



Market Development Roadmap

Abstract

This document is the Roadmap for developing the wholesale electricity market for the period 2020-2025

Date – 13 July 2020

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Executive Summary

The *Roadmap* is the third illustrated overview of the market development path for the wholesale market for electricity for Ireland and Northern Ireland. A link to the previous (second) Roadmap can be found [here](#).

This document is organised into four main sections:

- Ex-Ante
- Capacity
- Balancing; and
- Settlement.

The forwards markets are outside the scope of the Roadmap.

The main objectives of the Roadmap are to show Market Participants the priorities with regard to the development of the wholesale market, to present a clear picture of the features being added and to show what the implications are over time of any changes to the priorities.

The Roadmap is published every circa six months, providing Market Participants with the opportunity to provide regular feedback into the market development priorities. This publication is not licence mandated, and the work included is the subject of various price control processes which have not been concluded. However, it does represent the best information at this time. Many of the projects are in the long term and as with all Roadmaps are subject to change. Market Participants are invited to give feedback which will be considered for subsequent versions.

The development strategy has not changed since the last Roadmap and continues to be to improve the stability of the overall service offering and to add to the services where this can be achieved without impacting on stability. Further stability is being achieved in three ways: firstly, by addressing outstanding defects, secondly by improving the robustness of systems and thirdly by improving the performance of the systems.

Since the last version of the document progress has been made on Ex-Ante Market projects including REMIT reporting at a unit level, preparations for the addition of complex orders to the Intraday markets, and a review of product and service priorities with Exchange Members. The assumed implementation period for Coupled Intraday projects is still 2 years, however, the start date is a function of the Brexit

agreement and could be delayed until a circa 2024 start date if GB no longer has access to the Internal Energy Market (IEM).

With regard to the Capacity Market, in SEM-19-023 (Capacity Remuneration Mechanism 2023/24 T-4 Capacity Auction Parameters) the SEM Committee called for the introduction of a Mixed Integer Programme (MIP) Solver into the Capacity Market auction algorithm. Scoping and pre-development work for the project to deliver the new format have been brought forward. In addition, work is continuing on a partial solution for Secondary Trading that will include the registration of the secondary transactions. As a result of the prioritisation of these projects, other work is being deprioritised. However, regular releases will continue, which will involve the delivery of fixes for known defects and change requests that come through for the Capacity Market Code.

In the Balancing Market, the Repricing and Resettlement functionality has been delayed. An automated process will now be delivered in Q2 2021.

Projects that may directly result from Brexit have not been included in the Roadmap but may be added in later versions when they have been more clearly identified and scoped.

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Introduction

This document outlines the June 2020 Roadmap for Market Development (“the Roadmap”) for the period 2020-2025 across all SEM markets to include Ex-Ante, Capacity, Balancing and Settlement. Given the importance of the Settlement function and in the interest of transparency it is split out as a separate category.

One of the objectives of the Roadmap is to give Market Participants a high level overview of the main features and functional changes that are being planned for each market during the period 2020-2025. While all reasonable effort is made to communicate the latest information to Market Participants it has to be acknowledged that the plans are not fixed. It is still the intention of EirGrid and SONI (in their various roles as System Operators, Market Operators etc.) to publish an updated Roadmap every six months to allow for changes and re-prioritization.

The Roadmap is not mandated by licence nor is it a market code obligation, however, it has been decided by the EirGrid and SONI to publish it in order to be as transparent and open as possible. Feedback on this document is most welcome and should be sent via email to info@sem-o.com using the subject “Market Development Roadmap” before **7th of August 2020** for consideration in advance of the next Roadmap which will be published at the end of 2020.

1. Background

This is the third version of the Roadmap and should be considered as a continuation of the second Roadmap which was published in November 2019. The Roadmap helps to plan and to articulate the rationale behind any decisions to remove or add key features to the market or its systems. It is high level and captures the key priorities in a particular timeframe.

All markets are covered by the Roadmap which helps both the Market Participant and EirGrid and SONI to develop credible and realistic expectations over time. Many of the projects (in particular those which are scheduled for later years) may not have received full approval at this point and the fact that the projects are listed does not indicate that they have been through all internal controls or regulatory approvals where required. Steps such as full capital approval will only happen closer to the commencement of project delivery.

The Roadmap should be considered in conjunction with a number of other documents, including the Market Systems Development Plan, however there are a number of differences which are outlined in

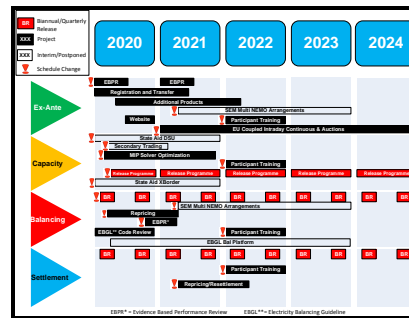
Figure 1 below. At the time of writing The *Market System Development Plan* will be the subject of a consultation with Industry Participants in Q3 2020.

