



Member Impacting Program Overview

Western EIS Market (WEIS)

Version 1.3

REVISION HISTORY

DATE OR VERSION NUMBER	AUTHOR	CHANGE DESCRIPTION	COMMENTS
1.0	SPP	Initial version	
1.1	SPP	Deleted Historical Tie Flow from the Public Data / Member Requirements table; updated Training information; added section on Market Monitoring Portal	
1.2	SPP	Updated for MMP Release 2.0.0.n – minor corrections and enhancement	
1.3	SPP	MMP - Details on addition of column for generator cost fuel attribute field	

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EXECUTIVE SUMMARY

This initiative is being managed as a program, a set of related projects, to obtain visibility and other benefits not available from managing the projects independently. This document will serve as the member-impacting program overview (MIPO) for all projects within the program's scope versus having separate MIPOs for each.

Certain elements of the MIPO will apply across all projects within the program, as described in the [program-level information](#) section below. Other components will be specific to individual projects, as described in the [project-level information](#) section below.

NOTE

In this document, the term "members" refers to any and all stakeholders, which could include market participants, members, customers, transmission owners, vendors, etc.

ABOUT THIS PROGRAM

The Western Energy Imbalance Service market (WEIS) program began in September 2019. Phases include requirements and design, testing (includes SPP internal testing, market participant connectivity testing, market trials, parallel operations) and implementation. Implementation will be Feb. 1, 2021.

PROGRAM-LEVEL INFORMATION

Certain key information is needed at the program level only. Other information may be needed at both the program and project levels. What follows is program-level information that may be beneficial to all participants of the program.

BUSINESS IMPACT

The Western Energy Imbalance Service market (WEIS) will centrally dispatch participating resources' energy on an intra-hour, five-minute basis. This centralized dispatch efficiently ensures the reliability of the transmission system and minimizes production costs to satisfy demand obligations across the market footprint.

Additional program information may be found in the WEIS Implementation Program Overview on spp.org: [here](#).

BUSINESS FUNCTIONS IMPACTED

- Market participant registration
- Model coordination
- Markets and settlements processes and functions
- Congestion management

COMMUNICATIONS

LIAISONS

- Testing liaisons are discussed under the [testing section](#) of this document.

MIPO AND PROGRAM/PROJECT DOCUMENTATION

All project communication and information will be posted to the SPP Change Working Group Project Documentation folder <https://spp.org/spp-documents-filings/?id=230418>.

This MIPO will be updated with any new information. For all updates, a redline version will be posted to the project documentation folder, and the Change Working Group (CWG) will be notified.

PROGRAM COMMUNICATION

At any time, members can ask questions using SPP's [Request Management System](#) (RMS). Program-level questions, including any questions for which there is not a project-specific Quick Pick, can be submitted using the "Project Inquiries" Quick Pick and this program's subject option. RMS link: <https://spprms.issuetrak.com/login.asp>

If a new user ID is needed for the RMS, click on that link and follow the directions for "Register Now."

SubType 1 choices are: WEIS General Inquiry, WEIS Onboarding, Market Trials.

The screenshot shows the 'Submit Request' interface. On the left is a sidebar with the following items: My SPP RMS, **Submit Request**, Search Requests, Unassigned Requests, Calendar, Knowledge Base, Reports, Closing Requests, RMS Metrics, and SPP Website. The main content area is titled 'Submit Request' and contains a 'Submit Request' button. Below the button are several form fields: 'Quick Pick' (empty dropdown), '* Class: PMO' (dropdown), 'Request Status: Open' (dropdown), '* Request Type: WEIS Market' (dropdown), 'Subtype 1:' (empty dropdown), and 'Subtype 2:' (empty dropdown).

TRAINING

Member training will be coordinated at the program level, as follows.

TRAINING ASSUMPTIONS

- All member companies will identify personnel to receive project-related training and/or documentation.
- All member companies will use the [SPP Learning Center \(LMS\)](#) to register for any project-related training sessions, if applicable.
- SPP customer training will provide learning opportunities that aid understanding, but each entity will be expected to certify performance readiness.

- Training courses and materials are only available to those parties that have signed the Western Joint Dispatch Agreement (WJDA). Please email spprms@myissuetrak.com to resolve any access concerns.

