



**Independent Market Operator**

**Balancing and LFAS Market Trial  
Specification**

**Version: 1.1**  
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## DOCUMENT DETAILS

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## TERMS AND ABBREVIATIONS

The following terms and abbreviations are used in this document for the purpose of brevity:

Term	Definition
Application UI	User Interface, such as the systems Graphic User Interface Window.
AS	Ancillary Services.
BMO	Balancing Merit Order. Ordinal list of Balancing Facilities and associated quantities (from Balancing Submission price and quantity pairs for each generator).
CSV	Comma Separated Variable input files. A data storage format.
IMO	Independent Market Operator
LFAS	Load Following Ancillary Services.
LFAS Forecasts	LFAS Forecasts is the LFAS schedule of forecast quantities of LFAS Up and Down for each LFAS provider for all Trading Intervals in the Scheduling day and Trading Day, which are in the LFAS Horizon and for which LFAS Gate Closure has not occurred.
LFMO	Load Following Merit Orders. Ordinal list of LFAS Facilities and associated quantities for provision of LFAS Upwards and LFAS Downwards services.
Market Start	The start of the Balancing Market, which is expected to commence in April 2012, initially with simplified transitional arrangements in place and a planned progression to full market operations.
Market Trial	The trial period for the Balancing and Load Following Ancillary Services Markets, which are expected to last from December 2011 to March 2012. References to Market Trial in this document refer to the "Balancing and Load Following Ancillary Services Market Trials".
MEP	Market Evolution Project
MP	Market Participant
MPI	Reference to the IMO Market Participant Interface
Parallel Operations	Parallel Operations of Balancing Market commencing 3 weeks before Market Start
SM	System Management
VSAF	Verve Stand Alone Facility
XML	Extensible Mark-up Language input files. A data storage format.

## REFERENCES

Ref	Document	Description
1	Data Definition Interface, IMO and System Management	Data definition of the interface between IMO and System Management on “what” data will be transferred.
2	Data Mechanism Interface, IMO and System Management – NOTE THIS IS CURRENTLY BEING DRAFTED.	Technical definition of the interface between IMO and System Management on “how” the data will be transferred. Includes data transfer protocols, XML file formats, etc.
3	Data Definition Interface, IMO to Market Participants – NOTE THIS IS CURRENTLY BEING DRAFTED.	Data definition of the interface between IMO and Market Participants on “what” data will be transferred.
4	Data Mechanism Interface, IMO and Market Participants – NOTE THIS IS CURRENTLY BEING DRAFTED.	Technical definition of the interface between IMO and Market Participants on “how” the data will be transferred. Includes data transfer protocols, XML file formats, etc.

## 1 PURPOSE

The purpose of this document is to define the high level scope of the Market Trials for the Balancing and Load Following Ancillary Services (LFAS) Markets, as well as the systems and functionality that will be made available to Market Participants to participate in these trials.

This document will be shared with System Management and Market Participants and will be used as the basis of defining the success of the Market Trials process.

## 2 INTRODUCTION

The Market Trial provides an opportunity for all Market Participants to get a working understanding of the new market trading processes through interacting with the market interfaces as they would at the start of the market, in a “production like” manner.

Depending on the preparedness of the Market Participant, market interface interaction may be performed manually via the IMO Market Participant user interface (MPI) or through automated “systems to systems” means. In either case, this interaction serves as a useful training and familiarisation exercise for users and also provides the opportunity for an extended test period for participants to fine tune the way they intend to interact with the new markets.

Note that as the Balancing and LFAS markets are likely to commence with “transitional arrangements” in place for a period of time, the scope of the Market Trials will be to test the new market trading processes, systems and functionality as they will exist at market inception in April 2012.

It should be also noted that the availability of functionality with the Market Trials will be limited to what can practicably be tested without extending to the physical dispatch of facilities.

## 3 THE BALANCING AND LFAS MARKET TRIALS

In an ideal case, a fully functional “Market Trial” would provide all of the processes, systems and functionality of the intended production market trading systems, running completely in parallel to the existing production processes and systems.

However, in order to provide Market Participants with early access to the new market systems and processes, it is more practical to embark on a “staged” approach to Market Trials with the delivery of the “core” components of the new markets in time for the start of Market Trials, with the incremental implementation of additional functionality and features as the trial progresses.

The staged approach will provide Market Participants with an extended familiarisation, testing and training environment to prepare for the new markets, while also providing Market Participants with the ability to provide feedback on the systems and have their suggestions considered for future systems development.

An overview of the Market Trial timeframes are as follows:

- Stage 1 – Dec 2011 – Core IMO Functionality
- Stage 2 – Jan - Feb 2012 – Incremental Enhancements to Full IMO Functionality
- Stage 3 – Mar 2012 – Parallel Operations

The scope of each of these stages is detailed in the following sections.