Market System Development Plan



- SEMO Based only
- 2-3 Years
- Includes infrastructure
- Licence Obligation
- Updated annually

Roadmap for Market Development

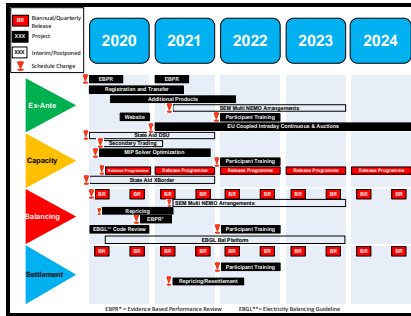


- All Markets
- 5 Years
- High Level Participant Facing
- EirGrid/SONI Initiative
- Updated every 6 months

Figure 1: Comparison of Roadmap and Market System Development plan

2. Objectives and Scope of the Roadmap

The Roadmap continues to have the same three main objectives which are outlined in Figure 2.



- To communicate the strategic priorities with regard to all markets
- To present a clear picture of the features being added to the main markets over the next 5 years
- To show the impact of any changes to the strategic priorities on other priorities

Figure 2: Overall Objectives of the Roadmap

Given that many of the projects may not be delivered for some time it is not the intention to provide in-depth detail. The Roadmap only includes projects which are Market Participant facing. The Roadmap does not show other projects which may be delivered in the same timeline, which may deliver market operation performance improvements e.g. infrastructure improvements.

Changes to the document since the last Roadmap

While the structure of the document remains the same the following table lists the most notable changes.

Change	Market
Evidence Based Performance Review has been brought forward to early 2020.	Ex-Ante
SEM Multi Nemo Arrangements will not commence in 2021. Further dialogue will take place with Regulatory Authorities on this.	Ex-Ante & Balancing
An interim approach addressing Cross Border State Aid is being advanced in 2020.	Capacity
Measures have been advanced for registration of Secondary Trades.	Capacity
A Release programme for changes to the Capacity Market has been rolled out.	Capacity
Work on the development of a MIP Solver to optimize the results of the Capacity Auctions has been brought forward to 2020.	Capacity
The number of releases has been reduced to twice yearly starting in 2020.	Balancing
Work on the Electricity Balancing Guideline Platforms will not commence until 2021 and will require further considerations.	Balancing
The delivery of an automated repricing functionality has been delayed to 2021.	Balancing
Evidence Based Performance Review has been delayed due to Re-pricing delays	Balancing
Resettlement following Repricing has been delayed.	Settlement

Table 1: Main changes to the Roadmap

3. Market Operations Strategy

The overall strategy continues to be to stabilize the market systems and to improve the service offering through a small number of discrete projects. Based on Market Participant feedback it is not intended to close out every defect before adding functionality. Since the last Roadmap there have been two major releases into the market systems which delivered a significant number of defect fixes.

The Known Issues Report¹ will continue to be published for Market Participants and will outline the key issues being addressed. All work requires a commitment of resources and so the blend of projects outlined has made assumptions around the availability of key internal resources for the work.

While defects are present in a number of areas the main focus is currently on the following:

- Settlements (including reports)
- Pricing in Balancing Market
- Reports in Balancing Market
- Scheduling and Dispatch

During the I-SEM Project some functionality was removed from scope with the intention of delivering it at a later stage (Day 2). Secondary Trading (see Capacity Roadmap) is a case in point and commences development in 2021.

The Market Operator User Group (MOUG) will continue to be a key communication channel for discussing the Roadmap.

Brexit Status

The outlook regarding Brexit remains uncertain: projects that may directly result from the UK leaving the EU have not been included in the Roadmap but may be added in later versions, when more certainty is available.

¹ [The Known Issues Report is published weekly.](#)

4. Roadmap Overview

The Roadmap covers all markets in order to illustrate where product investments are being prioritised. EirGrid and SONI are planning to deliver a number of projects e.g. rollout of new servers and software updates which will be delivered at the infrastructure level. These are not included in the Roadmap as they do not deliver new features to the market. However, they may improve the performance of the market.