TRAINING OVERVIEW

Training for WEIS market participants will be offered in phases that correspond to project timeline.

PHASE ONE

This phase of training will include a virtual instructor-led training (VILT) session titled "Introduction to the Western Energy Imbalance Service Market (WEIS)." This course is available as an eLearning module in the [SPP Learning Center \(LMS\)](#).

PHASE TWO

This phase of training will include a series of virtual instructor-led training (VILT) sessions focused on specific market features. The VILT sessions were delivered in mid-April 2020 and were recorded for participants to review at a later time as eLearning modules. The schedule for releasing the courses is listed below:

<u>Course Title</u>	<u>Release Date</u>
WEIS Up: Energy Imbalance and Market Execution	May 21, 2020
WEIS Up: Market Monitoring	May 21, 2020
WEIS Up: Settlements	May 21, 2020
WEIS Up: Congestion Management	To be determined

Further updates to this document as well as email announcements will notify participants when the above modules are available in the [SPP Learning Center \(LMS\)](#).

PHASE THREE

This phase of training will include a series of virtual instructor-led training (VILT) sessions focused on specific market scenarios. The goal of this phase of training is to prepare day-to-day market staff to perform various tasks in the WEIS market.

These courses, collectively known as the Word to the WEIS VILT series, are designed to help participants understand market operations at a task-based level. Learners will have the opportunity to participate in scenario exercises to help build their understanding of the WEIS market. Specific objectives and descriptions for each course are available in the [SPP Learning Center \(LMS\)](#).

Please note the specific dates and times for these VILT sessions:

Course Title	Session Dates	Session Time
Word to the WEIS: Resource Offer Data	Tuesday, July 28, 2020	2:00 p.m. – 4:00 p.m. CT
	Tuesday, August 4, 2020	9:00 a.m. – 11:00 a.m. CT
Word to the WEIS: Seize the Operating Day—Part 1	Wednesday, July 29, 2020	9:00 a.m. – 11:00 a.m. CT
	Wednesday, August 5, 2020	2:00 p.m. – 4:00 p.m. CT
Word to the WEIS: Seize the Operating Day—Part 2	Thursday, July 30, 2020	2:00 p.m. – 4:00 p.m. CT
	Thursday, August 6, 2020	9:00 a.m. – 11:00 a.m. CT
Word to the WEIS: Charge Type Deep Dive	Wednesday, July 29, 2020	2:00 p.m. – 4:30 p.m. CT
	Wednesday, August 5, 2020	9:00 a.m. – 11:30 a.m. CT
Word to the WEIS: Native Load Hedging and the EIS Charge Type	Thursday, July 30, 2020	9:00 a.m. – 11:30 a.m. CT
	Thursday, August 6, 2020	2:00 p.m. – 4:30 p.m. CT

TESTING

SPP will conduct its standard internal test stages for all new logic. There is no market participant involvement in these internal test phases.

- Factory acceptance test (FAT)
- Site acceptance test (SAT)
- System integration test (SIT)
- Functional integration test (FIT)
- Performance

SPP will conduct market participant (MP) testing during the market trials phase of the project. Market participants will participate in testing the changes that are MP facing or impacting. These systems will include markets and settlements. SPP has provided a WEIS market trials test approach document, which is an outline for the approach for validating the technical and

business readiness for the WEIS market. This document as well as test scenarios, scorecards and other documentation is located in the [WEIS Market Trials folder](#) on SPP.org.

TESTING ASSUMPTIONS

- Participants will complete connectivity testing to the appropriate test environments before testing in that environment begins.
- Member company staff who are participating in the testing will have been trained on the systems they are testing before testing begins.
- Testing liaisons will be responsible for coordinating testing and reporting progress and issues to SPP.
- SPP will provide scenarios/test scripts/documentation to assist the MPs in development of test strategies and specific test plans.

TESTING CALENDAR

SPP has scheduled the market trials testing period to begin July 1, 2020, and conclude Jan. 14, 2021. Market trials testing includes running the Western Real-Time Balancing Market (WRTBM) and calculating dispatch and prices. SPP will conduct market trials primarily in its member test environment (MTE), with the exception of parallel operations, which will take place in SPP’s production environment (PRD).