### 3.1 STAGE 1 – MARKET TRAIL – IMO CORE FUNCTIONALITY

The intent of the first stage of the Market Trial will be limited to providing and testing the core functionality of the Balancing and LFAS markets, from the input of standing and variation submission files to the calculation and publication of forecast prices and schedules for each of these markets.

The systems outputs within the Market Trial will be completely dependent on the inputs into the system and therefore, in order for the Market Trial to be a success, the systems will need to receive regular and realistic forecasts from System Management in addition to regular and realistic Balancing and LFAS submissions from Market Participants. The more realistic the inputs are into the Market Trial process, the more realistic the forecast schedules and prices will be.

It stands to reason, therefore, that if the inputs to the process are not regular and realistic, this will affect the potential confidence in the outcomes for all Market Participants. However, as the intent of these early stages of the market trial is to get familiarised with the systems and processes, Market Participants will have full flexibility to determine how and when they submit.

Note that the scope of the first stage of the Market Trial will be limited to testing the core functionality of the new market mechanisms for the Balancing and LFAS markets in isolation to the existing WEMS systems and processes (i.e. no need to test participate in STEM prior to Balancing).

A high level overview of the core functionality which is to be delivered in Stage 1 of the Market Trial for the Balancing and LFAS Markets are as follows:

1. File Exchange Enhancements (via MPI and/or Web Services)
  - Input of Balancing Submissions (Standing and Variation Submissions)
  - Input of LFAS Submissions (Standing and Variation Submissions)
  - Input of Unavailability declarations for Balancing and LFAS
2. Balancing Calculations
  - Balancing Merit Order (including setting of LFAS and Ancillary Service quantities at the price caps and implementation of “tie-break” rules)
  - Balancing Forecast Price Calculation
3. LFAS Calculations
  - LFAS Auction and Merit Orders (LFAS Up and LFAS Down services)
4. Publication to Market Participants (via the MPI and Web Services, and to SM via FTP)
  - Publication of the Balancing Merit Order to MPs and SM
  - Publication of the Schedule of Balancing Forecast Prices and Quantities to MPs
  - Publication of the Schedule of LFAS Auction Prices and Quantities to MPs
  - Publication of the Load Following Merit Orders (LFAS Up and LFAS Down) to SM
5. Receipt of System Management Data via FTP
  - Balancing Load Forecasts
  - Non-Scheduled Generation forecasts
  - LFAS Requirement Quantities
  - Market and Dispatch Advisories [primarily outage notification or constraints]
6. Settlements
  - No changes expected

The requirements for Stage 1 are depicted in the following diagram:

