

ELECTRON

BiTraDER Platform Future Development High Level Functional Specification

WP13 Roadmap to implementation

Table of Contents

Table of Contents	2
List of Figures	2
Abbreviations	2
Introduction	3
1 Functional Specification	3
1.1 View anonymised bid and offer information	3
1.2 Bid/offer resubmission	4
1.3 Enable half-hourly trading	5
1.4 Trade verification	5
1.5 Trading algorithm utilises asset data	6
1.6 Automatic seller dispatch	7
1.7 Automatic bid/offer submission	7
1.8 Market opportunity notification	8
1.9 BiTraDER settlement calculations	8
2 Market Design and Commercial Considerations.....	9

List of Figures

Figure 1: High-level functional improvements required for BAU transition. Source: Electron.	3
--	---

Abbreviations

ANM - Active Network Management

BAU - Business-As-Usual

CLA - Constraint Look-Ahead

MOL - Merit Order List

MOM - Merit Order Management

SP-ENW - SP Electricity North West

Introduction

This functional specification outlines the required enhancements to the BiTraDER platform to facilitate its transition into a business-as-usual (BAU) market operation. It provides a comprehensive overview of the high-level development outcomes alongside the functional requirements necessary for each update. Furthermore, the contents of this report directly follow and expand upon the potential platform enhancements and market improvements previously identified in Deliverable 11.1.

1 Functional Specification

A high-level overview of the BiTraDER platform functional improvements required for transition to BAU are shown in Figure 1, as well as the Market Process stage they align to and whether they are affected by external dependencies.

 Outcome	Market Process	External Dependency?
Market opportunity notifications	Trading	☐
View anonymised bid and offer information	Trading	☒
Bid/offer resubmission	Trading	☐
Enable half-hourly trading	Trading	☒
Trading algorithm utilises asset operational data	Trading	☒
Automatic bid/offer submission	Trading	☐
Enable trade verification	Trade Verification	☒
Automatic seller dispatch	Dispatch	☒
BiTraDER settlement calculations	Settlement	☒

Figure 1: High-level functional improvements required for BAU transition. Source: Electron.

The functional specification for these requirements is detailed below.

1.1 View anonymised bid and offer information

1.1.1 Outcome

- Users are given useful information about other market participants' bid and offer information to support price discovery and successful trade matching.

1.1.2 [User\(s\)](#)

- BiTraDER market participants – buyers and sellers.

1.1.3 [Functional Requirements](#)

- The BiTraDER platform must provide anonymised bid and offer price and volume data to participants, per constraint the user can trade in.
- The BiTraDER platform should provide minimum and maximum price guides for BiTraDER buyers and sellers respectively.

1.1.4 [Data Requirements](#)

- Display submitted price and volume (MW) data.

1.1.5 [UI Requirements](#)

- New 'Order Book' page or tab to display data, with CSV export capability.

1.1.6 [Constraints and Dependencies](#)

- The BiTraDER market design would need to be updated to enable participants to view each other's anonymised bid and offer data, ahead of trade matching.

1.2 Bid/offer resubmission

1.2.1 [Outcome](#)

- Users can resubmit bids and offer price and volume for a given constraint and period, ahead of submission window closure.

1.2.2 [User\(s\)](#)

- BiTraDER market participants – buyers and sellers.

1.2.3 [Functional Requirements](#)

- The BiTraDER platform must allow participants to submit new bid or offer prices and volumes for a given constraint and time period.
- The BiTraDER platform must override a given bid or offer when the user resubmits.
- The BiTraDER platform should record an audit trail of all bids and offers.

1.2.4 [Data Requirements](#)

- Store all bids and offers made by a user, including those which are overridden.

1.2.5 [UI Requirements](#)

- Submission table updates when offer is overridden.

1.2.6 [Constraints and Dependencies](#)

- N/A.

1.3 Enable half-hourly trading

1.3.1 [Outcome](#)

- BiTraDER participants can bid and offer on each half-hour of a constraint, to support participation and value for assets with shorter run-time or variable capacity.

1.3.2 [User\(s\)](#)

- BiTraDER market participants – buyers and sellers.
- BiTraDER market operator

1.3.3 [Functional Requirements](#)

- The BiTraDER platform must display half-hourly constraint size (MW) and merit order list data to users.
- The BiTraDER platform must allow users to submit bids and offers per half-hour, rather than per constraint.
- The BiTraDER platform should allow users to submit bids and offers in bulk.
- The BiTraDER platform could enable users to generate a prefilled submissions template, with relevant asset and constraint information for a given user.

1.3.4 [Data Requirements](#)

- The platform must be able to ingest Constraint Look-Ahead (CLA) and Merit Order List (MOL) data in half-hourly increments.

1.3.5 [UI Requirements](#)

- Updated Trading Opportunities table and/or graphical design.
- Update submission section enabling user to submit in bulk.

1.3.6 [Constraints and Dependencies](#)

- Updates required to granularity of data provided by SP-ENW's Active Network Management (ANM) and Merit Order Management (MOM) systems.

1.4 Trade verification

1.4.1 [Outcome](#)

- The BiTraDER updates constraint and network data over time and verifies if matched trades are still valid ahead of delivery.