Below is the planned market trials calendar:

Date	Party	Action
June 3, 2020	SPP Members	Member testing kick-off call Registration available on SPP.org
June 1, 2020 – June 30, 2020	Members	Members set up web services application programming interfaces (APIs) and listeners in MTE, local security administrator (LSAs) set up users with certificates and roles in MTE
July 1, 2020 – July 31, 2020	SPP Members	Connectivity testing in MTE

July 20, 2020 – Jan. 18, 2021	SPP Members	Weekly WEIS market trials test communication calls
Aug. 3, 2020 – Nov. 20, 2020	SPP Members	Structured (Tuesday and Thursday each week) and Unstructured (Monday, Wednesday and Friday each week) testing in MTE
Aug. 3, 2020 – Nov. 20, 2020	SPP Members BAs West RC	Deployment testing in MTE (Monday, Tuesday and Friday each week)
Nov. 24, 2020 – Dec. 9, 2020	Members	Members set up APIs and listeners in production, LSAs set up users with certificates and roles in production
Nov. 24, 2020 – Dec. 9, 2020	SPP Members	Production connectivity testing and verification
Dec. 10, 2020 – Jan. 14, 2021	SPP Members	Parallel operations testing in production
Feb. 1, 2021	SPP Members	WEIS Market goes live

NOTE

Due to the complexity of this program and the necessity for a broad range of member testing, **SPP will periodically publish a summary report of all members’ testing participation.**

PROGRAM ASSUMPTIONS

None identified at this time.

PROGRAM RISKS

No risks for participants identified at this time.

IMPLEMENTATION/BACK-OUT PLAN

To be developed.

ADDITIONAL PROGRAM DOCUMENTATION

Several reference documents are available to provide additional information on SPP environment connectivity, external data points, and user and programmatic interfaces with SPP.

DOCUMENT TITLE	BREADCRUMB	DESCRIPTION
SPP Connectivity Specifications	SPP Documents > Org Group Documents > Change Working Group > Reference Documents > Technical Reference Documents > SPP Environments	Connectivity information such as certificate information, URLs, etc. for SPP environments.
SPP External Technical Documents Inventory	SPP Documents > Org Group Documents > Change Working Group > Reference Documents > Technical Reference Documents	Listing of external-facing technical documentation available to participants.
Portal Application Role Reference Guide	SPP Portal > Administration > User Administration > Menu > LSA Documentation	Information on the roles available for exchanging data with SPP systems. This information is used by LSAs to assign roles to users and systems in the portal.
SPP UI Guide Inventory	SPP Documents > Org Group Documents > Change Working Group > Reference Documents > Technical Reference Documents	Listing of user interface guides available to participants.
WEIS External Stakeholder Data Points	SPP Documents > Org Group Documents > Change Working Group > Reference Documents > Technical Reference Documents	Listing of all data points that WEIS stakeholders will receive and/or have access to via SPP systems and interfaces

FREQUENTLY ASKED QUESTIONS

A list of frequently asked questions (FAQ) can be found in [Appendix A](#) of this document.

SUMMARY OF TIMELINE

DATE	RESPONSIBLE PARTY	ACTION
Sept. 16, 2019- April 30, 2020	SPP	Requirements, design, build
May 29, 2020	SPP	Publish MP requirements via MIPO revision
TBD	SPP	Publish MP specifications if necessary via MIPO revision, if needed
June 2, 2020	SPP	Publish MP testing details via MIPO revision
July 1, 2020- Jan. 14, 2021	Member	MP testing phase – See testing section above
Week of July 13, 2020	SPP / Member	MP training
Feb. 1, 2021	SPP / Member	Implementation

PROJECT-LEVEL INFORMATION

MARKETS

SERVICE IMPACT

AFFECTED?	SERVICES IMPACTED BY CHANGES
	Eastern Interconnection (Integrated Marketplace)
	Western Reliability Coordination