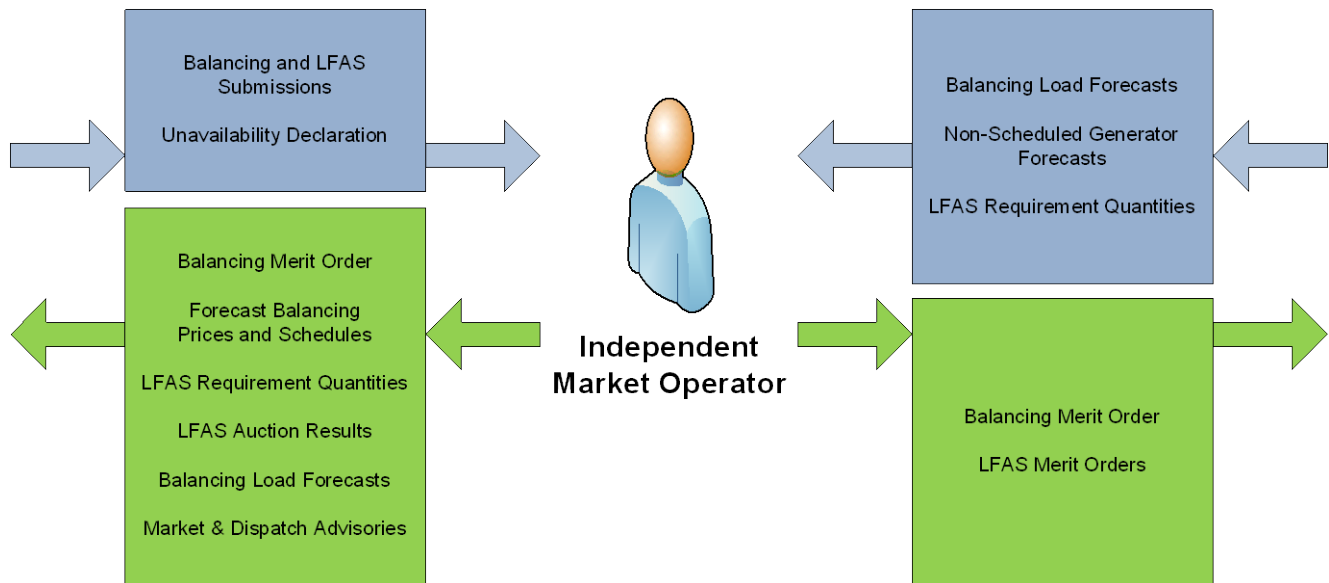


Figure 1 – Overview of Core Functionality of the Market Trial

### 3.1.1 File Exchange Enhancements

Market Participants will be able to make Balancing and LFAS Submissions within the Market Trial using the enhanced “File Exchange” functionality within the WEMS systems. Functionality will exist for the input of standing and variation submissions for the Balancing and LFAS markets, with valid file formats for File Exchange extended to allow for the input of either XML or CSV files. Error reporting functionality will also be extended to the new file formats to assist Market Participants in the submission process. Note that “unavailability declarations” for Balancing and LFAS will also be incorporated into the submission process.

File uploads can be made using either one XML file per submission, or one-to-many CSV files, with each of these files needing to adhere to data validation rules as well as business rules. Note that in the initial stage of the Market Trials the systems will only provide for base (simple) validation of files with more comprehensive file validation added in the second stage of implementation. In order to simplify the submission process and ease participation in the market trials, “simple to use” CSV templates will be provided by the IMO to allow Market Participants to create Balancing and LFAS submissions. This will remove the reliance on participants having to make changes to their own IT systems in order to participate in the trials.

Submissions are able to be made by participants using web services, or through the MPI “File Exchange” functionality. Note that web services functionality will only allow submissions in XML file formats.

As participation in the Balancing Market is mandatory, default standing submissions will be set up by the IMO in Stage 1 of the Market Trial for all Market Participants, however these will be able to be modified by entering in new standing or variation submissions to supersede these.

### 3.1.2 Balancing Calculations

#### 3.1.2.1 Balancing Merit Order (BMO)

Following entry of Balancing Submissions by Market Participants, the event timing within the system will be configured to automatically create a list of all Balancing Submission prices and quantities, ordering first by “priority”, then by price “adjusted” to the Muja reference point. This will occur for each interval from the available submissions and publish these in the form of a BMO every 30 minutes.

“Priority” will be afforded as follows:

1. LFAS provision will be the first priority; then
2. “Other” Ancillary Services provision; then
3. “Non-Active” Balancing Participants (unable to meet minimum requirement for active participation); and finally
4. The remaining “Active” Balancing Facilities / Portfolio

Where two identical price and quantity pairs exist for the same “Priority” category, the order sort will be determined by a “participant specific” daily randomly generated number.

Note that provision for LFAS and other Ancillary Services will be made within the Market Trial by adjusting relevant quantities within the BMO to the appropriate price caps.

### **3.1.2.2 Balancing Forecast Price Calculation**

The forecast prices for each trading interval will be calculated each half-hour using the intersection of the Balancing Load Forecast from System Management with the quantities in the Balancing Merit Order.

## **3.1.3 LFAS Calculations**

### **3.1.3.1 LFAS Auction and Merit Orders (LFAS Up and LFAS Down services)**

Following entry of LFAS submissions by Market Participants and receipt of the LFAS Requirements from System Management, the system will be configured to automatically create price ordered “merit order” lists of LFAS quantities by providers for LFAS Up and LFAS Down services, to the specified SM LFAS requirement quantity.

As LFAS is scheduled in 6-hour “fixed” windows (the “LFAS Horizon”), final “auction results” will be run and published every 6 hours.

Forecast LFAS results will be calculated every half-hour at the same time as the BMO covering future Trading Intervals in the LFAS Horizon for which LFAS Gate Closure has not occurred.

The LFAS enablement price for each Trading Interval will be calculated using the intersection of the LFAS Requirement from System Management with the LFAS Merit Order.

### **3.1.4 Publication to Market Participants**

The following information will be available to Market Participants from both the MPI and Web Service interfaces. Where information is to be delivered to System Management, this will be transferred via the current FTP mechanism:

#### **3.1.4.1 Publication of the Balancing Merit Order to MPs and SM**

The “price ordered list of Balancing Submission quantities for each interval”, which is calculated from the available submissions, will be available to each Market Participant in the form of a BMO every 30 minutes. Each Market Participant will be able to identify their own information within the BMO, however the quantities of other Market Participants will be provided but not identifiable to the participant (i.e. anonymous).

System Management will be provided with a separate BMO that includes the names of each Market Participant and the ramp rate limits for each tranche. This will be provided via FTP every 30 minutes.



