the Asset Owner who wants to buy or sell a PTP FTR
- **Source**: The name of the source for a PTP FTR buy/sell bid
- **Sink**: The name of the sink for a PTP FTR buy bid/sell
- **HEDGE Type**: OBL for Obligation hedge type or OPT for Option hedge type
- **Class**: time of use indicator – 24-HOURS
- **Type**: BUY or SELL
- **Period**: Name of the FTR period (the FTR period in the auction e.g.: 202206).
- **Bid Curve (MW, $/MWh):** must contain a minimum of two bid curve break points (a maximum of 11 break points, giving 10 segments).
  - the first quantity **must** be zero
  - each quantity must be positive (>0)
  - for buy bids, each price point must be ≤ the preceding price point (monotonically decreasing)
  - for sell bids, each price point must be ≥ the preceding price point (monotonically increasing)

A sloped bid can include positive and/or negative price points, if they obey the above relationships. A sample buy bid curve is shown in Figure 19.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF
	Bid ID	FTR ID	Bid Description	Asset Owner	Source	Sink	Hedge Type	Class	Type	Period	Bid MW 1	Bid Price 1	Bid MW 2	Bid Price 2	Bid MW 3	Bid Price 3	Bid MW 4	Bid Price 4	Bid MW 5	Bid Price 5	Bid MW 6	Bid Price 6	Bid MW 7	Bid Price 7	Bid MW 8	Bid Price 8	Bid MW 9	Bid Price 9	Bid MW 10	Bid Price 10	Bid MW 11	Bid Price 11
2				ABCD	OTA	ISL	OBL	24-HOURS	BUY	202112	0	15	5	14	10	13	18	13	25	12	25	6	30	6	32	2	40	-2	45	-5	48	-8
3				ABCD	OTA	BEN	OPT	24-HOURS	SELL	202201	0	4	2	6	3	10	3	14	5	16	6	16										

Figure 19 Sample Buy / Sell Bid Curve

This creates a buy bid curve as illustrated in Figure 20:

MW	Price
0	15
5	14
10	13
18	13
25	12
25	6
30	6
32	2
40	-2
45	-5
48	-8
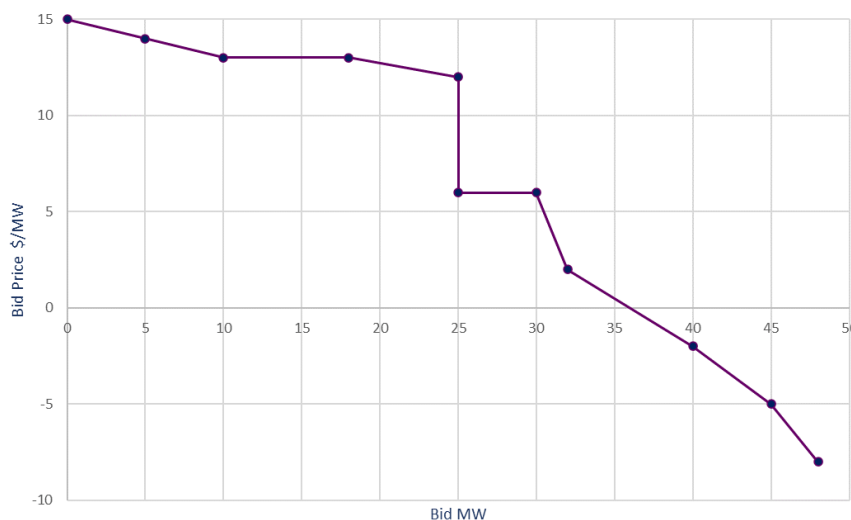
Figure 20 Diagram of proposed sloped buy-bid structure (example)

and a sell bid curve as illustrated in Figure 21:

MW	Price
0	4
2	6
3	10
3	14
5	16
6	16
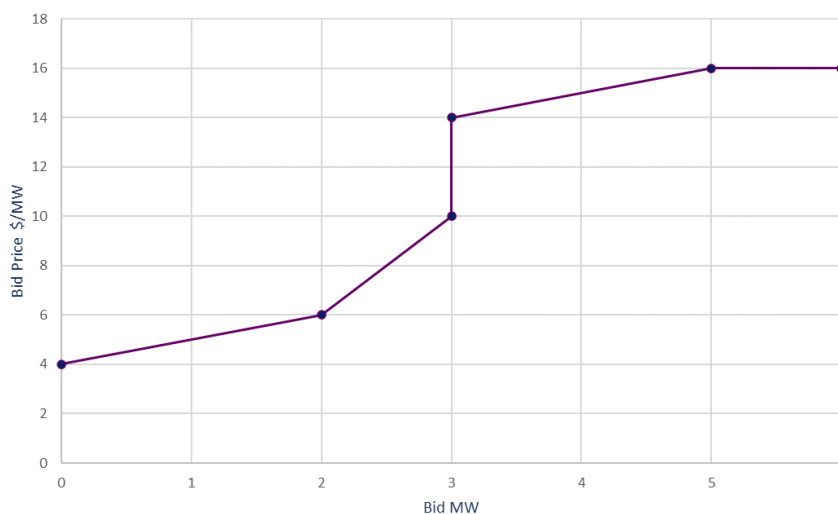
Figure 21 Diagram of proposed sloped sell-bid structure (example)

Managing Auction Portfolios on the Private FTR Interface

The FTR Bids tab is used to view and submit bids for and FTR auction as shown in Figure 22. The auction market must be selected. This defaults to current auctions. Selecting '**Go'** to view and manage an existing auction portfolio/s and/or create a new auction portfolio. The dates on the right-hand side of Figure 22 reflect the effective dates of the FTR period and the bidding window of the selected auction market and period.
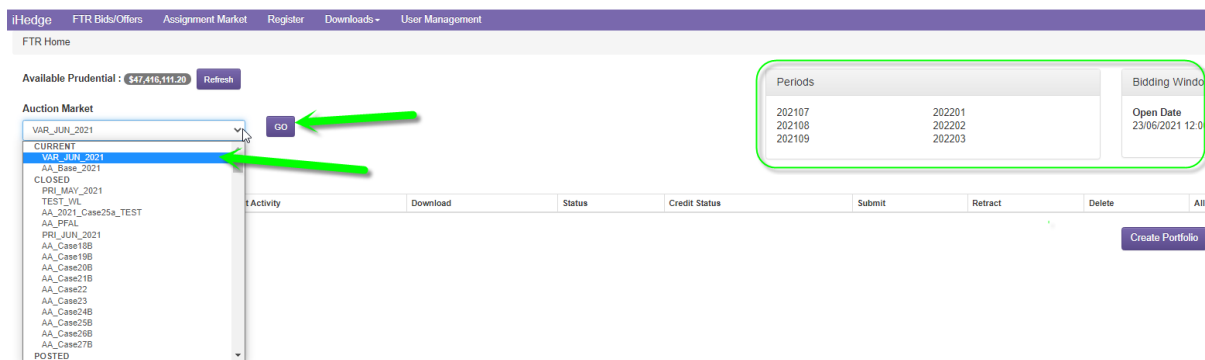
Figure 22 Auction market and period selection for managing Auction Portfolios

Selecting **Go** displays a list of existing auction portfolios (for the selected auction). The '**Create Portfolio'** button to create new portfolios is only available to FTR participants with **READ_WRITE** role.

The FTR Bids pages for **READ_WRITE** and **READ_ONLY** roles are shown in Figure 23 and Figure 24, respectively.
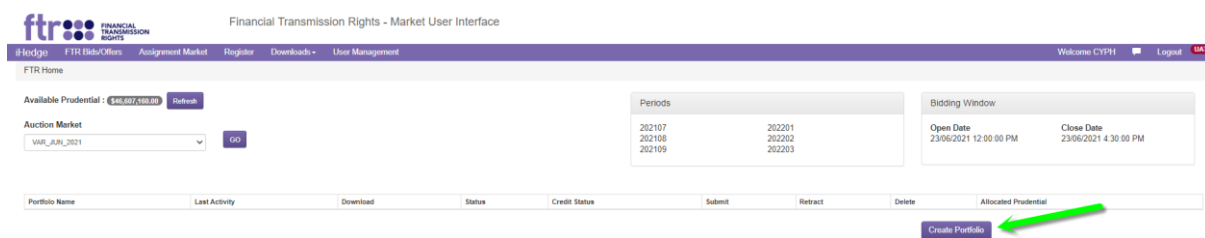
Figure 23 Portfolio List – Submit Role (READ_WRITE)
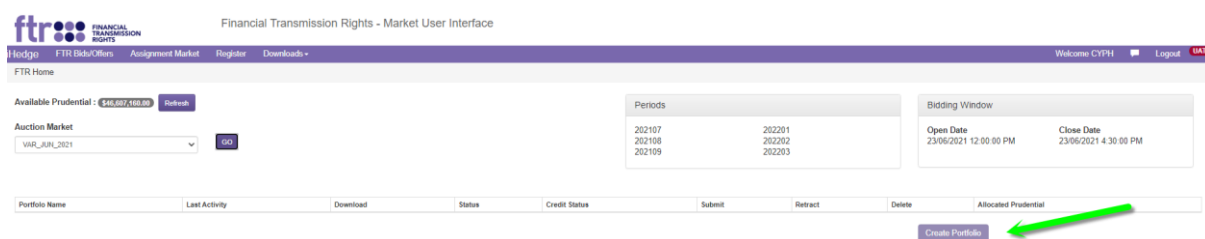
Figure 24 Portfolio List – View Role (READ_ONLY)

Viewing Existing Portfolios

- The default screen on login is the **FTR Bids/Offers** tab.

- Select the desired Auction Market using the drop-down menus and then click **Go**.

- Click the portfolio's name, which is in the column "**Portfolio Name**". The **Portfolio Editor** is covered in detail in the following chapter.

Creating Auction Portfolios

Click the command button "**Create Portfolio**" to create an empty portfolio and upload a CSV format portfolio file from the local computer. The user is presented with a pop-up window as shown in Figure 25.

Figure 25 Create Blank New Portfolio

- To create an *empty* portfolio, enter a valid Portfolio Name and click "**Create Portfolio**".

- To upload a portfolio, browse for the file and then click "**Create Portfolio**". The portfolio name is automatically set to the csv filename. A successful portfolio upload will display a summary on the number of BUY and SELL offers in the uploaded portfolio see Figure 26. The details of the portfolio can be viewed by selecting **"view in Editor"** otherwise the window can be closed.

Figure 26 Create portfolio from upload

Figure 27 Bid Portfolio csv

- The Portfolio Name is a required field when uploading a Portfolio. This is prepopulated when using a csv file to create portfolio. Without a name, the portfolio will be rejected. The portfolio name must be unique within the same auction.

- The FTR Auction name is greyed out and cannot be edited.

- It is optional to create a portfolio with bids in the upload bid file or to leave it blank.

- When the upload bid file is specified and '**Create Portfolio'** button is clicked, the data in the upload file will be validated. If there is at least one validation violation, the *entire* portfolio will be rejected. A pop-up window will prompt the FTR participant the number of records that pass the validation and the total number of records in the upload files. '**Errors'** link will be available for the FTR participant to download details of all errors. A sample of the pop-up window is shown in Figure 28 and the error report in Figure 29.

Figure 28 Error message for failed Portfolio Creation

```
Failed to create an Auction Portfolio for the market 'VAR_JUN_2021


Upload Errors:
Row[7] - Sink "ABC" is invalid for the specified market, period and TOU.
```

Figure 29 Portfolio error report

- When all bids in the upload file pass the validations, a portfolio containing bids in the upload file will be created and saved. A confirmation window, as shown in Figure 30, displays the number of valid bids. When the window is closed, the uploaded portfolio will be displayed in the Bid/Offers Screen.

- When a portfolio is created without an upload file, the confirmation window, as shown in Figure 30Figure 25, displays 0 new FTR records in the summary. When the window is closed, the uploaded portfolio will be displayed in the Bid/Offers Screen.

Figure 30 Confirmation message for successful creation of a blank portfolio

Downloading Portfolios

- Select the CSV link in the "**Download**" Column in the page Bid/Offers Screen as shown in Figure 31

- The portfolio in the CSV format with the same name as the portfolio will be downloaded.

Figure 31 Downloading a portfolio

Deleting Portfolios

- Click the command button "**DELETE**" to delete the portfolio that is no longer required. The delete button is only available for portfolios that have not been submitted. To delete a portfolio that has been submitted, it must first be retracted using the **retract** button. After the bid window has closed, a portfolio that has been submitted cannot be edited. See buttons shown in Figure 32

Figure 32 Delete and Retract Buttons

Submitting Portfolios

This function is only available to users with **READ_WRITE** access. One or more portfolios can be submitted to an FTR auction during the bidding window as shown in Figure 33. After the bidding window has closed, portfolios cannot be submitted or retracted. FTR participants may submit more than one portfolio to an auction. Presently, the FTR manager limits the total number of a Market participant bids to 12,000 bids in each auction.

Figure 33   Portfolio List – Submit Button, Retract Button and Msg link

- To submit a portfolio, click the "**Submit**" button as shown in Figure 33.

- If the portfolio passes all data validations including prudential validation, the selected portfolio will be submitted into the FTR auction as shown for a portfolio in Figure 33, and the "**Retract**" link will become active for that portfolio. The portfolio status will become 'Approved'. The allocated prudential will be subtracted from the available prudential at the top of the screen.