X

Western Energy Imbalance Services Market

BUSINESS IMPACT

WEIS participants will interact with SPP systems similarly to the way SPP Integrated Marketplace (IM) participants interact, using the functionality and framework already in place. The limited changes made to SPP systems to implement the WEIS Market require no changes for IM participants. There are no business impacts to the Integrated Marketplace or its participants. WEIS participants, which may include market participants, transmission owners or transmission operators in the Western Area Power Administration-Colorado-Missouri Region and Western Area Power Administration-Upper Great Plains Region (WAPA-WACM and WAPA-UGPM), will experience business impacts similar to a new participant entering a market. WEIS participant's business process and system impacts include registration of resources and loads, resource offer market submissions, supply adequacy analysis responsiveness, settlements interactions and operations. The WEIS Market will dispatch resources registered in the WEIS and publish a locational market price every five minutes to balance the footprint and settle imbalance energy.

USERS IMPACTED

All WEIS market participants. Integrated Marketplace participants are not impacted.

BUSINESS FUNCTIONS IMPACTED

- Offer submission
- Market notifications

TECHNICAL IMPACT

The WEIS program market participant technical impacts for the real-time WEIS market comprise three broad categories:

- Connectivity — Market participants and their IT vendors will connect to SPP systems in the member testing and production environments during the MP connectivity phase of market participant testing in MTE and before the start of parallel operations in production. See the link below in the reference table for more information on the detailed steps for establishing connectivity with SPP.
- Application programming interface (API) — Market participants and their IT vendors will develop APIs to allow their individual software solutions to interface with SPP's real-time WEIS market. Market participants and their IT vendors will use the SPP WEIS Market WSDL and XSD provided in the reference table below for development of systems;

additionally, developers will need the data exchange guide and business validation documents provided in the reference table below.

- User interface (UI) — Market participants may choose to use the SPP Market User Interface in addition to or as replacement for custom developed application programming interface. The SPP Market User Interface guide provides helpful information to users on how to submit, query and filter data.

SPP SYSTEMS/PROCESSES IMPACTED

SPP WEIS Markets UI/API — WEIS market participants will interface with the SPP WEIS market system via the markets UI/API to submit offers, query market results and other activities as described in the SPP WEIS Markets Data Exchange Guide.

SPP WEIS Markets Notifications — The SPP WEIS market system will send XML notifications to WEIS market participants for dispatch, Western Real-Time Balancing Market (WRTBM) pricing, supply adequacy and other activities as described in the SPP WEIS Markets Data Exchange Guide.

ANTICIPATED MEMBER SYSTEMS/PROCESSES IMPACTED

Vendor or internally developed markets interface for submissions, queries and notifications.

MEMBER REQUIREMENTS

WEIS market participants will need to implement business processes and, if applicable, application systems to exchange data with the SPP Market Operations System. To aid in the development of those processes and system changes, the following documentation is published with details on how to exchange data (e.g., offers, bids) with SPP.

DOCUMENT	LOCATION	DESCRIPTION
WEIS Markets WSDLs & XSDs	SPP Documents > Org Group Documents > Change Working Group > Reference Documents > Technical Reference Documents > Technical Specifications > Tech Specs > Future Tech Specs	Technical specifications for WEIS Market APIs
SPP WEIS Markets Data Exchange (UI/API) Validations	SPP Documents > Org Group Documents > Change Working Group > Reference Documents > Technical Reference	A reference document to provide WEIS participants a list of validations that the Market Operating system (MOS) will

	Documents > Business Rule Guides	perform upon submission or query of market data.
SPP WEIS Markets UI Guide	SPP Documents > Org Group Documents > Change Working Group > Reference Documents > Technical Reference Documents > User Interface Guides	A reference document to provide WEIS participants a guide for submitting and viewing data through the Markets User Interface.

SETTLEMENTS

SERVICE IMPACT

AFFECTED?	SERVICES IMPACTED BY CHANGES
	Eastern Interconnection (Integrated Marketplace)
	Western Reliability Coordination
X	Western Energy Imbalance Services Market

BUSINESS IMPACT

USERS IMPACTED

Western EIS market participants, meter agents and shadow settlement vendors

BUSINESS FUNCTIONS IMPACTED

With the implementation of the Western Energy Imbalance Service (WEIS) Market, the Settlement Management System (SMS) will include a new settlement category for WEIS Market. Within this new category, the system will be configured to consume new source data inputs, perform new settlement calculations and output new charge types to produce settlement reports and invoices for the WEIS Market. The system will also be configured to provide settlement users the ability to register for notifications as different settlement activities occur for the WEIS Market.

