# I-SEM Trialling of EUPHEMIA: Trial Plan


**11 March 2015**

CONTENTS

# 1 INTRODUCTION

At the Regulatory Authorities' (RAs) Rules Liaison Group (RLG) workshop on 15 October 2014, a proposed plan for the trialling of the EUPHEMIA algorithm for the Integrated Single Electricity Market (I-SEM) was presented. A number of market participant[1] comments on this plan were subsequently received.

The industry feedback broadly supported the concept of a two-phased approach to the trial, of the form:

1. **Initial Phase –** internal to SEMO only and containing levels of conceptual and stress trials.
2. **Commercial Phase –** performed by SEMO in conjunction with industry, covering at least one year of data and containing a number of smaller iterations following the full year of data trial which will contain fully commercially sensitive bids and offers.

However, there was a request for the Initial Phase to contain at least one year of data (as opposed to one month of data in the original proposal), for SEMO to devise trialling scripts detailing the structure of bids and offers for each unit and how Participants should conduct the Commercial Phase trials and for SEMO to perform a more administrative role with Participants. These suggestions do offer certain benefits, including:

- The Initial Phase would produce more robust results earlier in the process – approximately one month earlier than the original plan (due to the considerable extension to Initial Phase overlapping with the Commercial Phase).
- It represents what industry requires, thereby, potentially reducing the risk of EUPHEMIA trialling being reopened at a later date.
- It reduces the burden on market participants.

However, these advantages would come at a cost in terms of final delivery:

- Final completion of the trialling would extend out to possibly March 2016.
- There would be inefficiencies in the process e.g. repetition of trials on the same data multiple times.

A revised plan, which incorporated the majority of the feedback received after the RLG workshop on 15 October 2014, was discussed at the RLG workshop on 21 January 2015. This plan included an Initial Phase lasting three months, scheduled to conclude in March 2015, and a Commercial Phase of six months, scheduled to conclude in December 2015. The six month Commercial Phase contains additional trials beyond the original plan, with SEMO performing a more expanded role than originally envisaged. Subsequent Participant[2] feedback requested the inclusion of certain specific scenarios, e.g. high wind high demand market day. These scenarios are incorporated into the final plan which has been approved by the *RAs/TSOs I-SEM Joint Project Board* and which is outlined in this document.

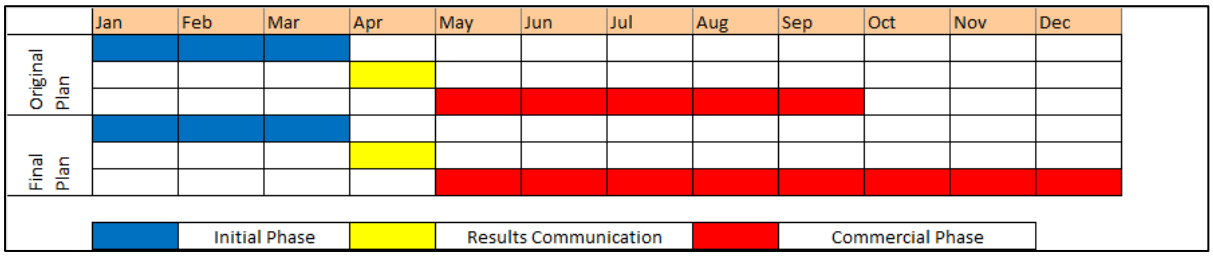
To facilitate industry interactions, an industry working group will be established for the duration of the trialling. Terms of reference will be produced and a call for nominations will be performed over the coming weeks, with confirmation of working group members expected before the end of March 2015. This working group will have regular meetings which will be in addition to more industry-wide workshops.

This document sets out the current plan for I-SEM trialling of EUPHEMIA in two phases, including target timelines and proposed interactions with Participants and other parties.

[1] Power NI Ltd. PPB, Electric Ireland, ESB GWM, Tynagh Energy Ltd., Bord na Mona and Energia endorsed the EAI proposal. Power NI, Brookfield Renewable Energy Group and IWEA made proposals independent of the EAI

[2] Responses were received from EAI, TEL and Energia

The following diagram provides a high level breakdown of time required for each phase:




# 2 FINAL PLAN

The Final Plan is scheduled to run from January to December 2015. It will comprise of three main activities:

- Initial Phase
- Communication of Initial Phase Results
- Commercial Phase

A more detailed description of each activity is included below.