### **3.1.4.2 Publication of the Schedule of Balancing Forecast Prices and Quantities to MPs**

The Schedule of Forecast Balancing Prices and Quantities will be published at the same time as the BMO and will contain the forecast price for each Trading Interval and the expected forecast dispatch quantities for each of their Facilities, or Verve PSC (based upon the price).

### **3.1.4.3 Publication of the Schedule of LFAS Auction Prices and Quantities to MPs**

The LFAS Auction results in the form of a schedule of LFAS enablement prices and quantities will be available to LFAS providers every six hours, shortly after completion of the LFAS Auction calculation.

Forecast LFAS results will be published every half-hour at the same time as the BMO for all future Trading Intervals in the LFAS Horizon for which LFAS Gate Closure has not occurred.

### **3.1.4.4 Publication of Load Following Merit Orders (LFAS Up and LFAS Down) to SM**

The “price ordered list of LFAS quantities by providers for LFAS Up and LFAS Down services, to the amount of the specified LFAS requirement”, which is calculated as part of the LFAS Auction Process, will be provided to SM every 6 hours.

## **3.1.5 Settlements**

No Settlements changes are expected to be available for Stage 1 of the Market Trial.

## **3.1.6 Stage 1 - Expectations of Participants**

The expectations of Market Participants within the Stage 1 of the Market Trial are outlined below.

### **3.1.6.1 The Independent Market Operator (IMO)**

- The IMO will calculate the BMO, Balancing forecasts and LFAS forecasts every 30 minutes using the latest Balancing and LFAS Submissions, Balancing Load Forecasts and LFAS Requirements.
- The IMO will publish the BMO to Market Participants via the MPI and Web Services; and to System Management every 30 minutes via FTP.
- The IMO will publish the Balancing and LFAS forecasts to Market Participants via the MPI and Web Services every 30 minutes via the MPI and Web Services.
- The IMO will perform the LFAS Auction every six hours and make the results available to LFAS Providers via the MPI and Web Services, and the LFMO available to System Management via FTP.
- The IMO will support and make the systems available within the Market Trial period on a “best endeavours” basis. When outages are required and known in advance, these will be communicated to participants via email.
- The IMO and System Management will review feedback and requests from MPs and incorporate into future systems enhancements, where practical.

### **3.1.6.2 System Management (SM)**

- SM is expected to supply realistic and regular (at least once daily) Balancing Load Forecast, Non-Scheduled Generation Forecast information and LFAS Requirements to the IMO via FTP.
- SM is expected to review the BMO and LFMO results and report back on any issues to the IMO via email. This may also involve issuing of a Market Advisory by SM.

- SM will conduct a number of specific scenario tests in order to test operational procedures which may arise from Market Operations. These scenarios will be agreed in advance with the IMO, with results reviewed in conjunction with the IMO and MPs.

### 3.1.6.3 Market Participants (MPs)

- MPs are expected to participate in the Market Trial through the creation and submission of realistic and regular Balancing and LFAS submissions (where appropriate) using the MPI or Web Services.
- MPs to review market outcomes, results and publications as they become available using the MPI or Web Services. This will give MPs an opportunity to understand how the new systems work, check that their systems integrate with the new system effectively, and an opportunity for MPs to provide feedback where appropriate.
- MPs are expected to raise any concerns, issues, comments or enhancement requests to the IMO and System Management for consideration.

## 3.2 STAGE 2 – INCREMENTAL ENHANCEMENTS TO FULL IMO FUNCTIONALITY

The intent of the second stage of the Market Trial is to enhance the IMO market systems to full functionality in an incremental manner prior to commencement of the parallel production trial.

An overview of the additional functionality which is to be delivered in Stage 2 of the Market Trial for the Balancing and LFAS Markets is below (note that this a high level overview and is not intended to be an exhaustive list):

1. Registration Changes (MPI and Web Services)
  - Balancing and LFAS Registration
  - Management of Verve Standalone Facilities (including application to become a VSAF)
2. File Exchange Enhancements
  - Conversion of existing XML submissions to CSV
  - Resource Plans file format changes (MPI File Exchange and Web Services)
3. Final Pricing Algorithm (ramp rate limited)
4. Creation and Publication of Non-Balancing Merit Order
5. Receipt of System Management Data by FTP
  - LFAS Activation Instructions
  - Receipt and publication of SM Outages and Advisories
6. Settlement Changes
  - Calculations and Reports for Balancing and LFAS
  - Removal of UDAP, DDAP, MCAP

In the latter part of Stage 2 of the market trials, the IMO and System Management will hold a “hands-on training and market systems familiarisation” workshop with Market Participants to work through a selection of “real-life market scenarios”.

The IMO and System Management will also work together to conduct additional scenario tests, as required.