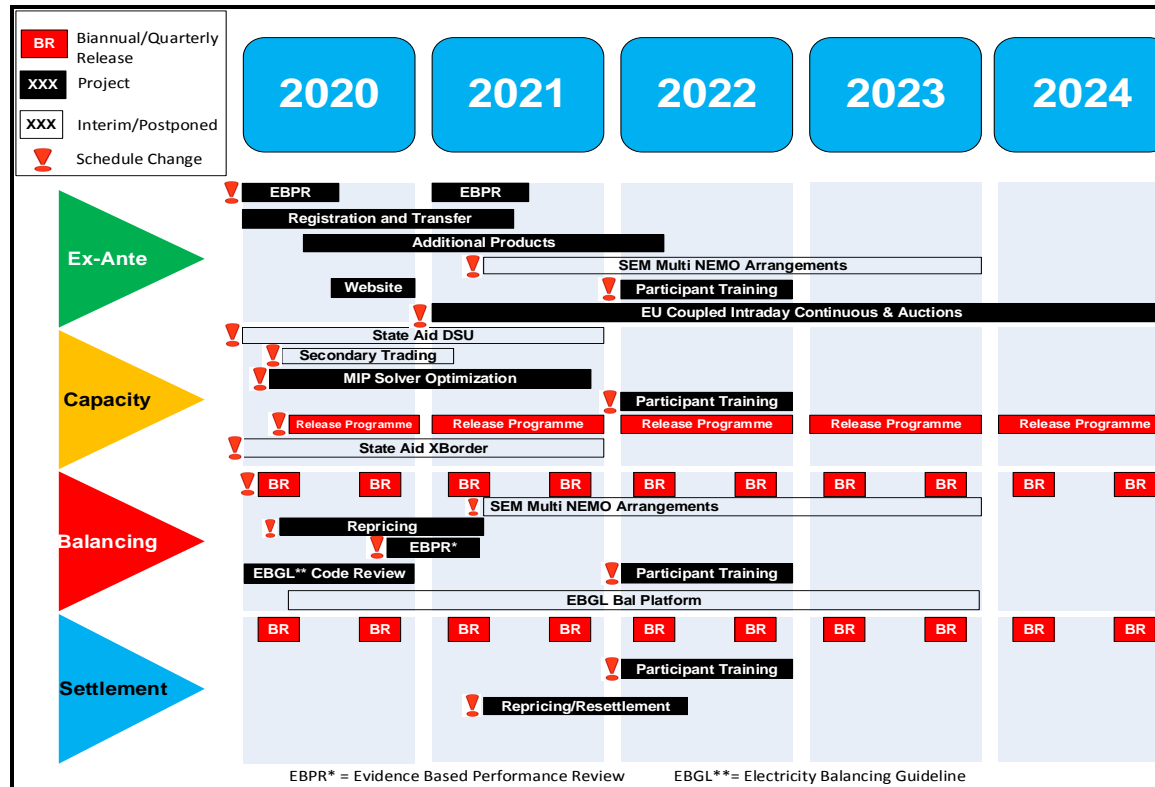


Figure 3: Overall Roadmap

A. Ex-Ante Markets

A number of Ex-Ante projects have been progressed since the last publication, with some being fully implemented and others close to implementation. Discussions were also held with Exchange Members regarding the prioritisation of product and service enhancements which has led to a revision of some of the priorities and timelines for individual projects.

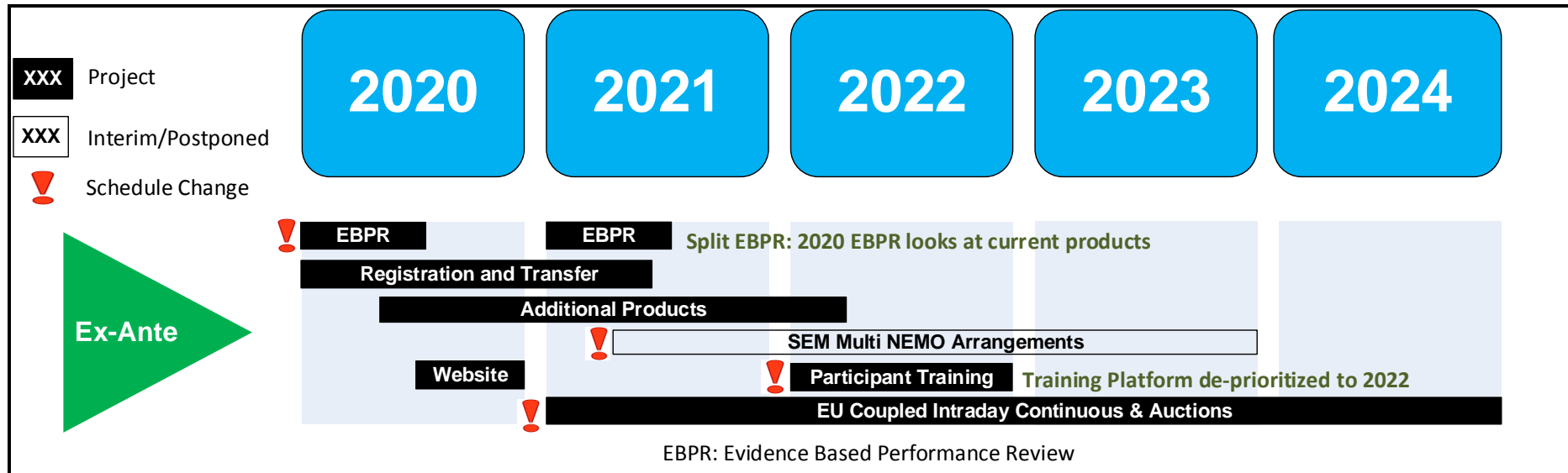


Figure 4: Ex-Ante Roadmap

There are a number of additional features which could amount to separate projects in time. These could be added to the markets during 2020 and are outlined below.