A settlement calendar will be provided for the WEIS Market and accessible on the SPP Portal, as well as accessible via API. The settlement calendar provides information on meter submission due dates, settlement posting dates, invoice posting dates, invoice due dates and invoice pay dates.

The following settlement users will be impacted by the WEIS Market:

WEIS market participants/asset owners

New settlement determinant reports, meter reports, statements and invoices will be created and accessible to the WEIS market participants on the SPP Portal (UI), or via an API. The LSA (local security admin) representing the MP will be responsible for granting user access to the various settlement reports and functions on the SPP Portal.

Settlement determinants and charge types will be mapped to the settlement reports based on the MP and asset owner (AO) relationships established by the WEIS Commercial Model. Market participants are responsible for designating a meter agent for submission of meter data for their defined meter data submittal locations. This relationship is also defined in the WEIS Commercial Model.

Market participants will be the financially responsible entity in the WEIS Market. MPs will be responsible for accessing their invoice information from the SPP Portal, also available via an API, on a weekly basis and remitting payment to SPP for any amounts owed by the due date.

WEIS meter agents

WEIS meter agents will be responsible for submitting meter data for each operating day settled in the WEIS Market via a new WEIS Meter Data Submittal application on the SPP Portal, or via an API. Meter reports will be provided on the SPP Portal to assist meter agents in identifying potential meter data issues: Meter Report Card, Interchange Report and Calibration Report. Meter agents, as well as the market participants they represent, are expected to utilize these reports and the provided notifications to identify and resolve issues with their meter data submissions. Specific due dates for meter data submissions are defined by settlement type in the [WEIS Market Protocols](#). Meter data due dates are also provided on the WEIS settlement calendars posted to the SPP Portal.

WEIS shadow settlement vendors

Shadow settlement vendors that plan to shadow the settlement calculations associated with the new WEIS Market will need to configure their systems to consume the new WEIS determinants via the new WEIS determinant reports posted to the SPP Portal and accessible via an API. The WEIS determinant reports will provide all the necessary data needed in order to shadow calculate the WEIS charge types. All settlement calculations for the WEIS Market are fully defined in the [WEIS Market Protocols](#).

TECHNICAL IMPACT

SPP SYSTEMS/PROCESSES IMPACTED

- SPP Settlement Management System (SMS) will be modified to support WEIS Market Settlements.
- SPP Centralized Modeling Tool (CMT) will be modified to include all WEIS Market modeling data needed to support WEIS Market Settlements.
- SPP accounting system will be modified to account for the new WEIS Market Settlements statements and invoices.
- SPP Credit Management System (CMS) will be modified to account for the new WEIS Market Settlements statements and invoices.
- SPP Portal menu and pages will be created to support WEIS Market Settlements UIs.

ANTICIPATED MEMBER SYSTEMS/PROCESSES IMPACTED

WEIS Market Settlement APIs and XML specifications will be created with the implementation of the WEIS Market Settlements in the existing Settlement Management System. To exchange data with the Settlement Management System, members must implement system and/or process changes to adhere to the new API and XML specifications.

WEIS asset owners/market participants

WEIS asset owners and market participants utilizing APIs must modify their systems accordingly to interface with the SMS as described in the [member requirements](#) section. We anticipate the following API web services. More may be included with the project as additional updates are identified.

- WEIS meter data
- WEIS settlements reports
- WEIS notifications
- WEIS calendar

WEIS meter agents

WEIS meter agents utilizing APIs must modify their systems accordingly to interface with the SMS as described in the [member requirements](#) section. We anticipate the following API web services. More may be included with the project as additional updates are identified.

- WEIS meter data
- WEIS settlements reports
- WEIS notifications
- WEIS calendar

WEIS shadow settlement systems

WEIS shadow settlement systems must be created appropriately to account for the new WEIS settlements APIs.