The additional requirements for Stage 2 are depicted in the following diagram:

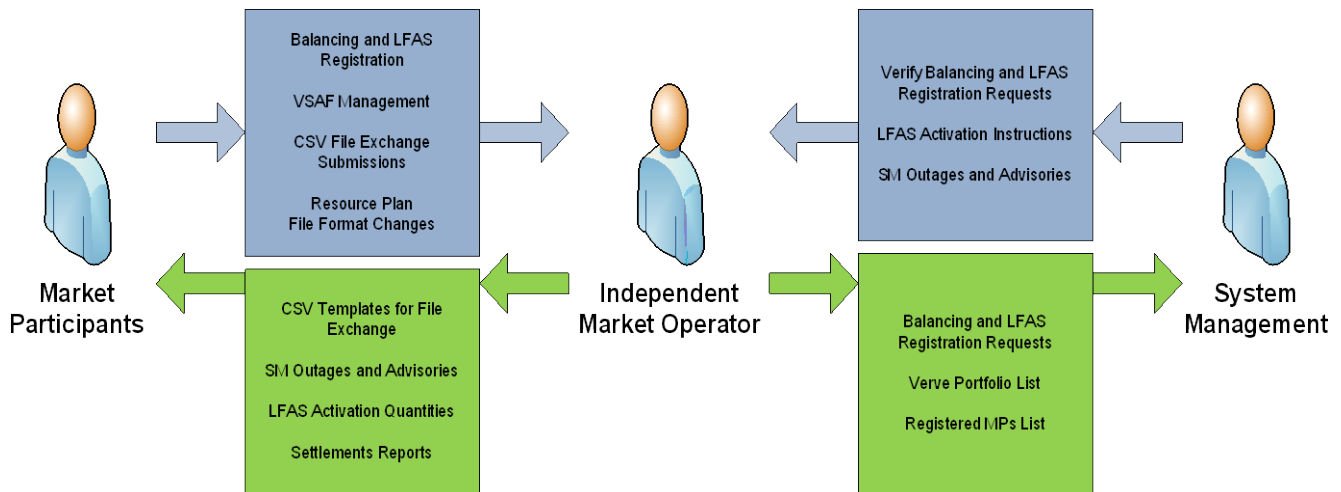


Figure 2 – Overview of Incremental Enhancements to Full IMO Functionality

### 3.2.1 Registration Changes

#### 3.2.1.1 Balancing and LFAS Registration

The Market Participant Registration (MPR) system will be enhanced to manage the ability for Facilities to participate within the Balancing and LFAS markets upon meeting set minimum criteria. As part of this process, the IMO will provide SM with the list of registered MPs, along with relevant reference data, via FTP.

#### 3.2.1.2 Management of Verve Standalone Facilities

The MPR system will be amended to provide the ability for Verve Energy to manage the facility composition of their Portfolio, as well as the registration data for their standalone facilities (VSAF). Rules and restrictions on the frequency and ability to transfer facilities in and out of the Verve Energy Portfolio (i.e. for trial purposes) will also be implemented within the systems in accordance with the market rules.

As part of this process, the IMO will provide SM with the list of facilities within the Verve Portfolio, via FTP.

### 3.2.2 File Exchange Enhancements

#### 3.2.2.1 Conversion of existing XML submissions to CSV

The File Exchange functionality within the MPI will be enhanced to support CSV file formats for all existing file types to serve as an alternative to the existing back-up method of “manual form editing” within the ABB MPI systems.

CSV templates for STEM, Resource Plans, Bilateral Contracts and Reserve Capacity will be made available to Market Participants by the IMO.

#### 3.2.2.2 Resource Plans file format changes

The Resource Plan file format will be modified to specify a MW target (at sent out quantity) at a specified ramp rate from a specified time.

### **3.2.3 Final Pricing Algorithm (ramp rate limited)**

Within Stage 2 the pricing algorithm will be modified to limited submission quantities to their “maximum achievable” target quantities, taking into account the forecast start of interval set point and submitted ramp rate.

### **3.2.4 Creation and Publication of Non-Balancing Merit Order**

The existing Dispatch Merit Order (DMO) within the IMO systems will be modified to remove Balancing Facilities from the list. This “Non-Balancing Merit Order” will be published to SM via FTP as per the existing timeframes for the DMO.

### **3.2.5 Receipt of System Management Data by FTP**

#### **3.2.5.1 LFAS Activation Instructions**

System Management will provide the IMO with LFAS Activation Instruction within Stage 2 to confirm the quantity and use of LFAS providers for each type of LFAS, including LFAS Up, LFAS Down, Backup LFAS Up and Backup LFAS Down. These quantities will be made available to LFAS providers within the market systems.

#### **3.2.5.2 Receipt and publication of SM Outages and Advisories**

System Management will provide the IMO with test outage notifications and advisories within Stage 2 to test the publication of this information to Market Participants.