- 1) Ex-Ante markets will undergo an **Evidence Based Performance Review** during 2020 to determine if there are any significant changes that should be investigated based on the performance so far.

STATUS UPDATE: The first phase of this project was undertaken with Exchange Members in February 2020. It involved the publication of a discussion paper on product and service enhancement priorities and a subsequent SEMOpx User Group meeting to obtain Exchange Member views. The results of this dialogue were a list of the priority items for product and service enhancements. These have been used as an input to the latest version of the roadmap.

- 2) A **Website Enhancements** project is proposed for 2020.

<p>Description: A number of improvements need to be made to the SEMOpx website e.g. allowing dynamic reporting.</p>	<p>Business Case: Market Participants have been vocal about the need to improve the website service offering to be at least comparable to other exchanges. It was part of the original scope for I-SEM but was de-scoped.</p>	<p>Risks, Assumptions and Delivery Impact: The work is complementary to other projects at the time. Assumptions include regulatory capital approval and availability of technical staff.</p>
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STATUS UPDATE: This project has been rescheduled to the second half of 2020 due to website resource constraints. Preliminary requirement gathering has been completed for some of the proposed changes and some of these have been vendor impact assessed. A decision on moving to the build phase for these defined requirements is imminent. Further enhancements may be scoped and added as they become apparent.

3) A number of **Additional Product Improvements** are being developed for the Ex-Ante markets.

<p>Description: There are a number of additional improvements being considered, for example:</p> <ul style="list-style-type: none"> • IDA: Complex Orders • DAM: Scalable Complex Orders Evaluation • DAM/IDA: blocks or linked blocks • Continuous market: user defined blocks, all or nothing blocks 	<p>Business Case: Market Participants have requested a number changes to products in the form of additional features or improvements.</p>	<p>Risk, Assumptions and Delivery Impact: This work will span one or more years and involve procurement, solution redesign, build, test and deployment. It assumes close alignment with our service provider EPEX and regulatory capital approval.</p>
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STATUS UPDATE: The first new product, IDA 30 minute Complex Orders, is still planned for implementation in the near future. This is possible as the implementation and test of the product for inclusion in IDA requires limited effort and was already proposed for I-SEM Go-live but deferred. In addition a forced EUPHEMIA release is planned for June 2020. This project is on track to be delivered on time. SEMOpX is interacting with the European Single Day-Ahead Coupling (SDAC) Committee on the development of DAM scalable complex orders which are being suggested as a replacement for classical complex orders in the day-ahead market by the European

SDAC Committee. Further working groups with Exchange Members are to be scheduled for Q4 2020 to allow evaluation of whether these scalable complex orders could be a replacement for classical complex orders longer term. This project is in the early stages and is on-going.

4) A number of **Registration and Transfer Improvements** will be made to the Ex-Ante markets.

<p>Description: Unit Registration changes being sought include:</p> <ul style="list-style-type: none"> • Effective dating of members and units access to auctions and continuous trading. • Allowing units to be transferred from one member to another in the continuous trading system 	<p>Business Case: Market Participants have requested that these changes be made to allow more flexibility in the transfer of units between members adding competition. In addition effective dating of access to auctions and continuous trading markets will mitigate risks and financial consequences of trading when not eligible to do so.</p>	<p>Risks, Assumptions and Delivery Impact: This work spans one or more years and may involve procurement, solution redesign, build, test and deployment. It assumes close alignment with our service providers and regulatory capital approval</p>
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STATUS UPDATE: Implementation of effective dates for units and members in ETS was completed in November 2019. Reporting of REMIT data at a unit level, which was requested by ACER, was also implemented in February 2020. Based on the outcome of the prioritisation of products and services dialogue with Exchange Members, the allowing of the transfer of units between members in the continuous trading system is being impact assessed, while effective dating for the continuous market has been de-scoped.