1.4.2 [User\(s\)](#)

- BiTraDER market participants – buyers and sellers.
- BiTraDER market operator

1.4.3 [Functional Requirements](#)

- The BiTraDER platform must automatically ingest new CLA and MOL data throughout the trading and delivery windows.
- The BiTraDER platform must provide dynamic updates to constraint information within the platform.
- The BiTraDER platform must review established trades and cancel those no longer considered valid.
- The BiTraDER platform must update post-trade MOLs and communicate cancellations to affected participants.

1.4.4 [Data Requirements](#)

- The platform must be able to ingest CLA and MOL on a regular cadence, agreed with the market operator.

1.4.5 [UI Requirements](#)

- New 'Constraint Information' section, showing constraint updates over time.
- Completed Trades tab contains cancelled trade information.

1.4.6 [Constraints and Dependencies](#)

- Requires review of the interaction between SP-ENW's MOM system, and the BiTraDER platform.

1.5 Trading algorithm utilises asset data

1.5.1 [Outcome](#)

- BiTraDER participants can only submit bids and offers, and be contracted for trades, which align with their asset's operational capabilities.

1.5.2 [User\(s\)](#)

- BiTraDER market participants – buyers and sellers.

1.5.3 [Functional Requirements](#)

- The BiTraDER platform must prevent participants from submitting consecutive bids or offers for a period longer than the asset's maximum run-time.

1.5.4 [Data Requirements](#)

- The platform must use registered asset data in the platform's validation rules for offer/bid submission.

1.5.5 [UI Requirements](#)

- Relevant error messages displayed if users try to take an action which triggers validation rules.

1.5.6 [Constraints and Dependencies](#)

- The BiTraDER platform enforces the maximum bid or offer size from the asset's 'instruction size,' calculated based on the MOL received from SP-ENW's MOM system. Therefore, the MOM system would need to be updated to reflect asset's varied capacity over time.

1.6 Automatic seller dispatch

1.6.1 [Outcome](#)

- The BiTraDER platform send dispatch instructions automatically, when instructed by the ANM system.

1.6.2 [User\(s\)](#)

- BiTraDER market operator

1.6.3 [Functional Requirements](#)

- The BiTraDER platform must dispatch BiTraDER seller assets via webhook when instructed by the ANM system.
- The BiTraDER platform should let Market Operator users manually change or stop dispatch of BiTraDER seller assets if required.

1.6.4 [Data Requirements](#)

- The platform must be able to ingest instructions from the ANM system and generate dispatch instructions based on these.

1.6.5 [UI Requirements](#)

- N/A.

1.6.6 [Constraints and Dependencies](#)

- Requires review and test of the interaction between SP-ENW's ANM system and the BiTraDER platform.

1.7 Automatic bid/offer submission

1.7.1 [Outcome](#)

- Users with fixed asset capacity (MW) and price strategies reduce operational overhead on market participation.

1.7.2 [User\(s\)](#)

- BiTraDER market participants – buyers and sellers.

1.7.3 [Functional Requirements](#)

- The BiTraDER platform could enable users to easily submit the same capacity and prices as on a previous trading day.

1.7.4 [Data Requirements](#)

- N/A.

1.7.5 [UI Requirements](#)

- N/A.

1.7.6 [Constraints and Dependencies](#)

- N/A.

1.8 Market opportunity notification

1.8.1 [Outcome](#)

- BiTraDER participants are notified automatically upon the publication of a market within a network location where they hold existing qualified assets.

1.8.2 [User\(s\)](#)

- BiTraDER market participants – buyers and sellers.

1.8.3 [Functional Requirements](#)

- The BiTraDER platform should send email notifications to relevant BiTraDER participants, triggered by market publication.

1.8.4 [Data Requirements](#)

- N/A.

1.8.5 [UI Requirements](#)

- Email notification with Electron/Market Operator branding, containing URL to view markets.

1.8.6 [Constraints and Dependencies](#)

- N/A.

1.9 BiTraDER settlement calculations

1.9.1 [Outcome](#)

- BiTraDER market operators receive settlement reports for BiTraDER participants automatically on an agreed timescale, to enable buyer-to-seller payment.

1.9.2 [User\(s\)](#)

- BiTraDER market participants – buyers and sellers.

- BiTraDER market operator

1.9.3 [Functional Requirements](#)

- The BiTraDER platform should automatically calculate settlement values based on the agreed BiTraDER settlement methodology.
- The BiTraDER platform should enable settlement reports to be sent to the relevant users based on the agreed BiTraDER settlement methodology.

1.9.4 [Data Requirements](#)

- BiTraDER settlement methodology parameters, defined by the Market Operator.

1.9.5 [UI Requirements](#)

- Standardised settlement report format with Electron/Market Operator branding.

1.9.6 [Constraints and Dependencies](#)

- A simple pro-rata adjustment to availability and utilisation payments for under-delivery. A formalised BiTraDER settlement methodology would need to be developed for BAU.
- BiTraDER participants were paid by SP-ENW in the live trials. In a real scenario, buyers would pay sellers for delivery. Therefore, a process for peer-to-peer settlement would need to be agreed by the BiTraDER team ahead of development of this feature.

2 Market Design and Commercial Considerations

Deliverable 11.1 Section 4 outlines other market design and commercial considerations for transitioning the BiTraDER market to BAU.