## 2.1 INITIAL PHASE

The Initial Phase is scheduled to be completed over the period January 2015 to March 2015. It will be performed by SEMO only; Participants will be informed of progress, as required, through the RAs' RLG workshops or other workshops. The Initial Phase will feature datasets of no greater than approximately one month of data.

The goal of the Initial Phase is to provide both conceptual (proof of concept) and stress (level of acceptable complexity) results. The Initial Phase results will be assessed with support from the Price Coupling of Regions (PCR) algorithm working group (ALWG). Small datasets, typically less than a week's worth of data, will be used for the first trials in the Initial Phase; once understanding of the implications of initial assumptions improves a final trial will be carried out. This trial will be for a representative sample of market conditions covering the period February 2014 to January 2015. The volume of data used in the Initial Phase will allow for as many relevant scenarios as possible, e.g. a day with low wind and high demand, but will not exceed approximately one month of market data.

The Initial Phase will attempt to replicate the conditions used in the SEM, e.g. Bidding Code of Practice (BCOP) is applied, scheduled generators recover fixed costs, fully inelastic demand etc., as allowed by the EUPHEMIA algorithm. Initial Phase results will show the effects of interconnection with other bidding zones. All order formats, which are deemed appropriate, will be considered as part of the Initial Phase and combinations of order types will be included in the trials.

## 2.2 COMMUNICATION OF INITIAL PHASE RESULTS

Following the Initial Phase, it is intended that a report of the Initial Phase results and methods used will be published following review by PCR and the RAs and discussion with the industry working group. This process is scheduled to be completed over the period April to June 2015.

To supplement the Initial Phase report, three public workshops in relation to the Initial Phase will take place:

- **Workshop 1 –** focused on providing an overview of the Initial Phase including goals of the trials, nature of the issues encountered, indicative overview of results – this may be conducted before Initial Phase results are finalised.
- **Workshop 2 –** focused on the results of the Initial Phase including price and schedule data as well as data on the performance of the algorithm under stressed conditions, as applicable.
- **Workshop 3 –** focused on the methods used to prepare and perform the trials. This will act as a preparatory tutorial for Participants for the Commercial Phase.

The possibility of ALWG involvement at these and any subsequent workshops to provide additional expertise and insight will be explored.

Following the workshops, SEMO will engage bilaterally with Participants, as required, in order to prepare them for the Commercial Phase. These bilateral meetings, as well as any public workshops, will supplement the industry working group meetings which will be the primary form of industry interaction and discussion.

## 2.3 COMMERCIAL PHASE

### 2.3.1 STAGE ONE – SCRIPTED

It is intended that, the first stage of the Commercial Phase will be the Scripted Commercial Trial. This will involve a trial of one year of market data, performed according to a Trial Script produced in conjunction with the industry working group. This Trial Script will outline how each unit in the market is to be treated by Participants for each market day involved in the trial. Participants will prepare data for this trial according to the Trial Script and following the instructions outlined in the abovementioned Workshop 3.

Following analysis, the results of this trial will be published and Participants will be free to perform their own analysis of results. Participants will be allowed to raise queries on the data which will be referred, as required, to the PCR ALWG for further analysis. Once all results have been analysed, a report on this trial will be produced summarising results and presenting any relevant conclusions. This report will be reviewed by the RAs and PCR prior to publication.

### 2.3.2 STAGE TWO – UNSCRIPTED

It is intended that, the second stage of the Commercial Phase will be a series of unscripted trials. In these unscripted trials, Participants will be free to decide how to represent their units and will not be subject to a Trial Script or the BCOP. There will be two unscripted trials, each using one week of market data.

Following analysis of the results of each unscripted trial in conjunction with Participants, a report will be produced outlining the results. As the unscripted trials will feature commercially sensitive data, fully transparent publication may not be possible.

### 2.3.3 FINAL REPORT

Following all trials, it is intended that, a final EUPHEMIA trial report will be published. This report will outline the conclusions drawn from all phases of the trials in relation to implementation of EUPHEMIA in the I-SEM and is scheduled to be completed before the end of 2015.