Retract Portfolios from Auction

This function is also only available to users with **READ_WRITE** access. The portfolios can be retracted from the auction only when the bid window is open. After this bid window has closed, portfolios cannot be retracted.

- For the selected portfolio click the "**Retract**" button in the table column "**Retract**" shown in Figure 33.

- The retracted portfolio will be removed from the list of submitted FTR portfolios and the "**Submit**" link will become active again. Please note that this action does not remove the portfolio from the **Portfolio List** but removes the portfolio from being submitted to the auction.

Auction Portfolio Statuses

The auction portfolio page lists the portfolios along with their status. The status is displayed as a green tick or red cross. Details on any error states can be downloaded in the error message.
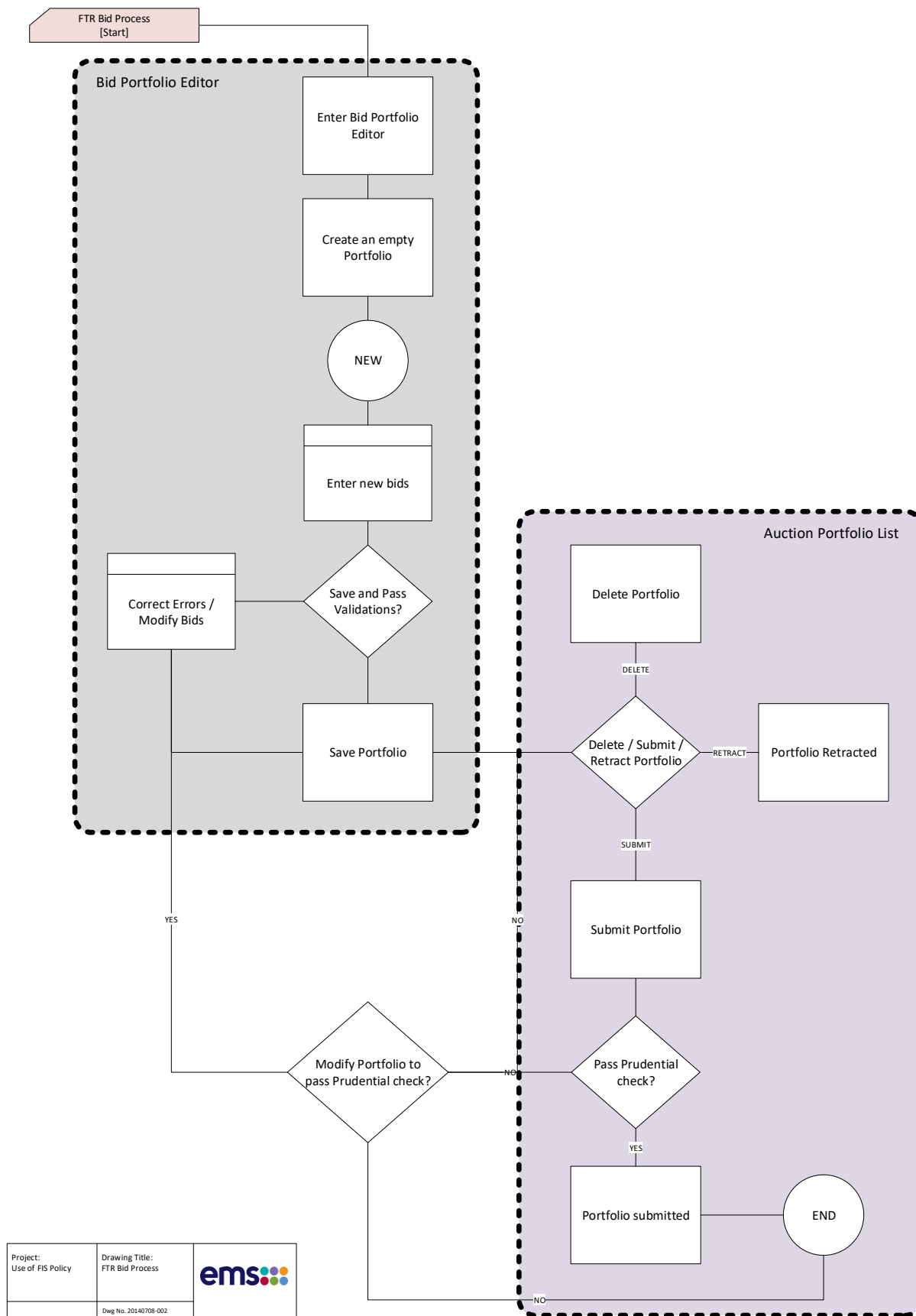
Figure 34 Managing Portfolios

8. Managing FTR Bids

Overview of FTR Bids

The FTR auction supports the following type of FTR bid/offers:

- **Point-to-Point FTR (PTP FTR)** – submitted by Asset Owners who wish to purchase a PTP FTR in the auction from a valid source to a valid sink.

A user can submit up to 12,000 buy and sell bids.

Valid FTR Bids

A valid FTR bid consists of the following information:

- **ID –** A field containing the ID for each of the Bids added and saved. This textbox cannot be edited.
- **FTR ID** – ID number of the FTR for sell offers (Applicable to Sell Offer tab only).
- **Asset Owner** – The name of the Asset Owner who wishes to sell or buy the FTR.
- **Source** – The name of the source for a PTP FTR
- **Sink** – The name of the sink for a PTP FTR
- **Bid Curve** – The bid curve of the FTR which allows up to 11 break points (See Figure 19 above)
- **Class** – 24-HOURS time of use
- **Hedge Type** – OBL (Obligation) or OPT (Option)
- **Bid Type** – BUY or SELL

Portfolio Editor

The Auction **Portfolio Editor** is the location where Market Participants manage their auction portfolios, as shown in Figure 35.
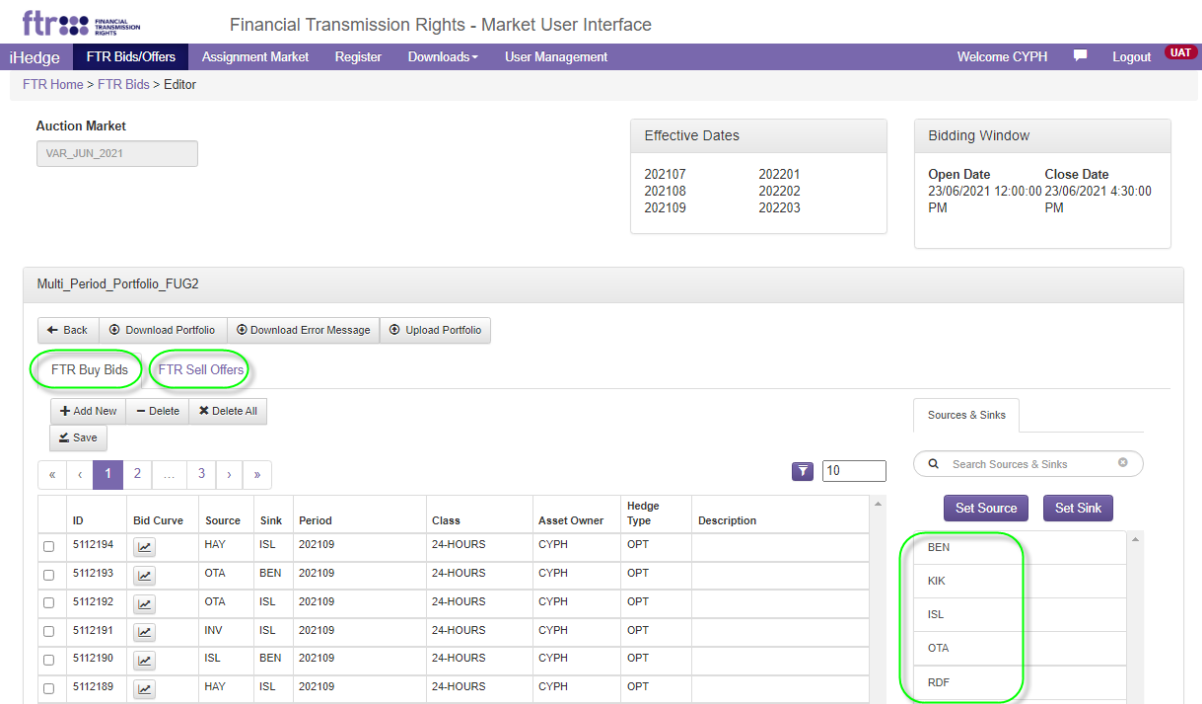
Figure 35   Portfolio Editor

The **Portfolio Editor** page contains three display panels: the upper panel, the left central panel and the right central panel. Each of the three panels contain toolbox provided to edit a portfolio. All the panels and their associated toolboxes are described as below.

- *Upper Panel* – describes the global properties of the portfolio and contains the following toolboxes:

    o **Portfolio Name** – A text box to which to view or input the name of the portfolio currently being managed.

    o **Description (optional)** – A text box to view or input the description for the current portfolio

    o **Select Another Portfolio** – A list box with all other existing portfolios listed for selection. When one of the portfolios is selected from this list, the portfolio editor will redirect to the selected portfolio.

- *Left Central Panel* – where the Market participant can navigate to the **FTR Buy Bids** or **FTR Sell Offers**, a tabular form to edit required data fields for buy or sell bids:

    FTR Buy Bids

    o **ID** – This is a numeric ID generated by the system when the bid is saved. This textbox cannot be edited.

    o **Bid Curve** – A pop up form to input the break points of the bid curve for the current FTR being edited. Clicking the icon in one of the Bid Curve cells, pops up a bid curve dialog as shown below in **Figure 36**.
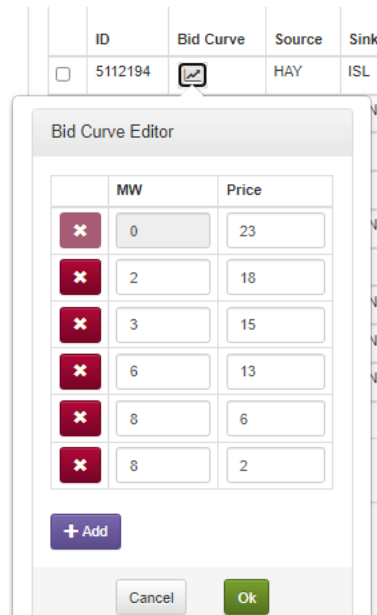
Figure 36   Bid Curve Pop-up Window

- The left column and the right column of the bid curve table are the MW amount and the price in $/MWh of the break point respectively. Note that the first breakpoint for a BUY bid is always at 0 MW. Under the bid curve table there are four command buttons

  - **Add:** This adds a new bid curve point. Up to 11 break points can be added for sloped bids

  - **Delete:** This removes a selected row / bid point

  - **SAVE**: Save all inputted bid curve break points. This button is available only when the portfolio is not in 'Approved' status (submitted to an auction) or the associated auction has not been posted.

  - **CANCEL**: Cancel all actions since the last saving operation.

- **Source** – A text box to denote the name of the source for a PTP FTR. The data can be entered by selecting the record, then selecting the desired source name under the folder **Sources & Sinks** in the right central panel and clicking the "**Set Source**" button.

- **Sink** – A text box to denote the name of the sink for a PTP FTR. The data can be entered by selecting the record, then selecting the desired sink name under the folder **Sources & Sinks** in the right central panel and clicking the "**Set Sink**" button.

- **Class** – A text box to denote the name of the time-of-use. "24-HOURS" is automatically filled in this column

- **Asset Owner** – A text box to denote the name of the owner for a particular FTR. This data is automatically populated with the name of the **Asset Owner** for whom the bid portfolio is being created.

- **Bid Description** – An optional short description that a market participant may wish to associate with the bid. It can be used to store tags or IDs that market participants use within their own systems.

- **Hedge Type** – A drop-down list for a selection of OBL (Obligation) or OPT (Option) hedge type.

FTR Sell Offers

- o **ID** – This is a numeric ID generated by the system when the sell offer is saved. This textbox cannot be edited.

- o **FTR ID** – This is automatically populated when an existing FTR is added. The FTR details are entered by selecting the record, then selecting the desired FTR under the folder **Existing FTRs** in the right central panel and clicking the "**Set FTR**" button.

- o **Bid Curve** – A pop up form to input the break points of the bid curve for the current bid being edited. Clicking the icon in one of the Bid Curve cell, a pop up a bid curve dialog shown as below in Figure 37.
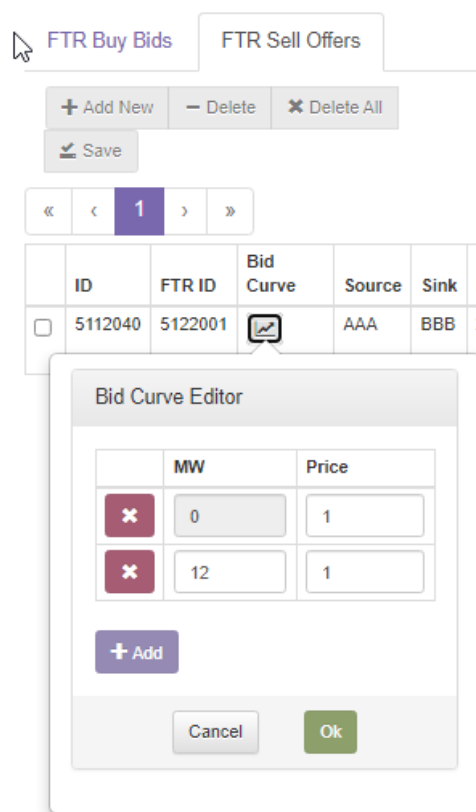
Figure 37 Sell Bid Curve Pop-up Window

- The left column and the right column of the bid curve table are the MW amount and the price in $/MWh of the break point respectively. Note that the first breakpoint for a SELL offer is always at 0 MW. Under the bid curve table there are four command buttons

  - o **Add:** This adds a new bid curve point. Up to 11 break points can be added for sloped sell offers

  - o **Delete:** This removes a selected row / bid point

  - o **SAVE**: Save all inputted bid curve break points. This button is available only when the portfolio is not in 'Approved' status (submitted to an auction) or the associated auction has not been posted.

o **CANCEL**: Cancel all actions since the last saving operation.