MEMBER REQUIREMENTS

WEIS market participants will need to implement business processes and, if applicable, application systems to exchange data with the SPP Settlement Management System. To aid in the development of those processes and system changes, the following documentation is published with details on how to exchange data (e.g., WEIS meter data submissions, retrieve WEIS statements and invoices) with SMS.

DOCUMENT	LOCATION	DESCRIPTION
WEIS Settlement Management System Technical Specifications	SPP.org > SPP Documents > Org Group Documents > Change Working Group > Reference Documents > Technical Reference Documents > Technical Specifications > Tech Specs > Future Tech Specs	Settlement Management System Web Services Data Exchange Guide for WEIS Market functions.
WEIS Settlement User Interfaces Guide	SPP.org > SPP Documents > Org Group Documents > Change Working Group > Reference Documents > Technical Reference Documents > User Interface Guides > Future UI Guides	This guide describes how to submit, and if applicable, approve input data, register for event notifications, view reports and settlement results (e.g., invoices, statements) via UIs available in the SPP Portal.
WEIS Settlements Public Data	SPP.org > SPP Documents > Org Group Documents > Change Working Group > Reference Documents > Technical Reference Documents > Technical Specifications > Public Data > Future Public Data Tech Specs	Reference guide for WEIS Settlements public data offerings such as settlement calendars and rates.
WEIS Settlements Member Data Exchange (UI/API) Validations	SPP.org > SPP Documents > Org Group Documents > Change Working Group > Reference Documents >	Will be created with this project to provide members with a list of validations the SMS will perform upon submission and

DOCUMENT	LOCATION	DESCRIPTION
	Technical Reference Documents > Business Rule Guides	query (download) of settlement data.

PUBLIC DATA

SERVICE IMPACT

AFFECTED?	SERVICES IMPACTED BY CHANGES
	Eastern Interconnection (Integrated Marketplace)
	Western Reliability Coordination
X	Western Energy Imbalance Services Market

BUSINESS IMPACT

SPP will post “Public Data” for the Western EIS Market as a subsection of [Public Data](#) on the SPP Portal.

TECHNICAL IMPACT

SPP SYSTEMS/PROCESSES IMPACTED

SPP Portal menu and pages will be created to support WEIS Public Data.

ANTICIPATED MEMBER SYSTEMS/PROCESSES IMPACTED

Market participants utilizing programmatic methods to retrieve public data must modify their systems accordingly to interface with the SPP public data FTP as described in the [member requirements](#) section.

MEMBER REQUIREMENTS

WEIS market participants may wish to implement business processes and, if applicable, application systems to consume the following SPP WEIS public data.

DATA POSTING	SUMMARY OF DATA
RTBM Energy Offers	Historical RTBM Energy Offers by Resource with all price/MW pairs.
Binding Constraints	Constraints as calculated by the real-time balancing market.
Fuel On Margin	Report on each fuel type that was marginal, created at end of each day for previous day.
LMP by Settlement Location	LMP data (MEC and MCC) as calculated by RTBM, organized by settlement location.
LMP by Settlement Location (Annual Files)	Annual LMP data roll up (MEC and MCC components) as calculated by RTBM, organized by settlement location.
LMP by Bus	LMP by Bus data (MEC and MCC components) as calculated by RTBM, organized by bus.
LMP by Bus (Annual Files)	Annual LMP data roll up (MEC and MCC components) as calculated by RTBM, organized by bus.
Forecast Summary	The actual wind, actual solar and actual load is updated every five minutes and represent an integrated five-minute average. The intent of the display to is to show what the latest forecast data SPP has in the system at any given time.
Gen Mix 2 Hour	Generation mix files showing percentage generation by fuel type in use.
Hourly Gen Capacity By Fuel Type	Previous day (24 hours) generation capacity by fuel type, based on EcoMax used in real time.