### **3.2.6 Settlement Changes**

#### **3.2.6.1 Calculations and Reports for Balancing and LFAS**

The IMO Settlements systems and associated processes will be modified to settle the Balancing and LFAS markets, in accordance with the market rules.

#### **3.2.6.2 Removal of UDAP, DDAP, MCAP**

Existing calculations within the IMO Settlements systems will be modified in accordance to the rules, with calculations such as UDAP, DDAP and MCAP being removed. Note that these are just some examples of changes and the full list of changes will be made based upon the amended market rules.

### **3.2.7 Stage 2 - Expectations of Participants**

The additional expectations of Market Participants (over and above the expectations outlined in Stage 1) within the Stage 2 of the Market Trial are outlined below.

#### **3.2.7.1 The Independent Market Operator (IMO)**

- The IMO will review and approve registration requests submitted by Market Participants via the MPI in order to facilitate Market Participant testing of the systems. Registration change requests for new or existing registration data will be provided by the IMO to SM for verification
- IMO to provide SM with the list of registered MPs, along with relevant reference data, via FTP.
- IMO to provide SM with the list of facilities within the Verve Portfolio, via FTP.
- IMO to make the necessary changes to the MPI File Exchange to allow for CSV file submissions for STEM, Resource Plans, Bilateral Contracts and Reserve Capacity.
- IMO to make the necessary changes to Resource Plan file formats.

- IMO to make the necessary changes to the Final Pricing Algorithm to take ramp rates into consideration within the Balancing forecasts.
- IMO to create the Non-Balancing Merit Order and publish this to SM.
- IMO to make the necessary changes to the Settlements systems to settle the Balancing and LFAS markets, as well as amend existing calculations in accordance with the market rules.
- IMO to publish “dummy” Settlement Reports which include the intended breakdown of calculations for testing purposes. This is expected to be via email.
- IMO to publish LFAS Activation Quantities (derived from SM LFAS Activation Instructions) via the MPI and Web Services.
- IMO to publish SM Outages and Advisories via the MPI and Web Services.

### **3.2.7.2 System Management (SM)**

- SM to verify the format of registration requests for new and existing registration data, submitted by Market Participants via the MPI.
- SM to verify the format of Verve Portfolio facility lists and Balancing and LFAS lists provided by the IMO.
- SM to provide LFAS Activation instructions to the IMO for the purposes of testing Settlement of LFAS Up, Down and Backup LFAS Up and Down. This will be provided via FTP.
- SM to provide Outages and Advisories via FTP in order to test the IMO notification systems.

### **3.2.7.3 Market Participants (MPs)**

- MPs may apply for registration of facilities for Balancing and LFAS, via the MPI or Web Services, in order to test these processes with the IMO and SM.
- Verve Energy may apply for registration of standalone facilities within the Market Trials, via the MPI or Web Services, to test this functionality with the IMO and SM.
- MPs may test CSV file submissions for STEM, Resource Plans, Bilateral Contracts and Reserve Capacity using the File Exchange functionality on the MPI.
- MPs may test the Resource Plan file format systems interface changes using the MPI or Web Services.

## **3.3 STAGE 3 – PARALLEL OPERATIONS**

The intent of the final stage of the Market Trial is to trial the market systems and processes as if they were live, running in parallel with the production market systems and existing market mechanisms (STEM, etc) with “real world” data inputs from System Management and Market Participants as they will be provided on the first day of the market.

No additional functionality is expected to be delivered in Stage 3 of the Market Trial, other than the use and publication of real information.

### **3.3.1 Stage 3 - Expectations of Participants**

The additional expectations of Market Participants (over and above the expectations outlined in Stage 1 and 2) within the Stage 3 of the Market Trial are outlined below.

#### **3.3.1.1 The Independent Market Operator (IMO)**

- The IMO will review and approve registration requests using the MPI, as per the intended production processes and timelines.

- The IMO will support and make the systems available within the Market Trial period to the same standards as the production systems during “normal business hours”. Outside of these times, systems will be supported on a “best endeavours” basis.
- Outages are not expected, however if they required, these will be communicated to participants by the IMO via email. Unexpected outages will be supported as per the same arrangements and service levels as stated above.
- IMO to make System Management Outages and Notifications available to Market Participants via the MPI using the IMO notification systems.

### **3.3.1.2 System Management (SM)**

- SM is expected to review and verify registration requests as per the intended production processes and timelines.
- SM to provide actual LFAS Activation instructions to the IMO for LFAS Up, Down and Backup LFAS Up and Down. This will be via FTP.
- SM to provide details of actual Outages and Advisories via FTP.
- SM to provide additional information, as outlined within the interface document, including but not limited to Operational Instructions, Resource SCADA, etc. This will be via FTP.
- SM will support and make the systems available within the Market Trial period to the same standards as the production systems during “normal business hours”. Outside of these times, systems will be supported on a “best endeavours” basis.
- Outages are not expected, however if they required, these will be communicated to participants by SM via email. Unexpected outages will be supported as per the same arrangements and service levels as stated above.