- **Source** – A text box to denote the name of the source for a PTP FTR. This is automatically populated when the FTR to be offered is selected.

- **Sink** – A text box to denote the name of the sink for a PTP FTR. This is automatically populated when the FTR to be offered is selected.

- **Class** – A text box to denote the name of the time-of-use. "24-HOURS" is automatically populated when the FTR to be offered is selected.

- **Asset Owner** – A text box to denote the name of the owner for a particular FTR. This data is automatically populated with the name of the **Asset Owner** for whom the bid portfolio is being created.

- **Bid Description** – An optional short description that a market participant may wish to associate with the bid. It can be used to store tags or IDs that market participants use within their own systems.

- **Hedge Type** - This is automatically populated when the FTR to be offered is selected.

Immediately below the Upper Panel in the Bid Portfolio Editor, the user is presented with several functions:
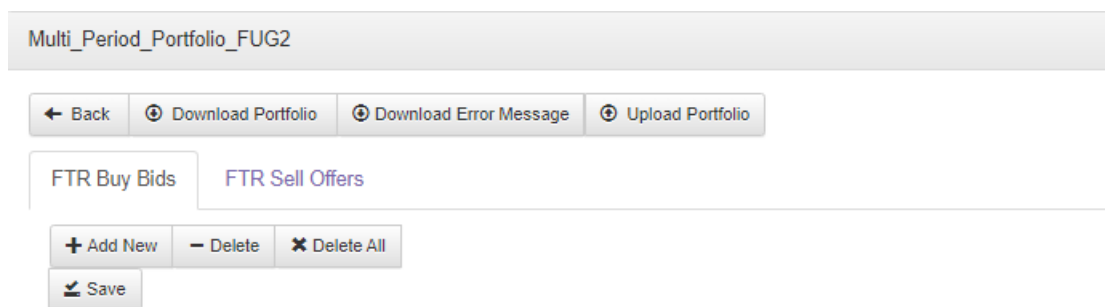
Figure 38   Bid Portfolio Editor Functions

o **Add New** – This button adds a single new buy or sell bid record to the portfolio editor. It is available only when the portfolio is not in 'Approved' status (submitted to an auction) or the associated auction has not been posted.

o **Delete** – This button deletes the selected set of bid record from the portfolio editor. Note that multiple rows can be selected by holding down the "Shift" key. It is available only when the portfolio is not in 'Approved' status (i.e., not submitted to an auction) or the associated auction has not been posted.

o **Delete All** - This button deletes all bid records from the portfolio editor. It is available only when the portfolio is not in 'Approved' status (submitted to an auction) or the associated auction has not been posted.

o **Upload Portfolio** - This button allows the user to upload a csv formatted file of bids to the portfolio editor as shown in Figure 26

If there are no validation errors, bids without a bid ID in the upload file will be added to the existing bids in the portfolio and bids with bid IDs in the upload file will be used to update the existing bids in the portfolio. All new and updated bids are automatically saved upon the upload process.

The upload button is available only when the portfolio is not in 'Approved' status (i.e., not submitted to an auction) or the associated auction has not been posted

- o **Save** - This button instructs the system to save the bid records on the portfolio editor. Validation of the bid set is conducted during the save operation and errors are immediately reported to the user on the screen. It is available only when the portfolio is not in submitted to an auction or the associated auction has not been posted.

- o **Download Portfolio** - This button permits the user to download a valid set of bids from the portfolio editor. The format of the download file is the same as the format of the upload file. All bids in the download file have bid IDs.

- o **Download Error Message** - This button downloads the error messages discovered during the save operation. The errors upon upload are not available for download using this button.

- o **Back** –This button allows the user to navigate back to the bid portfolio list page.

- **Right Central Panel** – a display tree that contains the following FTR information:
  - o **Sources/Sinks** – The folder contains all valid names of FTR sources and sinks that are applicable to the period and the auction.

Managing FTR Bids with the Portfolio Editor

Clicking on the **FTR Buy Bids** tab on the **Portfolio Editor** page brings up the **FTR Editor** panel. This panel is used to manage FTR auction bids. The following subsections describe these functions.

View Existing Portfolios

- From the **Portfolio Editor** select one of the existing portfolios from "**Select Another Portfolio**" list box. Then all the bids in this selected portfolio will be loaded in the bid editor table.

Add FTR Buy Bids

- Click "**ADD**" button in **Portfolio Editor**
- A new row will appear in the bid table and ready to be edited.

Fill all the necessary data fields except Class and Asset Owner. The Bid Description is optional. **Source** and **Sink** are filled by setting the appropriate item under the **Sources/Sinks** folder from the right central panel.

- Click "**Save**" button to save new bids.

Modify FTR Bids

- Modify fields of one or multiple FTR bids on the screen. Only ID, Class and Asset Owner are not editable.
- Click "**SAVE**" button in the bottom panel if necessary to save the updated bids of the portfolio in the database.

Delete FTR Bids

- Find the bid/s you wish to delete and select them
- Click the "**DELETE**" button in the bottom panel to delete each highlighted bid/s from the portfolio.
- All bids can be deleted by using the "**Delete All**" button.

Save FTR Bids in the Portfolio

- Click the "**SAVE**" button in the bottom panel.
- All modified bids in the current portfolio are saved in the database.

9. Trading in the Assignment Market

Overview of Assignment Market

The FTR Assignment market is a bilateral trading system that facilitates the trading of existing FTRs between Market Participants. The FTR manager automatically transfers ownership of the FTRs for each Market Participant accordingly.

The Assignment allows trading of existing FTRs only. An FTR as originally defined or a portion of the FTR can be traded, as long as the total MW amount of the FTR as well as the original FTR time spans are maintained. With these restrictions, trading in the Assignment has no impact on the simultaneous feasibility of the existing outstanding FTRs or on market-clearing prices in FTR auctions. There is no need for the FTR manager to perform simultaneous feasibility tests for trades in the Assignment.

When an FTR is traded, the associated firm transmission capability is not reassigned, just the financial entitlements.

The following steps are required to trade an FTR in the Assignment:

- A Market Participant creates a buy or sell offer for a particular market participant.
- The responding Market participant accepts the assignment and confirms the trade.
- The system executes a prudential check to ensure that the trade can be consummated. If the prudential requirements are satisfied, the trade is accepted and comes into effect, while if the prudential requirements are not satisfied, the trade is denied.

Accessing the Assignment

In the Assignment market tab, the functionality for READ_ONLY and READ_WRITE users remains the same except that except that a READ_ONLY user cannot post a bid or sell offer or accept a trade.

The Assignment market is designed to facilitate the trading of FTRs by two Market Participants after the terms of the FTR sale are negotiated. The money is exchanged outside the purview of the FTR System and the transfer of ownership of the FTR is conducted through the FTR System.

The Assignment can be accessed through the FTR interface. Figure 39 shows the "**Assignment Market**" tab.   By clicking this tab, the user will be taken to the **Assignment Market** web page shown in Figure 39.
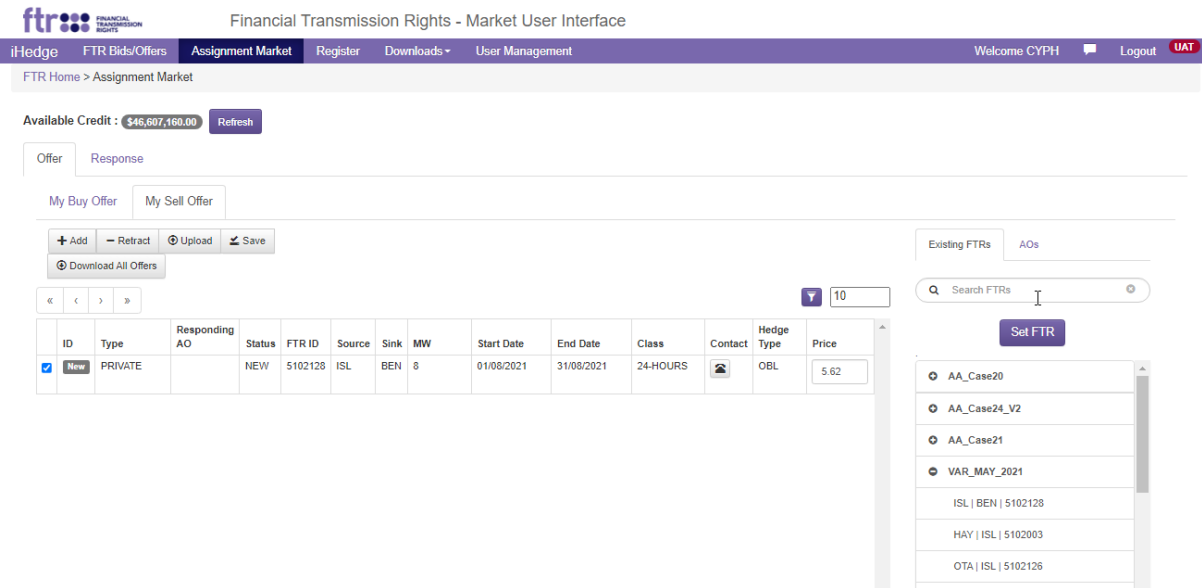
Figure 39 The Assignment Editor

Assignment Public posting display

The Assignment editor as shown in Figure 39 contains two tabs: Offer, and Response.

- **Offers tab** – editor for Market Participants to initiate the purchase or sale of FTRs in the Assignment. This tab has two sub-tabs – **My Buy Offer** and **My Sell Offer –** each displaying a table containing the following information
  - **ID** – The unique id of the transaction for purchase or sale of the FTR.
  - **Type** – The type is automatically filled as 'PRIVATE'.
  - **Responding AO** – The name of the counter party Asset Owner who will respond to the offer.
  - **Status** – Status of the FTR for sale
    - **Posted** – The buy bid or sell offer of the FTR has been posted.
    - **Pending AO Response** – Market Participants are working on closing the transaction for the FTR
    - **Approved** – FTR exchange was approved.
    - **Error** – FTR exchange was not approved as validations and/or prudential checks fail
  - **FTR ID –** The specific ID of the FTR for sale - applicable only to the **My Sell Offer** sub-tab
  - **Source** - The name of the source of the FTR
  - **Sink** – The name of the sink of the FTR
  - **MW** – The MW amount of the FTR
  - **Start Date** – The effective starting date of the FTR
  - **End Date** – The effective expiration date of the FTR

- o **Class** – The class is automatically filled as '24-HOURS'.

- o **Contact** – The name, address, phone number, email address of the designated person regarding this transaction for the purchase of the PTP FTR. It is assumed that this person is authorized to conduct this transaction on behalf of the Market Participant. This field is optional.

- o **Hedge Type** – OBL for Obligation hedge type and OPT for Option hedge type.

- o **Price** – The assignment price. This field is optional

- **Response tab -** editor for Market Participants to respond to buy or sell offers in the Assignment Market. This tab has two sub-tabs – **Respond to Buy Offer** and **Respond to Sell Offer –** each displaying a table the following containing the following information

  - o **Response ID -** The specific ID of the Response.

  - o **Request ID** - The Specific ID of the Request.

  - o **Type -** The type is automatically filled as 'PRIVATE'.

  - o **Initiating AO** - The name of the Initiating Asset Owner

  - o **FTRID** - The specific ID of the FTR being used to satisfy a buy request.   This is applicable only in the "Respond to Buy Offer".

  - o **Status** - Status of the FTR being traded

    - ▪ **Posted** – The buy bid or sell offer of the FTR has been posted.

    - ▪ **Pending AO Response** – Asset Owners are working on closing the transaction for the FTR

    - ▪ **Approved** – FTR exchange was approved.

    - ▪ **Error** – FTR exchange was not approved as validations and/or prudential check fail

  - o **Source -** The name of the source of the FTR being traded

  - o **Sink -** The name of the sink of the FTR being traded

  - o **MW -** The MW amount of the FTR being traded

  - o **Start Date -** The effective starting date of the FTR being traded

  - o **End Date -** The effective expiration date of the FTR being traded

  - o **Class -** The class is automatically filled as '24-HOURS'.

  - o **Contact -** The name, address, phone number, email address of the designated person regarding this transaction for the PTP FTR. It is assumed that this person is authorized to conduct this transaction on behalf of the Asset Owner. The field is optional.

  - o **Hedge Type -** OBL for Obligation hedge type and OPT for Option hedge type.

  - o **Price** – The assignment price. This field is optional. The price can be assigned only by the Asset Owner who initiates the Assignment.