DATA POSTING	SUMMARY OF DATA
Hourly Load	Historical load data rolled up at an hourly level and grouped by balancing authority area.
System-wide Short-term Load Forecast (STLF) versus Actual	Five-minute load forecast data for the SPP WEIS footprint (system-wide) for +/- 10 minutes.
System-wide Hourly Load Forecast (MTLF) versus Actual	Hourly load forecast data for the SPP WEIS footprint (system-wide) for +seven days (actual real-time load shown is averaged by hour as well).
Mid Term Resource Forecast (MTRF)	System-wide wind and solar forecast data for +144 hours organized by interval.
Short-term Resource Forecast (STRF)	System-wide wind and solar forecast data for +four hours and including actual wind and solar resource totals from previous intervals.
Variable Energy Resource (VER) Curtailments	Five-minute interval for SPP WEIS total data (not per resource) <ul style="list-style-type: none"> • Wind re-dispatch curtailments • Wind manual curtailments
Energy Imbalance Interchange Trend	Graphic view of the BA to BA Energy Imbalance Interchange between participating BAs in the WEIS Market.
WEIS Rampable Flexibility	Represents the forecasted dispatchable range of resources in the WEIS Market.
MP AO TC Mapping	Model reporting displays the market participant to asset owner to transmission customer relationships.
SL EIR Mapping	Model reporting displays the settlement location to source/sink to purchase selling entity (PSE) mapping.
SL Station BusNumber Turbine and FuelType	Model reporting displays the relationships between settlement location, engineering modeling system (EMS) area, EMS station name, planning systems stabilizer for engineering (PSSE) model number, PSSE model name, kilovolt value, EMS unit name, EMS maximum megawatt value, turbine type and fuel type.

DATA POSTING	SUMMARY OF DATA
SL to Pnode to Zone with Area	Model reporting displays the relationships between settlement location name, settlement location type, asset type, Pnode, node area and reserve zone (RESZONE). Reserve zone is a zone containing a specific group of price nodes for which a minimum and maximum operating reserve requirement is established.
Meter Agent	Model reporting displays all meter agents currently under the SPP network.
Interface Definitions	Model reporting displays the link between the Interface_SL and parent/child Pnode including the weight factor.
Settlement Calendar	The settlement calendar provides dates for data submission windows, statement postings and invoice publications.
Zonal Uplift Report	The Zonal Uplift Report is a monthly report of the total real-time uplift paid in dollars for each settlement area and operating day by uplift charge type. This report provides granular information about location, timing and causes of uplift.
Resource Uplift Report	The Resource-Specific Uplift Report is a report of the total monthly real-time uplift payments in dollars for each settlement location by uplift charge type.
Revenue Neutrality Uplift (RNU) Report	The Revenue Neutrality Uplift (RNU) report is designed to provide users major market level bill determinants and charge types used in the calculation of RNU totals for the SPP footprint.

MARKET MONITORING PORTAL

SERVICE IMPACT

AFFECTED?	SERVICES IMPACTED BY CHANGES
X	Eastern Interconnection (Integrated Marketplace)
	Western Reliability Coordination
X	Western Energy Imbalance Services Market

BUSINESS IMPACT

There are three components to the Market Monitoring Portal (MMP) release:

- a security and framework upgrade to the application and its component libraries
- the functional aspects required to implement the WEIS market
- general bug fixes/enhancements

SECURITY UPGRADE

Due to security vulnerabilities, a major application framework upgrade was required before building out the WEIS functionality. This required updates to the application code and to several third party component libraries. While every attempt was made to make this as transparent as possible to the current users, the import/export functionality that is utilized on several pages in the MMP had to be completely rewritten with new components. There are a few impacts to current users that have arisen from these changes. They are outlined below.

WEIS participants will interact with the Market Monitoring Portal (MMP) similarly to the way SPP Integrated Marketplace (IM) participants interact, using the functionality and framework already in place. The limited changes made to SPP systems to implement the WEIS Market require no changes for IM participants. There are no business or process impacts to the Integrated Marketplace or its participants, although there will be some slight visual changes as outlined below.

GENERAL FIXES/ENHANCEMENTS

While making the code changes required for the first two components of this release, the opportunity was taken to incorporate a few outstanding issues/enhancements to the system. These include (but are not limited to) the addition of a new generator cost fuel attribute field , better error handling and return messages, improved request validations, filtering out terminated plants for new Plant Month submissions, etc. Any impacts to the user are included below.

USERS IMPACTED

All WEIS market participants. Integrated Marketplace participants that use the import/export functionality are impacted, all others are not.