5) **SEM Multi NEMO arrangements.**

<p>Description:</p> <p>This project involves the redevelopment of the new SEM solution architecture to support multiple NEMOs operating in either Ireland or Northern Ireland.</p>	<p>Business Case:</p> <p>CACM requires competition in the provision of multiple NEMO arrangements. It could potentially lead to improved liquidity in the markets however, in a small market could lead to reduction in the viability of service offerings in the long term. It is a very large scale project.</p>	<p>Risks, Assumption and Delivery Impact:</p> <p>As this is a very large project it requires significant procurement work. The scale of the project presents risks around staffing, schedules and assumes that high levels of regulatory support. The impact of Brexit is yet not clear.</p>
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STATUS UPDATE: SEM Multi Nemo Arrangements will not commence in 2021. Further dialogue will take place with Regulatory Authorities on this.

- 6) The **EU Coupled Intraday Continuous** is an initiative of TSOs and power exchanges from across Europe to create a joint integrated intraday cross-border continuous market.

<p>Description: Previously known as XBID (Cross Border Intraday) but now known as Single Intraday Coupling (SIDC), the project would involve the SEM coupling with the EU Intraday continuous market which is currently only a local SEM market.</p>	<p>Business Case: This is mandated by the EU and is needed to be compliant with CACM It enables continuous cross-border trading across Europe.</p>	<p>Risks, Assumptions and Delivery Impact: This work would spans one or more years. This presents risks around staffing, and assumes significant levels of regulatory support and support from existing service providers. The impact of Brexit is not clear.</p>
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STATUS UPDATE: Based on the outcome of the product and service enhancements prioritisation dialogue with Exchange Members the agreement is to await the Brexit outcome before starting any detailed design and implementation.

- 7) A Learning Management System was used very effectively during the I-SEM project to deliver scaled training to Market Participants. A similar **Participant Training** initiative will help to support learning across the industry.

<p>Description: The development of a Learning Management System to support the administration and delivery of training to Market Participants.</p>	<p>Business Case: The markets need to continuously adapt to regulatory and technological changes. In order to support this, a Learning Management System will be developed to help Market Participants adapt to change.</p>	<p>Risks, Assumptions and Delivery Impact: The work would take approximately one year and would involve business analysis, procurements and in-house materials development. The provision of quality materials requires a high level of Subject Matter Expert input which impacts on other work.</p>
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STATUS UPDATE: Due to reprioritization and advancement of other work this has been pushed beyond 2021. Procurement has not commenced.

8) At present the DAM is the only coupled auction at EU level in the SEM markets. The **EU Coupled Intraday Auction** functions at an EU rather than local level.

<p>Description: The EU Coupled Intraday Auctions aims to couple intraday at a European level. The concept of coupled auctions at a European level is new and is only just beginning to be considered in Europe.</p>	<p>Business Case: This may be mandated by the EU and may be needed to be compliant with CACM. This would integrate the regional and local intraday auctions of the SEM with the wider EU, leading to greater liquidity.</p>	<p>Risks, Assumptions and Delivery Impact: This work spans one or more years and may involve procurement, solution redesign, build, test and deployment, contractual and procedural changes. The impact of Brexit is not clear.</p>
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STATUS UPDATE: Based on the outcome of the product and service enhancements prioritisation dialogue with Exchange Members, this project will await the Brexit outcome first, then reconfirm priority and schedule to ensure implementation by Celtic Interconnector go-live at the latest. In the short term SEMOpx is to stay involved, and influence where possible, the EU development of IDA coupled auctions.

B. Capacity Market

There are five changes to the previous Roadmap publication. Firstly, Secondary Trading is being progressed using an interim approach. Secondly, a MIP Solver Optimisation project has been brought forward. Thirdly, a release programme has commenced which will see improvements being made to the Capacity Market auction platform. Lastly, the State Aid Cross Border & DSU projects are being advanced using interim measures.