Posting an Assignment offer

The Offer tab is divided into two sub-tabs, "My Buy Offers" and "My Sell Offers". The following sections describe how to post a buy offer or sell offer for FTR Assignments:

Submit a Buy Offer

To post a new Buy offer, the user must click the **Add** button found at the top of the "**My Buy Offer**" panel. Doing so will create a blank row (or record) in the "**My Buy Offer**" panel as shown in Figure 40.
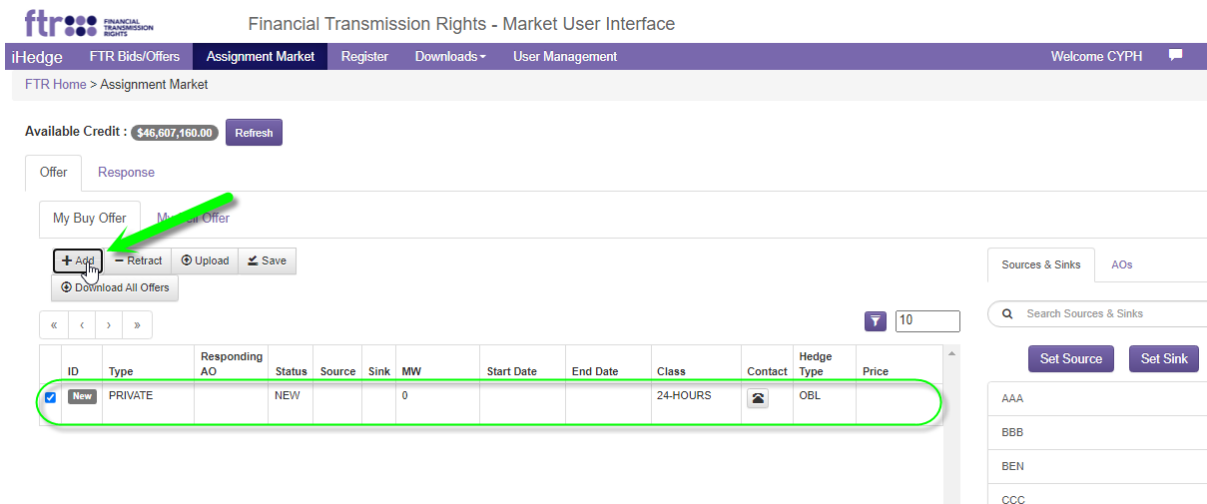
Figure 40   Posting "My Buy Offer"

The Market Participants can then fill in the necessary information by setting **Responding Market Participant**, **Sources/Sinks** data from the right hand panel data structures in the appropriate fields of the editor (using the "Set AO", "Set Source" and "Set Sink" buttons to specify the Responding AO, Source and/or Sink to one or multiple selected new buy offers), typing in desired **MW**; entering **Start Date** and **End Date** (or selecting them from a calendar which appears when the calendar icon on the right of the cell is clicked); and selecting **Hedge Type** from a drop-down list for either **OPT** or **OBL** from drop-down menus. Contact and Price are optional. In order to fill in Contact Information, the user must click on the symbol in the Contact column, which displays a popup shown in Figure 41. The user must enter the relevant contact information (name, address, phone number & e-mail address) and click **Save** to save the information or **Cancel** to close without saving.
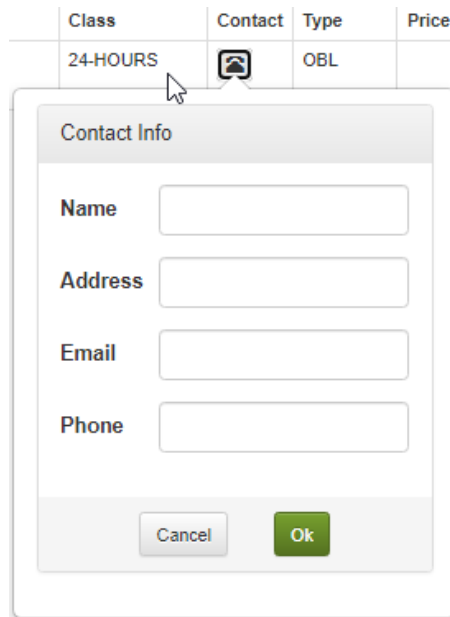
Figure 41   Private Posting Editor with Contact Information pop-up window

Once all fields of the buy offer have been entered, click on the "**Save**" button to post the buy offer. As shown in Figure 42, the status field of this new buy offer will now change to "**Pending AO Response**" in the "My Buy Offers" panel after the buy offer has been saved.

Figure 42   Private Posting Editor with an FTR Buy Offer

Submit a Sell Offer

To post a new Sell offer, the user must click the **Add** button found on the left of the "**My Sell Offer**" panel under the Offer Tab. Doing so will create a blank record in the "**My Sell Offer**" panel as shown in Figure 43.
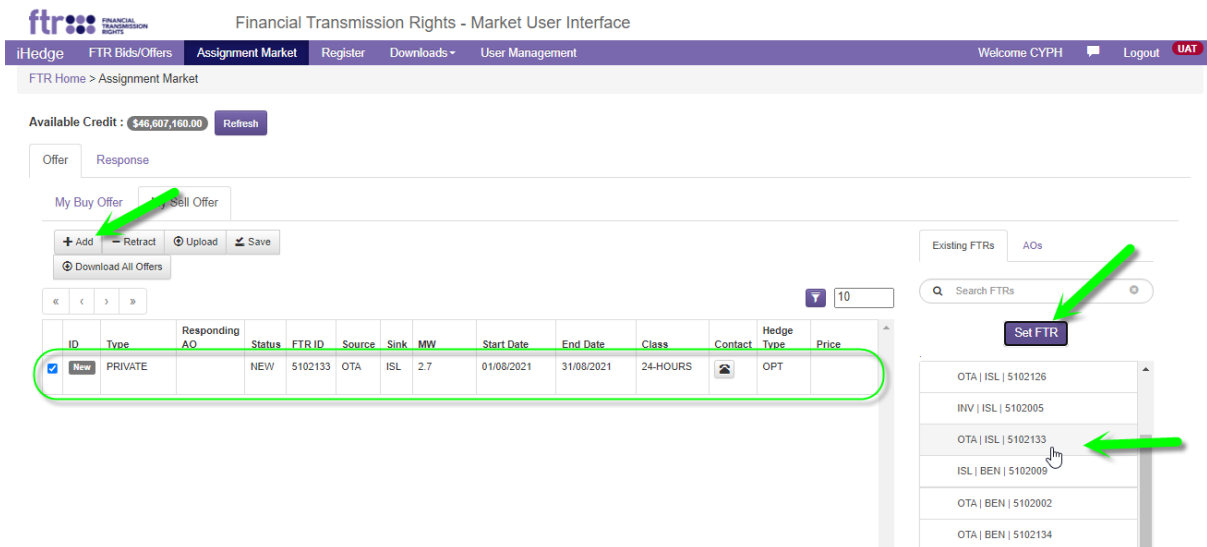
Figure 43 Posting "My Sell Offer"

An FTR for sale can be selected from the Existing FTRs listed on the right panel. The market Participant can view their existing FTRs by opening the '**Existing FTRs'** folder. Expanding a sub-folder of an Auction and double clicking the record displays the FTR properties as shown in Figure 44.
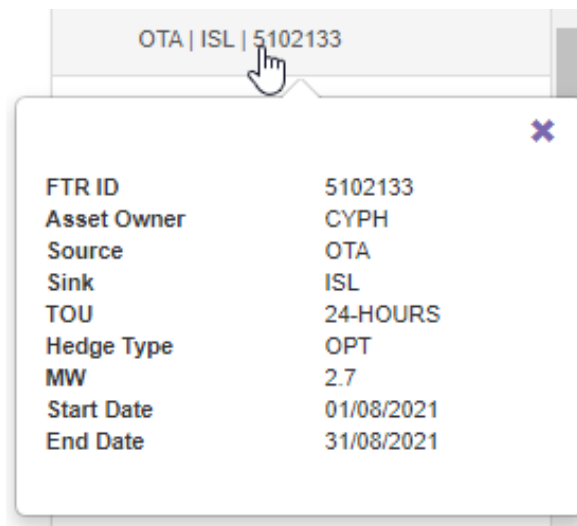
Figure 44 FTR Properties of an existing FTR

The Market Participant can then set an FTR from the existing FTRs into the "My Offer Details" pane and fill in the remaining necessary information:

- **Responding AO** – Asset Owner who will respond to the sell offer. The asset owner can be selected and set to one or multiple selected new sell offer(s) from the Asset Owner list on the right panel.

- **MW** – The MW amount of the FTR, which may be less than or equal to the original FTR.

Start Date and End Date fields are editable but the effective start and end date of the FTR sell offer must be the whole calendar month.

Contact and Price fields are optional. In order to fill in Contact Information, the user must click on the icon in the contact cell, which displays a popup shown in Figure 41. The user must enter the relevant contact information (name, address, phone number & e-mail address) and click **Save** to save the information, **Cancel** to close without saving.

Once the information has been entered, as shown in Figure 45, click on the "**Save**" button to post the sell offer. The status field of this new sell offer will change to "**Pending AO Response**" as shown in Figure 45, after the sell offer has been saved.
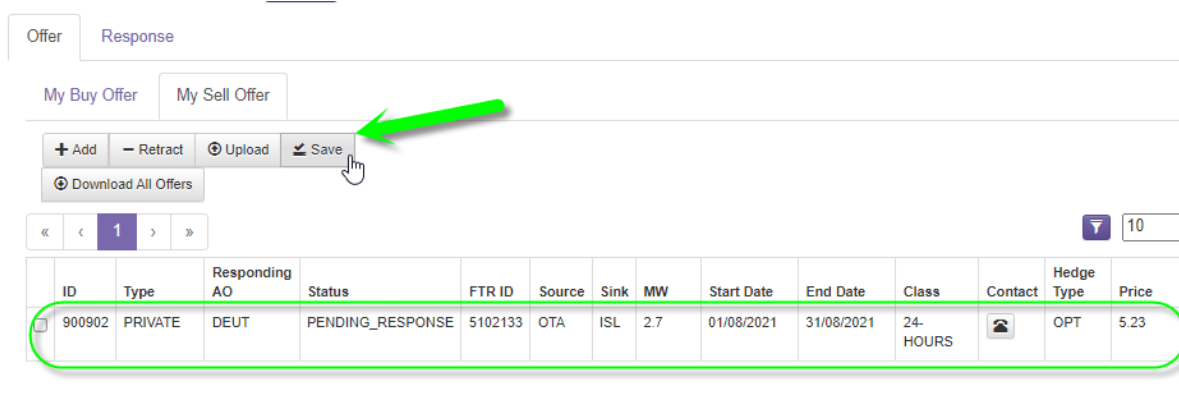
Figure 45   Private Posting Editor with a new Sell Offer

Responding to Buy/Sell Offer of an FTR Assignment

The following steps describe how to respond to a buy or sell offer of an FTR assignment.

Responding to a "Buy Offer"

When a Market Participant responds to a buy offer of an FTR assignment, the Market Participant must match that bid with its FTR holding. The matching holding must have the sufficient MW amount, same start and end dates, same hedge type (OBL or OPT). If the assignment price is defined in the offer and the Market Participant responds to it, it means the Market Participant agrees on the price which will be subject to the prudential check on the FTR buyer.

- **Step 1**: The selling participant must sign into the system and go to the Response tab and Response to Buy Offer sub-tab. The user must select a buy offer to be responded.