BUSINESS FUNCTIONS IMPACTED (WEIS)

WEIS market participants will need to implement business processes to exchange the following data with the SPP Market Monitoring unit via the Market Monitoring Portal:

- Generator Parameter Detail submission (including ramp rates)
- Generator Cost Detail submission (including fuel attributes, vom, and heat rate plots)
- Required Mitigated Offer Development Policy submissions
- Consumption, Stock, and Delivery submissions
- Opportunity Cost Calculation Detail submissions

BUSINESS FUNCTIONS IMPACTED (INTEGRATED MARKETPLACE)

No existing business functions were impacted.

TECHNICAL IMPACT

INTEGRATED MARKETPLACE NON-IMPACTING CHANGES

Integrated Marketplace users will see some slight (non-impacting) changes in the following areas:

- Tool tips and help information on the screens that will be shared by both markets will highlight fields that are not needed by WEIS users when applicable.

- WEIS specific pages will check to make sure that an entity is registered in that market and will notify the user if they are not. This is an extra security step to prevent members from submitting data on the wrong pages in the event that their LSA registers them for the wrong role. Similarly, IM only pages will perform the same check in the event that a WEIS entity is improperly granted a role for an IM only page.
- Representative fuel indices for the WEIS market will be included in the drop down for selection on the pages where fuel indices are used.
- One new column has been added to the *Generator Cost* page, to the Fuel Attribute subsection
 - Renewable Energy Certificates (REC) Rate: \$/MWh
- Terminated generators will no longer be available for selection in the *Mitigated Offer Development Methodology* associated generator drop-down
- *Consumption, Stock, Delivery* page will now allow reports on sold or retired plants within the last 90 days
- More useful error messages when importing files for any page that provides that functionality.
- The *Multi-Configuration Resource* page no longer shows the file upload icon for Read Only users. There was no security risk, but the icon being visible caused confusion.

INTEGRATED MARKETPLACE IMPACTING CHANGES

Any users that take advantage of the import/export functionality will be impacted by the following changes:

- The Fuel Attribute tab of the Generator Cost export will include the following new column:
 - renewable_energy_cert_rate
 - Renewable Energy Certificates Rate: \$/MWh
- Any tab for any export that does not contain data will now have a default row that includes the description for most fields. This default row was needed to prevent Microsoft Office from giving the user an erroneous "file corrupted" error when trying to open the file due to the new Excel libraries used.
 - If the user has no data to place in that tab, nothing has to be done. The file can be imported as is and the import function will ignore that row.

- If the user has data for that tab, they can either delete that row and then enter their new data, or they can place their data below that row. The import function will ignore the default row, if it exists.
- If the user has a tool or script that reads in this file, the default row will need to be accounted for.
- If the user generates their own file for import, there is no need to create a default row for any tab that does not contain data.

WEIS IMPACTS

The WEIS market participants will interface with the Market Monitoring Portal via a web browser and access the application through the SPP Marketplace Portal. A registered digital certificate will be needed and the appropriate roles will need to be granted by their LSA for the responsible parties to be able to submit and retrieve the data required by the SPP Market Monitoring Unit.

There are currently no exposed APIs for this interaction, but there are guides and templates provided for the information that is required to be submitted.

MEMBER REQUIREMENTS

WEIS market participants will need to implement business processes to exchange data with the SPP Market Monitoring unit via the Market Monitoring Portal. To aid in the development of those processes, the following documentation is published with details on how to exchange data, and the format required, with SPP.

Integrated Marketplace participants will need to make any necessary changes to take into consideration the impacting changes outlined above, if applicable.

DOCUMENT	LOCATION	DESCRIPTION
Training documents	Integrated Marketplace Portal under Market Monitoring Portal	Includes slide deck with directions of where to enter various information

The MMU is offering training on the Market Monitoring Portal. Session 1 will be held July 28th from 9 a.m. to 11 a.m. Central. Session 2 will be held August 4th from 2 p.m. to 4 p.m. Central. Open an RMS ticket to receive additional information.

APPENDIX A

Here is a list of frequently asked questions, grouped according to functional area. NOTE: This section will be developed during market trials.

QUESTION	ANSWER
<FUNCTIONAL AREA 1>	
<FUNCTIONAL AREA 2>	
<FUNCTIONAL AREA 3>	