### **3.3.1.3 Market Participants (MPs)**

- MPs are expected to apply for registration of facilities for Balancing and LFAS via the MPI or Web Services, as directed by the IMO, in order to test these processes with the IMO and SM.
- Verve Energy is expected to apply for registration of standalone facilities within the Market Trials via the MPI or Web Services, to test this functionality with the IMO and SM.
- MPs to submit Resource Plans in modified file format using either the MPI or Web Services.
- MPs are expected to set up Standing Balancing Submissions for their facilities/portfolio within the MPI or using Web Services.
- MPs are expected to participate in the Balancing and LFAS parallel runs, providing realistic submissions, via the MPI or Web Services, in order to test the market outcomes.

## 4 MARKET TRIAL OUTCOMES AND SUCCESS CRITERIA SUMMARY

The success of the Market Trial will be defined by the achievement of the following outcomes:

Functionality	Market Trial (Dec '11)	Parallel Operations (Mar' 12)	Market Start (Apr' 12)	Responsibility
Balancing and LFAS Submissions (CSV and XML) <ul style="list-style-type: none"> <li>- Allow input of Standing and Variation Submissions</li> <li>- Allow input of Unavailability Declarations</li> <li>- Base (simple) Validation of Submissions</li> <li>- Error reporting to Participants to allow for correction of files</li> <li>- Full validation of submissions</li> </ul>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	IMO
Balancing Merit Order <ul style="list-style-type: none"> <li>- Calculation and publication of a (simple) BMO to MPs, where LFAS and tie break rules are included.</li> <li>- Publication of BMO to System Management (no prices) via FTP</li> <li>- Remove Balancing Facilities from the Dispatch Merit Order (Non Balancing Merit Order) and publish to SM.</li> </ul>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	IMO
Balancing Prices and Quantities <ul style="list-style-type: none"> <li>- Calculate and Publish the schedule of Forecast Balancing Prices and Quantities to Market Participants.</li> <li>- Calculate Final Prices and Publish to Market Participants (Note calculation is dependent on receipt of "Per Facility" SCADA data from System Management via FTP).</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	IMO

Functionality	Market Trial (Dec '11)	Parallel Operations (Mar' 12)	Market Start (Apr' 12)	Responsibility
Publication of LFAS Auction Results <ul style="list-style-type: none"> <li>- LFAS Merit Orders to SM via FTP</li> <li>- LFAS Quantities and Prices to Market Participants</li> </ul>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	IMO
File Exchange <ul style="list-style-type: none"> <li>- Ability to support CSV file formats for existing market mechanisms, including support for STEM, Bilateral Contracts, Resource Plans and Reserve Capacity</li> </ul>		<input type="checkbox"/>	<input type="checkbox"/>	IMO
Resource Plans <ul style="list-style-type: none"> <li>- Allow input of Resource Plans in amended file format</li> <li>- Provide Resource Plans in amended file format to System Management</li> </ul>		<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	IMO
Registration Changes <ul style="list-style-type: none"> <li>- Provide ability to register for active participation in the Balancing and LFAS markets</li> <li>- Allow Verve Energy ability to apply for standalone facility (VSAF) status on a trial and permanent basis</li> <li>- Test approval of registration requests to allow for participation in Balancing and LFAS, as well as requests for VSAF.</li> <li>- Approval of registration requests in preparation for Market Start</li> <li>- Provide SM with details of registration change requests</li> <li>- Provide SM with list of registered MPs</li> <li>- Provide SM with list of VSAF facilities</li> </ul>		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	IMO



Functionality	Market Trial (Dec '11)	Parallel Operations (Mar' 12)	Market Start (Apr' 12)	Responsibility
Settlements <ul style="list-style-type: none"> <li>- Provision of “dummy” Settlements reports for testing purposes</li> <li>- Amendments to Calculations and Reports to settle the Balancing and LFAS markets</li> <li>- Calculation and publication of Constrained On and Off amounts</li> </ul>		<input type="checkbox"/>	<input type="checkbox"/>  <input type="checkbox"/>	IMO
Publication of Outages and Advisories to Market Participants (Note publication is dependent on receipt of data from System Management).		<input type="checkbox"/>	<input type="checkbox"/>	IMO
System Management Forecasts to IMO (New FTP data requirements) <ul style="list-style-type: none"> <li>- Provision of (at least daily) Balancing Load Forecasts</li> <li>- Provision of (at least daily) Non Scheduled Generation Forecasts</li> </ul>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	System Management
Daily provision of LFAS Requirement to IMO via FTP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System Management
Review IMO information and provide feedback on any issues <ul style="list-style-type: none"> <li>- BMO and LFAS Merit Orders</li> <li>- Format of Registration Change Requests</li> <li>- Format of lists of Registered Market Participants</li> <li>- Format of lists for VSAF</li> </ul>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	System Management
SM Scenario tests of Market Operations procedures	<input type="checkbox"/>			System Management
Provision of “Per Facility, Smoothed” Resource SCADA to the IMO via FTP, required for pricing purposes		<input type="checkbox"/>	<input type="checkbox"/>	System Management