- **Step 2**: The Market Participant must select an FTR from Existing FTRs folder in the right panel to fulfil the buy bid, ensuring that the total MW is sufficient to the amount necessary to fulfil the offer and other properties of the FTR match the offer's properties. See Figure 46.
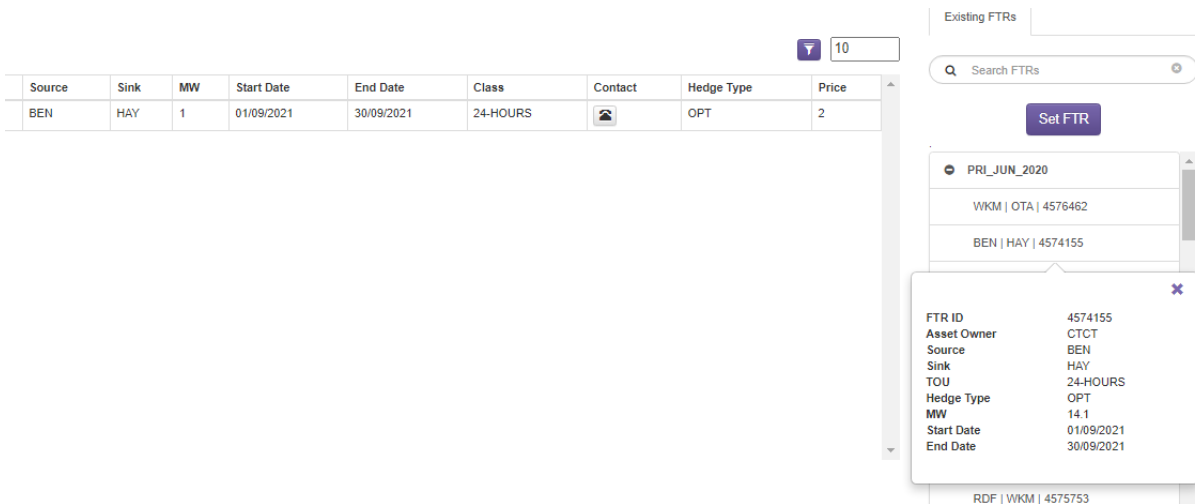
Figure 46 Existing FTR used to respond to a buy offer

- **Step 3**: Click 'Set FTR' button, as shown in Figure 47, to the buy offer. Clicking 'Set FTR' button will prompt an error if the FTR does not match the offer, e.g., source/sink does not match or the MW amount of the FTR is insufficient. If the FTR matches the buy offer, the FTR ID on the record will become ID of set FTR as shown in Figure 48.
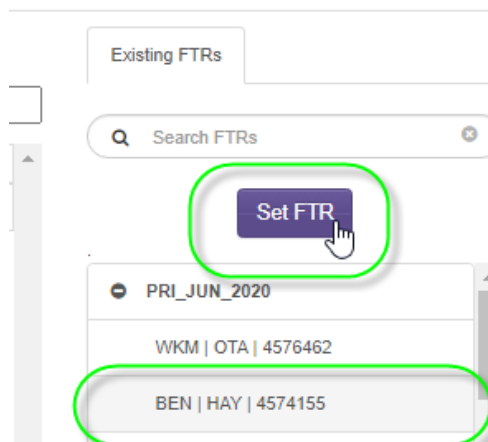
Figure 47 'Set FTR' to match its own FTR to the buy offer

- **Step 4**: Click on 'Respond' button to finalize the response. If the assignment price is defined in the offer and the Market Participant responds to it, it means the Market Participant agrees on the price.
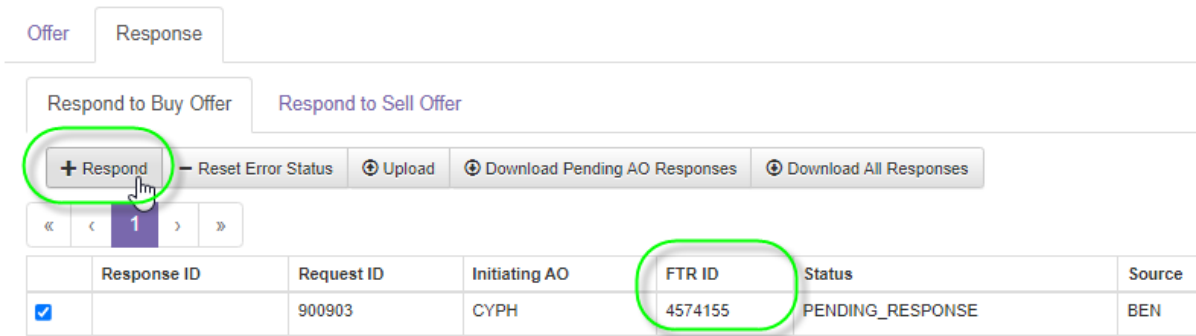
Figure 48 Click Respond button to finalize the response

The status of the response to the buy offer will change to "**Approved**" or "**Error**" depending on the validation result. Figure 49 shows a sample of an approved FTR assignment initiated by the buyer. The Market Participant who posted the buy offer will also see the status of the offer as "**Approved**".
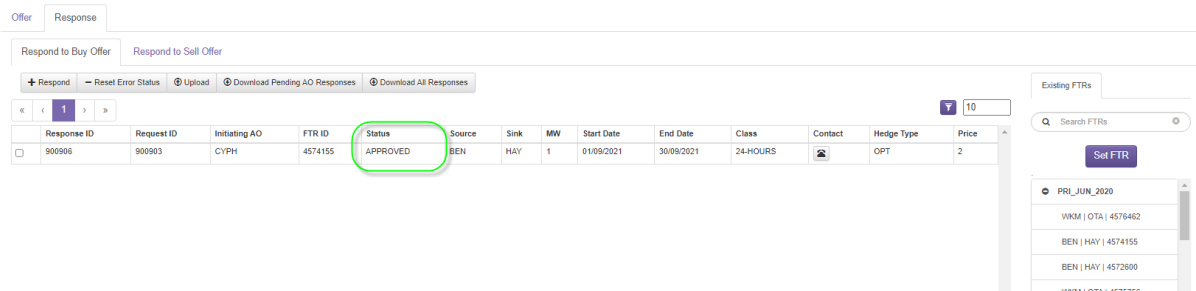
Figure 49 Approved FTR Assignment initiated by the buyer

If the response to the buy offer fails the validations, the FTR assignment transaction will have "**Error**" status. If the response is in error due to a violation in a validation other than prudential check, the Market Participant who posted the buy offer will still see the status of the offer as "**Pending AO Response**".

If the buying Market Participant does not have the requisite prudential to purchase the FTR, the offer and the response will be in "**Error**". An error will notify the selling Market Participant that the transaction is in error because the buyer has insufficient prudential.

- **Step 5**: One or multiple error responses to any buy offers can be reset by clicking on '**Reset Error Status**' button. Once the Market Participant confirms to reset the error on the dialog, the status of FTR assignment offer(s) and response(s) is reset to '**Pending AO Response'**.

Responding to a "Sell Offer"

The following steps describe how to respond to one or multiple sell offer:

- **Step 1**: Buying Market Participant must confirm FTR purchase by simply selecting one or multiple sell offer(s) and clicking on '**Respond**' button as shown in Figure 50.

Figure 50 Respond to Sell Offer

If the assignment price is defined in the offer and the Market Participant responds to it, it means the Market Participant agrees on the price which will be subject to the prudential check on the FTR buyer.

The status of the response to the sell offer will change to "**Approved**" or "**Error**" depending on the validation result. Figure 51 shows a sample of an approved FTR assignment initiated by the seller. The Market Participant who posted the sell offer will also see the status of the offer as "**Approved**".

Figure 51 Approved Response to Sell Offer

If the response to the sell offer fails the validations, the FTR assignment transaction will have "**Error**" status. If the response is in error due to a violation in a validation other than prudential check, the Market Participant who posted the sell offer will still see the status of the offer as "**Pending AO Response**".

If the buying Market Participant does not have the requisite prudential to purchase the FTR, the offer and the response will be in "**Error**". An error message, as shown in Figure 52, will be displayed describing the required prudential to fulfil the purchase and the buyer's available prudential. An error will notify the selling Market Participant that the transaction is in error because the buyer has insufficient prudential as shown in Figure 53.

Figure 52 Error Response to Sell Offer due to Buyer's Insufficient Prudential

Figure 53 Error Sell Offer due to Buyer's Insufficient Prudential

- **Step 2**: One or multiple error responses to any sell offers can be reset by clicking on '**Reset Error Status**' button. Once the Market Participant resets the error on the dialog illustrated in Figure 54, the status of FTR assignment offer(s) and response(s) is reset to '**Pending AO Response'**.

Figure 54 Reset Error Status of Response to Sell Offer

Upload Assignments

Only Market Participants with '**READ_WRITE'** role will be able to upload buy/sell offers and responses to buy/sell offers.

Upload Buy/Sell Offers

Using 'Upload' button under '**My Buy Offer'** or '**My Sell Offer'** tab allows the FTR participants to post multiple buy and/or sell offers in Assignment Market. Figure 55 shows a sample upload file containing FTR buy and sell offers.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	
1	Request ID	Public/Private	Buy/Sell	FTR ID	Respondi	Source	Sink	Start Date	End Date	TOU	OPT/OBL	MW	PRICE	Contact N	Contact A	Contact E	Contact P	Status
2		PRIVATE	SELL	5102002	CTCT	OTA	BEN	1/07/2021	31/07/2021	24-HOURS	OPT	8	5.36					
3		PRIVATE	SELL	5102133	CTCT	OTA	ISL	1/08/2021	31/08/2021	24-HOURS	OPT	2.7	12.36					
4		PRIVATE	BUY		CTCT	BEN	HAY	1/09/2021	30/09/2021	24-HOURS	OPT	1	2					
5		PRIVATE	SELL	5102133	DEUT	OTA	ISL	1/08/2021	31/08/2021	24-HOURS	OPT	2.7	5.23					
6		PRIVATE	BUY		DEUT	BEN	HAY	1/06/2021	30/06/2021	24-HOURS	OBL	4	10					

Figure 55   Sample Upload File for Assignment Buy/Sell Offers

The format of the upload file for the Assignment Offers must contain the following columns:

- **Request ID** - The Specific ID of the Request. The Request ID column shall be left blank, and the system will assign the Request ID of each valid record upon upload if all records in the upload file pass the data validations.

- **Public/Private Type - EMS** currently allows only 'PRIVATE'.

- **Buy/Sell Type** - BUY for buy offer or SELL for sell offer

- **FTR ID** - The specific ID of the FTR. This is applicable only in the "Sell Offer".

- **Responding AO** - The name of the Market Participant who will respond

- **Source -** The name of the source of the FTR being traded

- **Sink -** The name of the sink of the FTR being traded

- **Start Date -** The effective starting date of the FTR being traded

- **End Date -**   The effective expiration date of the FTR being traded

- **TOU -** The class is automatically filled as '24-HOURS'.

- **Hedge Type** - OBL for Obligation or OPT for Option

- **MW -** The MW amount of the FTR being traded

- **Price** - The assignment price. This field is optional.

- **Contact -** The name, address, phone number, email address of the designated person regarding this transaction for the PTP FTR. The field is optional.

The data validations are performed upon the upload. If at least one validation fails, all records in the upload file are not saved and a button will be available on the upload result notification window for the FTR participant to download the error report.

Upload Responses to Buy/Sell Offers

Using '**Upload**' button under '**Respond to Buy Offer**' or '**Respond to Sell Offer**' tab allows the FTR participants to respond to multiple buy and/or sell offers in Assignment Market. Figure 56 shows a sample of upload file. Responses to both buy and sell offers can be in the same upload file.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Request ID	Buy/Sell Offer	FTR ID	Initiating	Source	Sink	Start Date	End Date	TOU	Hedge Type	MW	PRICE
2	900903	BUY	4574155	CYPH	BEN	HAY	1/09/2021	30/09/2021	24-HOURS	OPT	1	2
3												

Figure 56   Sample Upload File for Responses to Assignment Buy/Sell Offers

The format of the upload file for the responses to the Assignment Offers must contain the following columns:

- **Request ID** - The Specific ID of the Request. The Request ID refers to an existing offer in 'Pending AO Response' status.

- **Buy/Sell Type** – BUY for buy offer or SELL for sell offer. It must match the offer's buy/sell type.

- **FTR ID** - The specific ID of the FTR being used to satisfy a buy request (it is required only for response to the buy offer).

- **Initiating AO** - The name of the Market Participant who initiated the private offer. It must match the offer's Market Participant.

- **Source** - The name of the source of the FTR being traded. It must match the offer's source.

- **Sink** - The name of the sink of the FTR being traded. It must match the offer's sink.

- **Start Date** - The effective starting date of the FTR being traded. It must match the offer's start date.

- **End Date** - The effective expiration date of the FTR being traded. It must match the offer's end date.

- **TOU** - The class is automatically filled as '24-HOURS'.

- **Hedge Type** – OBL for Obligation or OPT for Option. It must match the offer's Hedge Type.

- **MW** - The MW amount of the FTR being traded. It must match the offer's MW.

- **Price** – The assignment price. This field is not validated. The price can be assigned only by the Market Participant who initiates the Assignment.

The data validations are performed upon the upload. If at least one validation fails, all records in the upload file are not saved and a button will be available on the upload result notification window for the FTR participant to download the error report.

Download Assignments

Download Buy/Sell Offers

Using '**Download All Offers'** button allows the FTR participants to download all existing buy and sell offers under '**My Buy Offer'** and '**My Sell Offer'**.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Request ID	Public/Pri	Buy/Sell	FTR ID	Respondi	Source	Sink	Start Date	End Date	TOU	OPT/OBL	MW	PRICE	Contact N	Contact A	Contact E	Contact P	Status
2	900910	PRIVATE	SELL	4786228	CYPH	BEN	OTA	1/06/2021	30/06/2021	24-HOURS	OPT	1.5	12.35					Pending AO Response
3	900911	PRIVATE	SELL	4765228	CYPH	BEN	KIK	1/06/2021	30/06/2021	24-HOURS	OPT	5	2.5					Pending AO Response
4	900912	PRIVATE	SELL	4716228	MERI	ISL	HAY	1/06/2021	30/06/2021	24-HOURS	OPT	2	12					Pending AO Response
5	900913	PRIVATE	SELL	3786228	CYPH	INV	ISL	1/04/2023	30/04/2023	24-HOURS	OPT	3	6.53					Pending AO Response
6																		

Figure 57 Sample Download File for Assignment Buy/Sell Offers

Download Responses to Buy/Sell Offers

The FTR participants have two options to download the assignment responses – '**Download Pending AO Responses'** or '**Download All Responses'**. Using '**Download Pending AO Responses'** button, only buy and sell offers that need to be responded (i.e., in "**Pending AO Response**" status) will be downloaded. The download file can be used in upload of responses. Note that an FTR ID is required to be filled in the upload file for a response to a buy offer before it's used for upload.