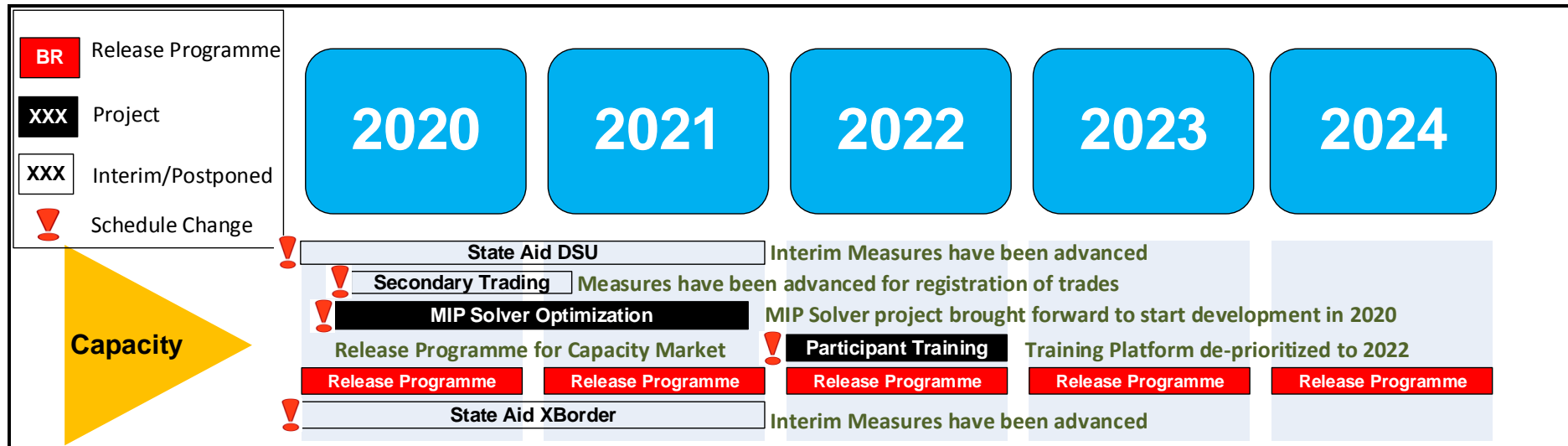


Figure 5: Capacity Roadmap

The development of the Capacity Market continues during the next few years thanks to several regulatory mandated decisions as well as improvements to the overall service. Noteworthy projects include:

- 1) & 2) Two projects cover work to implement an EC Commission decision which impacts **DSUs** and **Cross Border** Capacity Market participants (those from outside of Ireland and Northern Ireland).

<p>Description: EC Commission decision C(2017)7789 regarding State Aid SA44464 (2017/N) covers two areas which were not included in the original I-SEM Capacity Market systems: DSUs and Cross border participants.</p>	<p>Business Case: The decision by the EC Commission highlights the difference in treatment for Reliability Options between DSUs and generators which could lead to DSUs being disadvantaged.</p> <p>It also highlights the need to accommodate cross border Capacity Market participants.</p>	<p>Risks, Assumptions and Delivery Impact:</p> <p>These are sizeable projects which will require work in the area of business requirements, design, development and test. The long term nature of the work carries risks.</p>
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STATUS UPDATE: Work has commenced on the planning and early stage business requirements. Interim measures are being advanced however, scoping for enduring solutions will not begin in 2020 as the MIP Solver Optimisation Project has been prioritized.

- 3) A Learning Management System was used very effectively during the I-SEM project to deliver scaled training to Market Participants. A similar **Participant Training** initiative would help to support learning across the industry. See Page 16.

STATUS UPDATE: Due to reprioritization and advancement of other work this has been pushed beyond 2021. Procurement has not commenced.

4) **Secondary Trading** of Reliability Options has been requested by Market Participants

<p>Description: Secondary Trading allows Market Participants to trade their Reliability Options after initial purchase.</p>	<p>Business Case: Secondary trading of options is widely available on other markets. It has been requested by Market Participants. It was part of the original I-SEM scope.</p>	<p>Risks, Assumptions and Delivery Impact: The scope of the work involves some changes to business requirements, market rules and central systems. Secondary trades will be registered centrally. This assumption may be revisited at a later stage. The project assumes no major changes to regulations.</p>
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STATUS UPDATE: There is a change to scope: a facility to register central trades will be delivered.

5) There are two projects that will improve the experience of the auction participants. The first project covers **Platform Inputs**.

<p>Description: The areas relates to Auction inputs including:</p> <ul style="list-style-type: none"> • Improvements in usability and design of 	<p>Business Case: The benefits will be seen mainly by Market Participants in terms of superior user experience, reduced input</p>	<p>Risks, Assumptions and Delivery Impact: The scope of the work mainly involves business analysis, design, deployment, test and vendor</p>
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<p>interfaces</p> <p>Develop online qualification and registration layer</p>	<p>errors and improved audit/security</p>	<p>management. The project assumes stability with regard to design but carries some technical risk.</p>
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STATUS UPDATE: There is a change to the delivery approach. Both 5) Platform Inputs and 6) Platform Outputs are being rolled into a release programme.

6) The second area of interest relates to number of **Outputs** from the Capacity Auction Platform.

<p>Description: There are a number of updates to more adequately reflect the Capacity Market Code including:</p> <ul style="list-style-type: none"> • Improve CMP Reports • Enable copy and paste functionality to be available to Market Participants • Resolve issues with viewing results 	<p>Business Case: Many of these relate to issues with the original design and defects. The benefits will be seen mainly by Market Participants and streamline processes and procedures internally.</p>	<p>Risks, Assumptions and Delivery Impact: The scope of the work mainly involves business analysis, design, deployment, test and vendor management. The project assumes stability with regard to design but carries some technical risk. <u>The Optimisation project may impact on the scale of releases until 2021.</u></p>
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STATUS UPDATE: There is a change to the delivery approach. Both 5) Platform Inputs and 6) Platform Outputs are being combined into a release programme. The Optimisation project may impact on the scale of releases until 2021.