Functionality	Market Trial (Dec '11)	Parallel Operations (Mar' 12)	Market Start (Apr' 12)	Responsibility
Registration Changes <ul style="list-style-type: none"> <li>- Test verification of registration requests to allow for participation in Balancing and LFAS, as well as requests for VSAF.</li> <li>- Review and verify registration requests in preparation for Market Start</li> </ul>		<input type="checkbox"/>	<input type="checkbox"/>	System Management
Provision of Test Information to the IMO via FTP (including changes to format, where required) <ul style="list-style-type: none"> <li>- Provision of Test LFAS Activation Instructions</li> <li>- Provision of Test Ancillary Service Amounts (Daily/Resource)</li> <li>- Provision of Test Operation Instructions</li> <li>- Provision of Test (Balancing) Dispatch Instructions and Volumes</li> <li>- SM Market and Dispatch Advisories, Outages and Notifications</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		System Management
Provision of Actual Instructions to the IMO via FTP (including changes to format, where required) <ul style="list-style-type: none"> <li>- Provision of Daily LFAS Activation Schedule/Instructions</li> <li>- Provision of Ancillary Service Amounts (Daily/Resource)</li> <li>- Provision of Operation Instructions</li> <li>- Provision of (Balancing) Dispatch Instructions and Volumes</li> <li>- SM Market and Dispatch Advisories, Outages and Notifications</li> </ul>			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	System Management
Extension to provision of outage information to include outages from Non Scheduled Generators		<input type="checkbox"/>	<input type="checkbox"/>	System Management

Functionality	Market Trial (Dec '11)	Parallel Operations (Mar' 12)	Market Start (Apr' 12)	Responsibility
<b>Balancing and LFAS Submissions</b> <ul style="list-style-type: none"> <li>- Enter Regular and Realistic Standing Balancing and LFAS Submissions in the WEMS using the MPI and/or Web Services</li> <li>- Enter Regular and Realistic Variation Balancing and LFAS Submissions in the WEMS using the MPI and/or Web Services</li> <li>- Enter Unavailability Declarations in the WEMS using the MPI and/or Web Services</li> <li>- Review error reporting and use these to correct files</li> </ul>	<input type="checkbox"/>    <input type="checkbox"/>    <input type="checkbox"/>    <input type="checkbox"/>	<input type="checkbox"/>    <input type="checkbox"/>    <input type="checkbox"/>    <input type="checkbox"/>	<input type="checkbox"/>    <input type="checkbox"/>    <input type="checkbox"/>    <input type="checkbox"/>	Market Participants
<b>Registration Changes</b> <ul style="list-style-type: none"> <li>- Test the application process to register facilities for active participation in the Balancing and LFAS markets</li> <li>- Register facilities in production for active participation in the Balancing and LFAS markets in preparation for Market Start</li> </ul>		<input type="checkbox"/>    <input type="checkbox"/>	<input type="checkbox"/>    <input type="checkbox"/>	Market Participants
<b>Verve Energy Registration Changes</b> <ul style="list-style-type: none"> <li>- Test the application process to register and manage VSAF on a trial basis</li> <li>- Register VSAF facilities in production in preparation for Market Start (if deemed appropriate for Market Start)</li> </ul>		<input type="checkbox"/>    <input type="checkbox"/>	<input type="checkbox"/>    <input type="checkbox"/>	Verve Energy
<b>Submission Changes</b> <ul style="list-style-type: none"> <li>- Test submission of CSV files using the MPI File Exchange for STEM, Bilateral Contracts, Resource Plans and Reserve Capacity</li> <li>- Test submission of Resource Plans in amended file format</li> <li>- Enter Resource Plans in amended file format in production after Market Start</li> </ul>		<input type="checkbox"/>    <input type="checkbox"/>    <input type="checkbox"/>	<input type="checkbox"/>    <input type="checkbox"/>	Market Participants

Functionality	Market Trial (Dec '11)	Parallel Operations (Mar' 12)	Market Start (Apr' 12)	Responsibility
Review market outcomes and results and provide feedback on any issues to the IMO and/or SM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Market Participants
Raise concerns, issues, comments or enhancement requests to the IMO and/or SM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Market Participants