Figure 58 shows a sample of download file containing pending offers which the initiator posted to the Market Participant.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Request ID	Buy/Sell Offer	FTR ID	Initiating	Source	Sink	Start Date	End Date	TOU	Hedge Type	MW	PRICE
2	900905	SELL		CYPH	OTA	BEN	1/07/2021	31/07/2021	24-HOURS	OPT	8	123.00
3												

Figure 58   Sample Download File for Assignment Buy/Sell Offers Pending for Responding AO to Respond

Using the '**Download All Responses'** button, all responses will be downloaded in one file. Figure 59 shows a sample download file of all responses with status.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Response	Request ID	Buy/Sell Offer	FTR ID	Initiating	Source	Sink	Start Date	End Date	TOU	Hedge Ty	MW	Price	Status
2		900905	SELL		CYPH	OTA	BEN	1/07/2021	31/07/2021	24-HOURS	OPT	8	123.00	Pending MP Response
3	900907	900904	SELL		CYPH	OTA	ISL	1/08/2021	31/08/2021	24-HOURS	OPT	2.7	12.36	Approved
4	900906	900903	BUY		CYPH	BEN	HAY	1/09/2021	30/09/2021	24-HOURS	OPT	1	2	Approved

Figure 59   Sample Download File for All Responses to Assignment Buy/Sell Offers with Status

Assignment Trade Activity Flows

An activity flow of the FTR assignment initiated by a buyer is shown in Figure 60. The activity flow of the FTR assignment initiated by a seller is shown in Figure 61.

Posting Market Participant	Responding Market Participant

Negotiate

1. Interested parties communicate through the Contact Information Media.
2. Negotiate and Deal.
Note. Payments are made directly between parties

Post a private Buy Offer with specified responding asset owner on My Buy Offer page.

System responds by changing the status of the buy offer to 'Pending AO Response' and displays the buy offer to the responding AO on 'Respond to buy Offer' page.

Choose the Buy Offer to be fulfilled on the 'Respond to buy Offer' page.

1. Select an FTR to match the Buy Offer from Existing FTR list.
2. Set FTR to Buy Offer
3. Click 'Respond' button

System responds by changing the offer and response status to 'Approved'. If the buyer has insufficient Prudential, the status of both offer and response is in 'error'. If the response fails the data validation, the status of the response is also 'Error;.

Project: Use of FIS Policy	Drawing Title: BUY Offer Process	ems
	Dwg No. 20140709-003	

Figure 60 Assignment Buy Offer Activity Flow

Figure 61   Assignment Sell Offer Activity Flow

10.   Public and Private Downloads

Available Public Information on the FTR Download Interface

The FTR Public download interface is available to all EMS Market Participants and the same information is presented to all of them.

At any time, users can download and view:

- **General Data** Existing FTRs in CSV and XML formats

Starting from a few days before the opening of the bidding window, users can download and view the following data (one file per period):

1. **Network Data**
   - Asset Mappings in CSV and XML formats
   - Contingency list in CSV and XML formats
   - Monitored Lines and Transformers list in CSV and XML formats.
   - Network(s) in PSS/E RAWD format release 32.0
   - Nomogram in CSV and XML formats
   - Scheduled Outages in CSV and XML formats

2. **Market Data**
   - Source and sink definitions in CSV and XML formats
   - Baseloading FTRs in CSV and XML formats.
   - FTR Capacity in CSV and XML formats.

After an auction is completed, users can download and view the auction results (one file per period):

1. **Auction results**
   - Binding Constraints in CSV and XML formats

Download and View General Data

By clicking the **General** tab on Public FTR interface the users will enter the General Data download page shown in Figure 62. Data is generally available in CSV formatted files, which are easily read by software packages such as Microsoft EXCEL™, or in XML formatted files. Details of the CSV formatted data files are described below and are viewed using Microsoft EXCEL™. Details of the corresponding XML formatted files can be found in the document entitled: **EMS Financial Transmission Rights System – Market User Interface – XML Reference.**
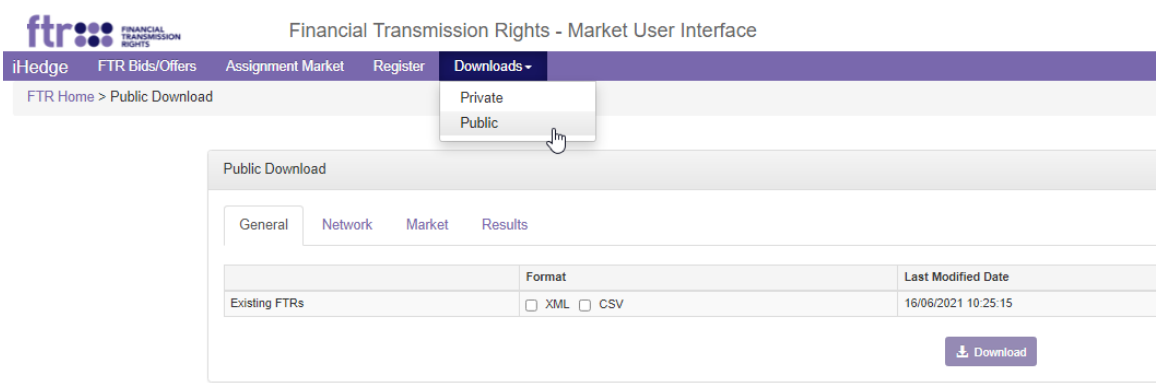
Figure 62   General Data Available from the Public FTR Interface

To download existing FTRs list, check the box for XML and/or CSV formats and click the **Download** button. The download files will be in a zipped format, which can be viewed using an un-compression tool.

Figure 63   Sample Existing FTR List in CSV Format

The following information is available from the existing FTR download file:

- **FTR_ID** – The unique ID of the FTR

- **SegmentID** – The segment number of a profiled FTR.

- **MarketParticipant** – Name of the Asset Owner who owns the PTP FTR. EMS uses Asset Owner and Market Participant interchangeably and they both are the same as FTR participant name in four characters.

- **Category** – Flag denoting the type of the FTR – Point-to-Point (PTP)

- **Source** – Name of the Source for the PTP FTR

- **Sink** – Name of the Sink for the PTP FTR

- **StartDate** – The beginning date of the time period for which the FTR is considered valid.

- **EndDate** – The end date of the time period for which the FTR is considered valid.

- **HedgeType** – obligation (OBL) of the PTP FTR.

- **Class** – 24-HOURS time of use of the PTP FTR

- **MW** – The MW value associated with the FTR

Download and View Network Data

By clicking the **Network** tab on Public FTR interface the users will enter the Network Data download page shown in Figure 64. The user must select both a particular Market Term (Primary Auction or Variation Auction) from a drop-down list and the specific Auction Market name from the second drop down list.

Figure 64   Network Data on the Public FTR Interface

To download the asset maps, contingencies, monitored lines and transformers, network model, nomograms and/or scheduled outages, check the box for XML, CSV and/or RAW formats and click the **Download** button. The download files will be in a zipped format, which can be viewed using an un-compression tool.
A sample asset mapping download file in CSV format is shown in Figure 65. A sample existing FTRs list in CSV format is shown in Figure 63.

The following information is available from the asset mapping download file:

- FromBusName – Name of 'From Bus'

- ToBusName – Name of 'To Bus'

- CircuitID – Circuit ID

- AssetType – Asset Type (Line or Transformer)

- AssetName – Name of line or transformer that is between 'From Bus' and 'To Bus' on 'Circuit ID'

FromBusName	ToBusName	CircuitID	AssetType	AssetName
ABY/ABY_11	ABY/ABY_110	2	Transformer	ABY.TF.T2
ABY/ABY_110	TIM110B_1	1	Line	ABY.TIM.1
ABY/ABY_110	TKA/TKA_110	1	Line	ABY.TKA.1
ABY/ABY_33	ABY/ABY_11	1	Transformer	ABY.TF.T1
ADD6/ADD66A1	ISL66/ISL66A	1	Line	ADD.ISL.1
ADD6/ADD66B1	N_ADD-REA-R6	6	Transformer	ADD.TF.T6
ALB/ALB110A1	ALB.TF.T4	4	Transformer	ALB.TF.T4_S
ALB/ALB110A1	HEN/HEN110A1	2	Line	ALB.HEN.2
ALB/ALB110A1	WRD-110-1	1	Line	ALB.WRD.1

Figure 65 Sample Asset Mapping download file in CSV format

Sample download files of contingency and monitored lines and transformers in CSV format are shown in Figure 66 and Figure 67 respectively.

A sample network model file in RAW format is shown in Figure 68.

Sample download files of nomograms and scheduled outages in CSV format are shown in Figure 69 and Figure 70 respectively.

Contingency	DeviceName	DeviceType	Action	Class
CTG_1028861	ABY.TIM.1	Line	OUT	24-HOURS
CTG_1028863	ALB.WRD.2	Line	OUT	24-HOURS
CTG_1028865	ALB.WRD.3	Line	OUT	24-HOURS
CTG_1028867	ALB.WRD.1	Line	OUT	24-HOURS
CTG_1028869	ALB.HEN.1	Line	OUT	24-HOURS
CTG_1028871	ALB.HEN.2	Line	OUT	24-HOURS
CTG_1028873	ALB.SVL.2	Line	OUT	24-HOURS
CTG_1028875	ALB.SVL.1	Line	OUT	24-HOURS

Figure 66 Sample Contingency List in CSV Format

The following information is available from the contingency file:

- **Contingency** – The name of the contingency

- **Device Name** – The name of the device which is in service or out of service in the contingency

- **Device Type** – The type of the device (Line, Transformer)

- **Action** – Whether the device is inaged (put IN service) or outaged (taken OUT of service)

- **Class** – The time period of use – 24-HOURS

DeviceName	DeviceType	BaseCaseRating	EmergencyRating	Class
ABY.TIM.1	LINE	53.3	53.3	24-HOURS
ABY.TKA.1	LINE	53.3	53.3	24-HOURS
ALB.HEN.1	LINE	90.4	90.4	24-HOURS
ALB.HEN.2	LINE	90.4	90.4	24-HOURS
ALB.HEN.3	LINE	530.9	530.9	24-HOURS
ALB.HPI.1	LINE	530.9	530.9	24-HOURS
ALB.SVL.1	LINE	328.7	328.7	24-HOURS
ALB.SVL.2	LINE	328.7	328.7	24-HOURS
ALB.WRD.1	LINE	86	86	24-HOURS

Figure 67   Sample Monitored Lines and Transformers List in CSV Format

The following information is available from the monitored lines and transformers file:

- **DeviceName** – The name of the device name

- **DeviceType** – The type of device (Line or Transformer)

- **BaseCaseRating** – MW Rating of branch to be observed in the base case.

- **EmergencyRating** – MW Rating of branch to be observed in the contingency cases.

- **Class** – Time of use designation – 24-HOURS where the branch is to be monitored

```
0,   100.00, 32, 0, 0, 50.00
FTRcase_NIPS-1.4.1b_SIPS-1.4.1b(2)-FTR Studycase
PowerFactory 2018 SP2   Date: 27/05/2021, Time: 9:44:21 a.m.
1,'ABY/ABY_11   ',11,1,3,6,1,0.96347,-104.924
2,'ABY/ABY_110 ',110,1,3,6,1,0.98911,-12.0799
3,'ABY/ABY_33   ',33,4,3,7,1,0,0
4,'ADD-M/ADD11A',11,1,3,7,1,1.01597,-113.5038
5,'ADD-M/ADD11B',11,1,3,7,1,1.00785,-113.5049
6,'ADD6/ADD66A1',66,1,3,7,1,1.02874,-23.5021
7,'ADD6/ADD66B1',66,1,3,7,1,1.02877,-23.5019
8,'ALB-T4-Terti',11,1,2,7,1,1.03497,-116.8449
9,'ALB/ALB110A1',110,1,2,7,1,1.03457,-26.8121
10,'ALB20_SVC    ',20,1,2,7,1,1.03351,-55.7219
11,'ALB/ALB220A1',220,1,2,7,1,1.03351,-25.7219
12,'ALB33/ALB33a',33,1,2,7,1,1.00267,-120.985
13,'ALD/ALD_3-3 ',3.3,4,3,7,1,0,0
14,'ALD/ALD_33   ',33,4,3,7,1,0,0
15,'ALD_TF1_11   ',11,4,3,7,1,0,0
16,'AMS11         ',11,2,3,7,1,1.01451,156.2957
17,'ANI/ANI33     ',33,1,2,7,1,1.00023,-89.0913
18,'ANI/ANI_110 ',110,1,2,7,1,1.02,-6.0085
19,'ANI/ANI_G1   ',11,2,2,7,1,1.03522,26.9768
20,'ANI/ANI_G2   ',11,2,2,7,1,1.03522,26.9768
21,'APS/APS_11   ',11,1,3,5,1,0.99877,-116.1349
22,'APS/APS_66   ',66,1,3,5,1,1.02078,-26.0194
23,'ARA/ARA220   ',220,1,2,7,1,1.02,-5.9355
24,'ARA/ARA_G1   ',11,2,2,7,1,1.01385,-92.7654
25,'ARA/ARA_G2   ',11,2,2,7,1,1.01385,-92.7654
26,'ARA/ARA_G3   ',11,2,2,7,1,1.097,-93.3357
27,'ARG/ARG_11   ',11,1,3,2,1,1.02,-55.2239
28,'ARG/ARG_110 ',110,1,3,2,1,1.02456,-27.9548
29,'ARG_G1_3.3   ',3.3,2,3,2,1,0.98411,-83.5336
30,'ARI11/ARI11 ',11,2,2,7,1,0.99595,-41.0331
```