7) A project to improve the **Optimisation** of the capacity algorithm.

<p>Description: Currently, the Capacity Market Auction uses Auction Format C. This solves the auction using an optimisation process to evaluate a limited number of Participant offers above and below the Auction Clearing Price (ACP) to select the optimum set of offers which minimises overall capacity procurement cost whilst providing sufficient Capacity in each geographical area. Any additional offer considered will dramatically increase the number of combinations to be calculated. It is therefore necessary to limit the algorithm to consider only a subset of likely solutions. This can result in sub-optimum outcomes. Using a Mixed Integer Programming solver, Auction Format D should result in a more optimal outcome.</p>	<p>Business Case: As the Capacity Auction is allocating hundreds of millions euro/pounds, even small improvements in optimality could, in theory, improve welfare by millions. Nevertheless, the implementation would be complex and not without risk. In SEM-19-023 the SEM committee proposed that if possible Format D be used as the enduring Auction Solution Methodology. .</p>	<p>Risks, Assumptions and Delivery Impact: Delivery will require resources for design, build, test, and certification. Specialist expertise will be required. There are knock on impacts on other projects which have been rescheduled beyond 2021.</p>
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STATUS UPDATE: This has been brought forward to 2020. A high level scoping exercise has been completed and a team has engaged with potential vendors. The project has been approved to move to the next phase and is expected to be delivered in 2021.

C Balancing Market

There are a number of changes to the Balancing Market Roadmap. Firstly, there has been a delay to the rollout of repricing. Secondly, there will be two releases a year from 2020 onwards to deliver functionality to the central market systems. Thirdly, Evidence Based Performance Review will take place in early 2021. Lastly, the Multi NEMO Arrangements projects won't begin in 2021 and require further consideration.

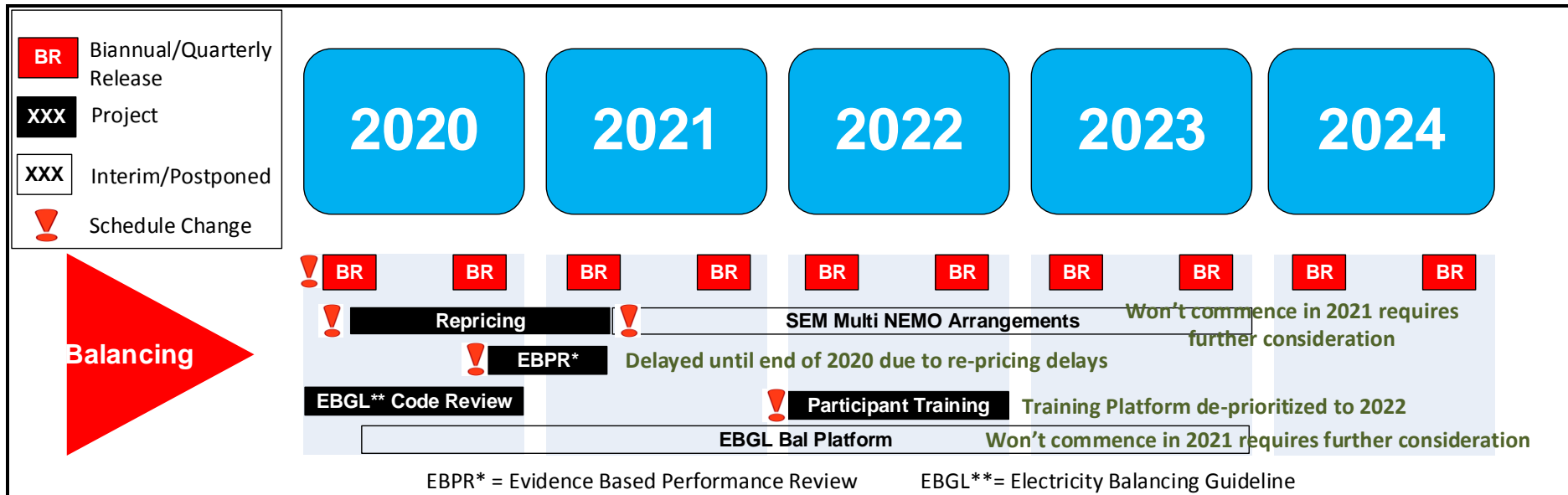


Figure 6: Balancing Market Roadmap

- 1) In the short term, the principle objective of the **Release Programme** continues to be to stabilize central systems in order to improve the experience of Market Participants.