Figure 68   Sample of Network Model in RAW format

Name	Class	Constraint	Limit	DeviceName	DeviceType	Direction	Factor
GZ14_EXPORT_FREQUENCY _LIMIT_P_1	24-HOURS	Perm-3-GZ14_EX	1720	CML.CYD.1	Line	To-From	1
				CML.CYD.2	Line	To-From	1
				NSY.ROX.1	Line	To-From	1
GZ14_EXPORT_FREQUENCY _LIMIT_P_2	24-HOURS	Perm-4-GZ14_EX	1720	CYD.ROX.1	Line	To-From	1
				CYD.ROX.2	Line	To-From	1
				NSY.ROX.1	Line	To-From	1
HLY_SFD_Stability_P_z	24-HOURS	Perm-5-HLY_SFD	473	HLY.SFD.1	Line	To-From	1
				SFD.TMN.1	Line	From-To	1
HVDC_Northwards	24-HOURS	HVDC_N	780.02	BEN.HAY.1	Line	From-To	1
HVDC_Southwards	24-HOURS	HVDC_S	541.8	BEN.HAY.1	Line	To-From	1
MAN_INTERTRIP_DISABLED _STABILITY_P_1	24-HOURS	Perm-6-MAN_INT	726.7	INV.MAN.2	Line	To-From	1
				MAN.NMA.1	Line	From-To	1
				MAN.NMA.2	Line	From-To	1
				MAN.NMA.3	Line	From-To	1
MAN_INTERTRIP_ENABLED _STABILITY_P_1	24-HOURS	Perm-7-MAN_INT	756.8	INV.MAN.2	Line	To-From	1
				MAN.NMA.1	Line	From-To	1
				MAN.NMA.2	Line	From-To	1
				MAN.NMA.3	Line	From-To	1

Figure 69   Sample of Nomogram download file in CSV format

The following information is available from the nomogram file:

- **Name** – The name of nomogram
- **Class** – Time of use designation – 24-HOURS
- **Constraint** – Name of constraint in the nomogram. A nomogram can have one or multiple constraints.
- **Limit** – Limit on the constraint
- **DeviceName** – Name of device monitored as part of the constraint
- **DeviceType** – The type of device (Line or Transformer)

- **Direction** – Constraint direction compared to the device's From Bus and To Bus.

- **Factor** – Participation factor of the device flow in the constraint.

Outage	DeviceName	DeviceType	Class
2	FHL.WPW.1	Line	24-HOURS
0000006_P	EDG.TF.T5_P	Transformer	24-HOURS
0000006_T	EDG.TF.T5_T	Transformer	24-HOURS
1104085	NMA.TWI.1	Line	24-HOURS
3	FHL.WPW.2	Line	24-HOURS
1096681	KAW.TF.T14	Transformer	24-HOURS
0000006_S	EDG.TF.T5_S	Transformer	24-HOURS

Figure 70   Sample Scheduled Outages List in CSV Format

The following information is available from this file:

- **Name** – Designated name for the Outage

- **DeviceName** – The name of the transmission line or transformer being outaged.

- **DeviceType** – Type of device (Line or Transformer)

- **Class** – The time of use designation – 24-HOURS

Download and View Market Data

By clicking the **Market** tab on Public FTR interface the users will enter the Market Data download page.
A user must select both a particular Market Term (Primary Auction or Variation Auction) from the drop-down list and the specific Auction Market name from the second drop down list.

To download the Base Loading FTRs, Capacity and/or Sources and Sinks data, check the box for XML and/or CSV formats and click the **Download** button. The download files will be in a zipped format, which can be viewed using an un-compression tool.

Sample download files of base loading FTRs, capacity and sources and sinks in CSV format are shown in Figure 71, Figure 72 and Figure 73 respectively.

FTR_ID	MarketParticipant	Source	Sink	MW	Start Date	End Date	HedgeType	Class
4625378	SWET	BEN	ISL	0.6	1/08/2022	31/08/2022	OPT	24-HOURS
4665718	SWET	RDF	OTA	0.6	1/08/2022	31/08/2022	OPT	24-HOURS
4665687	SWET	ISL	BEN	1.1	1/08/2022	31/08/2022	OPT	24-HOURS
4665738	SWET	WKM	RDF	1.8	1/08/2022	31/08/2022	OPT	24-HOURS

4665736	SWET	WKM	HAY	1.1	1/08/2022	31/08/2022	OPT	24-HOURS
4665727	SWET	KIK	ISL	2.1	1/08/2022	31/08/2022	OPT	24-HOURS
4625428	SWET	WKM	HAY	0.7	1/08/2022	31/08/2022	OPT	24-HOURS
4665710	SWET	ISL	KIK	0.9	1/08/2022	31/08/2022	OPT	24-HOURS
4665728	SWET	KIK	BEN	0.1	1/08/2022	31/08/2022	OPT	24-HOURS

Figure 71   Sample Base Loading FTRs Data in CSV Format

The following information is available from the base loading FTR file:

- **FTR ID** – The ID of the previously awarded FTR.
- **Market Participant** – The name of the Market Participant who owns the FTR
- **Source** – The name of the FTR source.
- **Sink** – The name of the FTR sink.
- **MW** – The MW associated with the FTR.
- **HedgeType** – The Hedge Type of the FTR (Obligation, Option).
- **Class** – 24-HOURS time-of-use

Source	Sink	Class	Capacity
BEN	WKM	24-HOURS	454.8
RDF	KIK	24-HOURS	382.8
RDF	INV	24-HOURS	382.8
HAY	BEN	24-HOURS	413.8
INV	ISL	24-HOURS	435.5
OTA	RDF	24-HOURS	382.6
KIK	BEN	24-HOURS	408.9
ISL	RDF	24-HOURS	382.6

Figure 72   Sample Capacity Download File in CSV Format

The following information is available from the capacity file:

- **Source** – The name of the source in the FTR capacity calculations.
- **Sink** – The name of the sink in the FTR capacity calculations.
- **Class** – 24-HOURS time-of-use
- **Capacity** – MW capacity.

Name	Type	Class	PriceNode	BusName	participationFactor
BEN	Hub	24-HOURS	P-BEN	BEN/BEN_220	100
HAY	Hub	24-HOURS	P-HAY	HAY2/HAY220A	100
INV	Hub	24-HOURS	P-INV	INV/INV220A1	100
ISL	Hub	24-HOURS	P-ISL	ISL2/ISL220A	100
KIK	Hub	24-HOURS	P-KIK	KIK/KIK_220	100
OTA	Hub	24-HOURS	P-OTA	OTA/OTA220B1	100
RDF	Hub	24-HOURS	P-RDF	RDF/RDF220A1	100
WKM	Hub	24-HOURS	P-WKM	WKM/WKM220A1	100

Figure 73   Sample Source/Sink Data in CSV Format

The following information is available from the source/sink file:

- **Name** – The name of the Source/Sink.

- **Type** – The source/sink type (Generator Node, Load Node, Load Zone, Hub, Fixed Aggregate, Interface, Loop Flow Node, Pseudo-Tie Generator Node, Pseudo-Tie Load Node, Demand Node Type 1, Demand Node Type 2, External Asynchronous Resource Node, and Stored Energy Resource). ***Typically, the EMS FTR auctions will use "HUB" type only.***

- **Class** – States whether the source/sink is valid during the time of use (24-HOURS)

- **PriceNode** – The name of the elemental Pnode associated with the source/sink.

- **BusName** – The name of the bus associated with the source/sink associated with the source/sink. This bus name is the augmented name from the PSS/E file.

- **Participation Factor** – Factor allocated to PriceNode(s) constituting the source/sink

Download and View (Auction) Results Data

By selecting an Auction option from the Market Type and Term dropdown list within the Results tab, the user is presented with a screen shown in Figure 74. The user must select both a particular Market Term (Primary Auction or Variation Auction) from a drop-down list and the specific Auction Market name from the second drop down list.
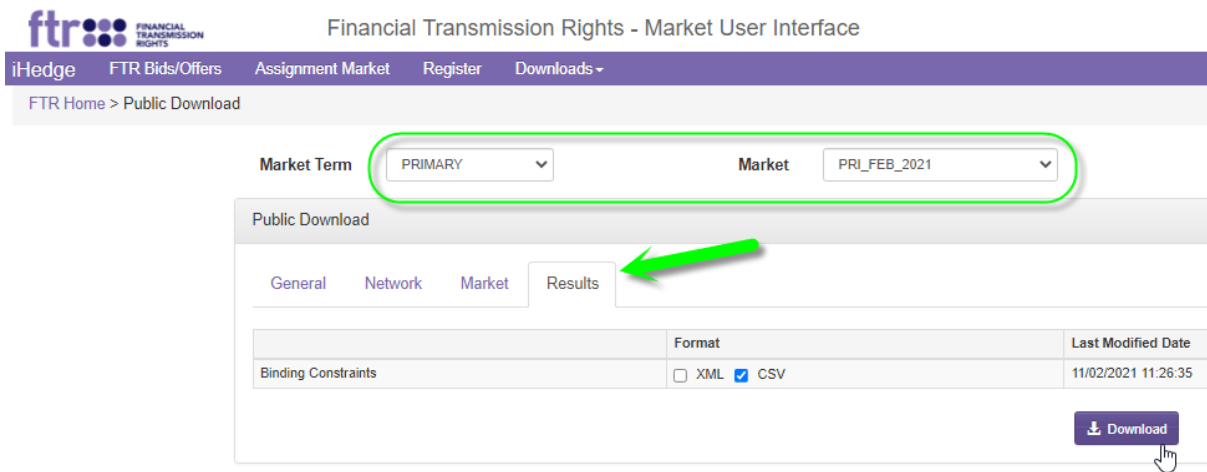
Figure 74   Auction Results Available from the Public FTR Interface

To download the Auction Binding Constraints data, check the box for XML and/or CSV formats and click the **Download** button. The download files will be in a zipped format, which can be viewed using an un-compression tool.

Sample download files of Auction Binding Constraints in CSV format are shown in Figure 75.

DeviceName	DeviceType	Direction	Limit	Flow	Violation%	Contingency	Class	MarginalCost
AVI.BEN.1	Line	To-From	212	-67.5	0	CTG_986171	24-HOURS	39.06
HVDC_S	Nomogram		541.8	173.5	0	Base Case	24-HOURS	0.55
BEN.TWZ.1	Line	From-To	423.7	123.5	0	CTG_985805	24-HOURS	0.52
BPE.PRT.2	Line	To-From	288.4	-108.2	0	CTG_985953	24-HOURS	10.61

Figure 75   Sample Auction Binding Constraints in CSV Format

The following information is available from the binding constraint file:
- **DeviceName** – The name of the congested device

- **DeviceType** – The type of device in the binding constraint. It can be transmission line (Line), transformer or nomogram.

- **Direction** – Direction of MW flow on the congested device. It can take on the values of "From_To", "To_From".

- **Limit** – The flow limit of the binding constraint. If the limit goes soft (i.e., relaxed), the flow on this binding constraint may be larger than its corresponding limit.

- **Flow**: - The MW flow on the device.

- **Violation %** – Percentage violation of the limit. For hard constraints, this value will be zero and for soft constraints, this value will be a positive number.

- **Contingency** – The name of the contingency associated with the constraint that is binding.

- **Class** – The time period of use – 24-HOURS where the constraint is binding

- **Marginal Cost** – The clearing or shadow price of the binding constraint in $/MWh

Available Private Information on the FTR Download Interface

The FTR Private download interface is available to all EMS Market Participants and presents confidential information pertinent to a particular Market Participant.

After an auction is completed, users can:

1. Download and view Auction results (FTRs) in CSV and XML formats

Download and View Private Auction Results

On the Private Downloads interface, under the Results tab, by selecting an Auction market with the Market Term dropdown menu, choosing the appropriate market name, the user is presented with the following display for the Private Bid and FTR Data as shown in

Figure 76.

Figure 76   Private Auction Result Downloads

To download/view the private auction results, check the box associated with the Bids and Offers Results data category as shown in

Figure 76 for XML and/or CSV formats and click the **Download** button to download the auction results data in text file(s) of the chosen formats. The download will be in a zipped format, which can be viewed using an unzipping tool. A sample private auction results list in **CSV** format is shown in Figure 77.

Figure 77 Sample Private Bids and Offers data in CSV Format

BID_ID	FTR_ID	Bid Desc	Category	Portfolio	AssetOw	Source	Sink	StartDate	EndDate	HedgeTy	Type	Class	Awarded	Clearing	Bid MW	Bid Price	Bid MW	Bid Price	Bid MW	Bid Price	Bid MW	Bid Price	Bid MW	Bid Price	Bid MW	Bid Price
510081	510741	1	PTP	MERI_20	MERI	OTA	HAY	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	-0.73	0	10	5	9	6	8	7	6	8	5	9	3
510082	510742	2	PTP	MERI_20	MERI	OTA	BEN	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	0.22	0	10	5	9	6	8	7	6	8	5	9	3
510083	510743	3	PTP	MERI_20	MERI	OTA	ISL	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	0.18	0	10	5	9	6	8	7	6	8	5	9	3
510084	510744	4	PTP	MERI_20	MERI	OTA	INV	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	-0.1	0	10	5	9	6	8	7	6	8	5	9	3
510085	510745	5	PTP	MERI_20	MERI	HAY	OTA	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	0.73	0	10	5	9	6	8	7	6	8	5	9	3
510086	510746	6	PTP	MERI_20	MERI	HAY	BEN	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	18.8	0.96	0	10	5	9	6	8	7	6	8	5	9	3
510087	510747	7	PTP	MERI_20	MERI	HAY	ISL	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	18.9	0.92	0	10	5	9	6	8	7	6	8	5	9	3
510088	510748	8	PTP	MERI_20	MERI	HAY	INV	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	0.63	0	10	5	9	6	8	7	6	8	5	9	3
510089	510749	9	PTP	MERI_20	MERI	BEN	OTA	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	-0.22	0	10	5	9	6	8	7	6	8	5	9	3
510090	510750	10	PTP	MERI_20	MERI	BEN	HAY	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	-0.96	0	10	5	9	6	8	7	6	8	5	9	3
510091	510751	11	PTP	MERI_20	MERI	BEN	ISL	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	-0.04	0	10	5	9	6	8	7	6	8	5	9	3
510092	510752	12	PTP	MERI_20	MERI	BEN	INV	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	-0.32	0	10	5	9	6	8	7	6	8	5	9	3
510093	510753	13	PTP	MERI_20	MERI	ISL	OTA	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	-0.18	0	10	5	9	6	8	7	6	8	5	9	3
510094	510754	14	PTP	MERI_20	MERI	ISL	HAY	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	-0.92	0	10	5	9	6	8	7	6	8	5	9	3
510095	510755	16	PTP	MERI_20	MERI	ISL	INV	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	-0.28	0	10	5	9	6	8	7	6	8	5	9	3
510096	510756	15	PTP	MERI_20	MERI	ISL	BEN	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	0.04	0	10	5	9	6	8	7	6	8	5	9	3
510097	510757	18	PTP	MERI_20	MERI	INV	HAY	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	-0.63	0	10	5	9	6	8	7	6	8	5	9	3
510098	510758	17	PTP	MERI_20	MERI	INV	OTA	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	0.1	0	10	5	9	6	8	7	6	8	5	9	3
510099	510759	20	PTP	MERI_20	MERI	INV	ISL	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	0.28	0	10	5	9	6	8	7	6	8	5	9	3
510100	510760	19	PTP	MERI_20	MERI	INV	BEN	1/03/2016	31/03/2016	OBL	BUY	24-HOUR	19	0.32	0	10	5	9	6	8	7	6	8	5	9	3
510101	510761	22	PTP	MERI_20	MERI	OTA	BEN	1/03/2016	31/03/2016	OPT	BUY	24-HOUR	4.8	9.04	0	10	5	9	6	8	7	6	8	5	9	3
510102	510762	21	PTP	MERI_20	MERI	OTA	HAY	1/03/2016	31/03/2016	OPT	BUY	24-HOUR	6.5	6.89	0	10	5	9	6	8	7	6	8	5	9	3
510103		24	PTP	MERI_20	MERI	OTA	INV	1/03/2016	31/03/2016	OPT	BUY	24-HOUR	0	15.15	0	10	5	9	6	8	7	6	8	5	9	3
510104		23	PTP	MERI_20	MERI	OTA	ISL	1/03/2016	31/03/2016	OPT	BUY	24-HOUR	0	10.26	0	10	5	9	6	8	7	6	8	5	9	3
510105	510765	26	PTP	MERI_20	MERI	HAY	BEN	1/03/2016	31/03/2016	OPT	BUY	24-HOUR	13.5	2.14	0	10	5	9	6	8	7	6	8	5	9	3

The following information is available from this file:

- **BID_ID** – The ID of the auction bid

- **FTR_ID** – The unique id of the PTP FTR associated within the Bid. The FTR_ID is valid only when Awarded MW is greater than zero MW.

- **Category**– Flag denoting the type of the FTR – Point-to-Point (PTP)

- **Portfolio** – The name of the portfolio containing the bids

- **AssetOwner** – The name of the Market Participant associated with the PTP FTR

- **Source** – The name of the source associated with the PTP FTR

- **Sink** – The name of the sink associated with the PTP FTR

- **StartDate** – The starting date that the FTR is valid

- **EndDate** – The ending date that the FTR is valid

- **HedgeType** –FTR type – OBL (Obligation) or OPT (Option).

- **Type** – States that the type of the bid – BUY or SELL

- **Class** – 24-HOURS time-of-use

- **AwardedMW** – The MW amount of the FTR awarded to the nearest tenth of a MW.

- **ClearingPrice** – The clearing price of the FTR awarded in $/MWh. The clearing price may be positive or negative.

- **MW** – The bid MW amount (part of the bid curve)

- **PricePerMWh** – The bid price in $/MWh (part of the bid curve).

11. FTR Organisation and Users

Every participating FTR organisation has a portal account that represents the organisation. An organisation represents a Market Participant or Entity on whose behalf the FTR will be awarded in the FTR Market. The organisation that needs to participate in the FTR Market must go through a pre-approval process. The portal account representing the organisation is automatically created by the EMS FTR Manager once registration with the Clearing Manager is complete. After creating the organisation portal account, a super user is assigned to the organisation portal account. The super user is responsible for administering the regular users without any intervention from the EMS Portal administrator. The Super user has the required privileges to create and manage the portal accounts of the regular users within his or her organisation. By managing the users of the organisation and controlling who can visit the organisation account, the super user can guarantee the confidentiality of the FTR data.

Super-User – Portal Sign-up

Once pre-approved, the organisation account is created, and a super-user is assigned to the organisation account. The super user portal account is not yet active and requires action from the super user to complete the portal account creation process. The super-user is notified via email about the new portal account as shown in Figure 78.
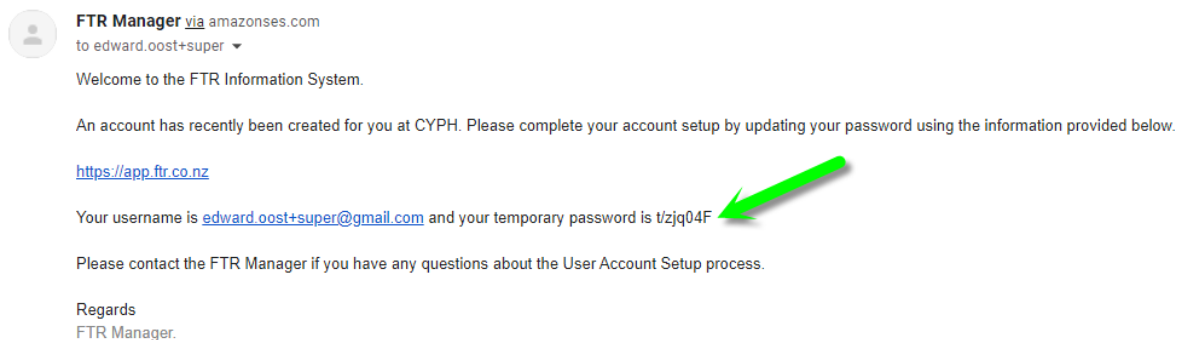

FTR Manager via amazonses.com
to edward.oost+super ▾

Welcome to the FTR Information System.

An account has recently been created for you at CYPH. Please complete your account setup by updating your password using the information provided below.

https://app.ftr.co.nz

Your username is edward.oost+super@gmail.com and your temporary password is t/zjq04F

Please contact the FTR Manager if you have any questions about the User Account Setup process.

Regards
FTR Manager.

Figure 78 Email notification about new account for the super-user

The super user must sign-in to the portal using the registered email address and the temporary password to gain access to the portal and to create regular users in the system as shown in Figure 79

Figure 79 Super user and temporary password

The super user must change the temporary password generated by system. The new password must meet the password policy set the by EMS FTR manager.

Figure 80 New Password for the super user

After the successfully changing the temporary password, the super user is sent a code via txt to confirm authentication as shown in Figure 81 SMS MFA Authentication.

Figure 81 SMS MFA Authentication

After successfully confirming via MFA, the super user is directed to the portal as shown in Figure 82.

Figure 82 Super User view of the FTR portal

Super User – Create Regular Organisation Users

The super user can create regular users within their organisation. The super user cannot assign existing public users to an organisation due to security concerns.

After sign-in as shown in Figure 82, the super user can access the User Management screen. The User Management screen is shown below in Figure 83
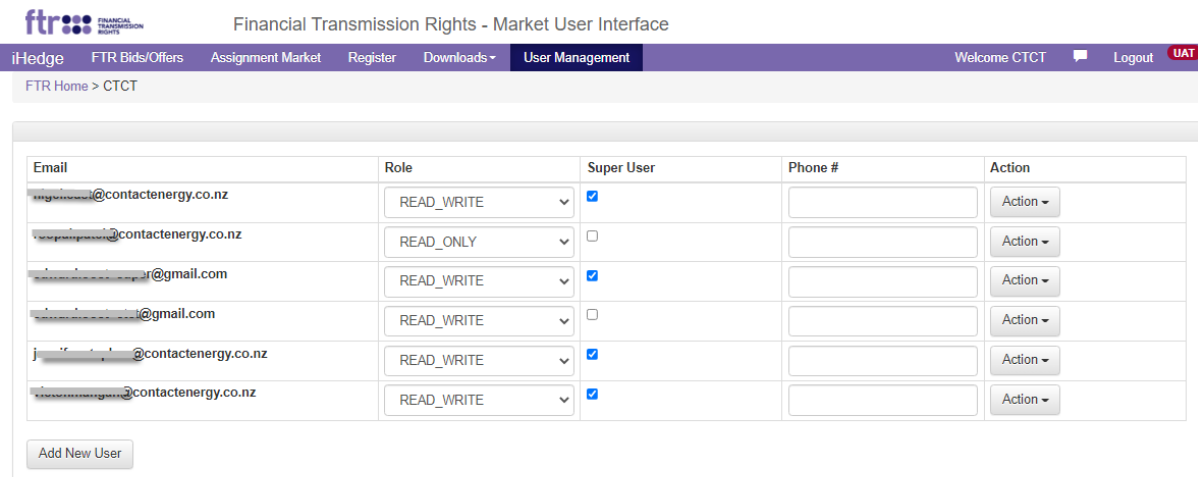
Figure 83 User Management screen

The super user can create or manage users within that organisation. The super user can add a regular user by selecting "**Add new user**" as shown in Figure 84. The super user can add any combination of READ_WRITE, READ_ONLY and SUPER_USER. By adding a new user, a new portal account will be created in the system. The regular user then can login to the portal using the newly created account.

The super user can create any number of regular users. The information required to create a regular user account is the following:

- Email address (must be unique within the FTR Portal)

- Role

- Super User (yes/no)

- Cell phone number see Figure 85 (used for Multi Factor Authentication)

After entering the information about the user and saving the information by clicking the "**Add New User**" button, the new user will be notified via email about the new portal account with a temporary password. The temporary password is generated by the system and not by the super user. The new user will be asked to reset the password during the initial sign-up process.

Figure 84 Adding a Regular User

Figure 85 Creating a user with MFA enforced

All users will be presented with a screen (Figure 88) to input a verification code that they will receive via txt message as shown in Figure 87.
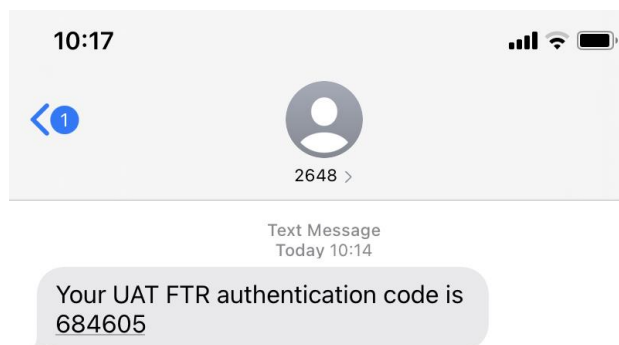

Figure 86 MFA Verification

Figure 87 MFA message

Regular User – Access i-HEDGE MUI Application

The **FTR Bids/Offers, Assignment Market and Downloads** pages are accessible to users who are member of any FTR Participant organisation. The **Register** is accessible by any portal user who is not associated with any FTR Participant organisation.
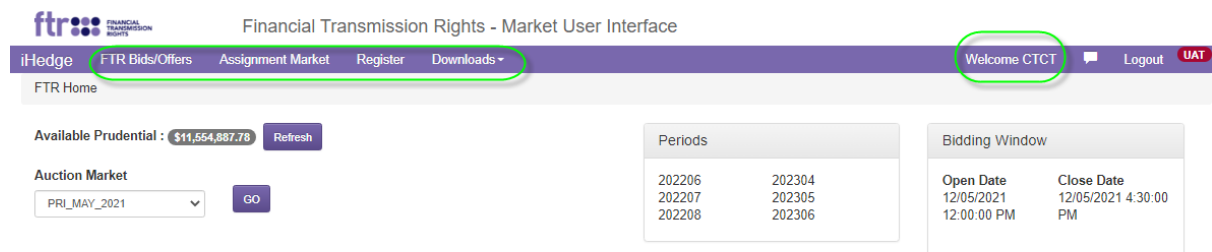

Figure 88 Access to the i-HEDGE application

The **My Org** page takes the user to the organisation specific site. The name of the organisation is displayed on the screen. Based on the assigned roles of **ROLE_MP_RO** or **ROLE_MP_RW**, the i-HEDGE application will enable users to simply view portfolios or submit.