Description	Business Case:	Risks, Assumptions and Delivery Impact:
<p>The Balancing Market has defects in a number of areas which are reported via the <i>Known Issues Report</i> including:</p> <ul style="list-style-type: none"> • Imbalance Settlement (See settlement) • QBOA (Quantity Bid Offer Acceptance) • Report Changes and • Scheduling and Dispatch 	<p>Market Participants and other key stakeholders have asked for all significant defects to be closed out before adding additional functionality to the Balancing Market. The Release Programme however, does facilitate a small number of Change Requests to add new functionality and to support modifications to the Trading and Settlement Code.</p>	<p>The scope of the work involves deployment, testing, release management and vendor management. Support resources will have to be procured in order to deliver this work.</p>

STATUS UPDATE: This programme of work is currently aiming to have two releases in 2020 and to go into the biannual release programme formally in 2021.

- 2) The **Multi NEMO Arrangements** project will impact on the Balancing Market. See Section A.

STATUS UPDATE: SEM Multi Nemo Arrangements will not commence in 2021. Further dialogue will take place with Regulatory Authorities on this.

- 3) All markets will undergo an **Evidence-Based Performance Review** to determine if there are any significant changes that should be investigated based on the performance of the markets so far.

STATUS UPDATE: This work has been moved back to Q4 2020 given the pressure on resources for other work. Inputs will be gathered from user groups' feedback, surveys, review of issues etc. to provide a summary of performance of the markets and proposals for where the focus should be in the short to medium term.

- 4) **Repricing** is a key function which was originally planned to start in 2020.

<p>Description: This project includes the deployment of functionality to deliver repricing when updated data is submitted into the system.</p>	<p>Business Case: There is a need to reprice the majority of days since Go-Live as a result of disputes and known issues etc. Repricing is a mandatory function in the Trading and Settlement code.</p>	<p>Risks, Assumptions and Delivery Impact: The scope of the work involves deployment, testing, release management and vendor management.</p>
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STATUS UPDATE: There have been challenges with the delivery of an enduring solution. It is re-scheduled to be delivered in 2021.

- 5) A Learning Management System was used very effectively during the I-SEM project to deliver scaled training to Market Participants. A similar **Participant Training** initiative would help to support learning across the industry. See Page 16 for Description etc.

STATUS UPDATE: Due to reprioritization and advancement of other work this has been pushed beyond 2021. Procurement has not commenced.

6) The **EBGL Balancing Energy Platforms** are initiatives of TSOs from across Europe to create a joint integrated balancing cross-border continuous and auction-based market for different timeframes close to real-time after the intraday market has closed.

<p>Description: The project would involve the SEM coupling with the EU balancing market which is currently only a local SEM market. It requires the local conversion of balancing bids, offers, and balancing needs, to the formats required for submission to the platforms being developed under Project TERRE (Trans-European Replacement Reserves Exchange) for Replacement Reserves, Project MARI (Manually Activated Reserves Initiative) for Manual Frequency Restoration Reserves, and processing the cleared results of those platforms in scheduling, pricing, and settlement.</p>	<p>Business Case: If the relevant aspects of the EBGL (Electricity Balancing Guideline) apply to the SEM, then this is mandated by the EU and is needed to be compliant. It enables continuous and auction-based cross-border trading across Europe in the balancing timeframe, giving Market Participants in the SEM access to a wider market and potential additional tools for the TSOs to aid in balancing, including the management of interconnector flows.</p>	<p>Risks, Assumptions and Delivery Impact: This is a very large project, with work spanning a number of years and involve rules modifications, solution design, build, test and deployment, contractual and procedural changes. This presents risks around staffing (and therefore other work), schedules, and assumes significant levels of regulatory support and support from existing service providers. It is assumed that the relevant aspects of the EU EBGL continue to apply to the SEM. Assumptions include regulatory capital approval.</p>
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STATUS UPDATE: Analysis on defining potentially compliant conceptual approaches has been carried out. Other projects have been prioritized and as a result it has been decided to push this consideration for the commencement of this project to the end of the year.

- 7) The **EBGL Local Code Review** is work which was not included in the original ISEM project but is required to ensure the local balancing market arrangements are compliant with the Electricity Balancing Guideline, either through evidence gathering or identifying changes needed to rules and systems.

<p>Description: This project is intended to highlight areas where local arrangements are compliant with the guideline, providing evidence for compliance tracking, and to highlight areas where the local arrangements are not compliant with the guideline. Areas of non-compliance feed into discussions on how to become compliant, such as modifications to the local codes, which would happen under this project, and if required change requests or other changes to systems and processes, which would constitute other projects.</p>	<p>Business Case: This is mandated by the EU and is needed to be compliant with EBGL (Electricity Balancing Guideline). It creates transparency and an equal playing field, ensuring and explaining how the same arrangements are present in the SEM as in other European markets, or highlighting changes needed to ensure this will be the case.</p>	<p>Risks, Assumptions and Delivery Impact: The work would take less than one year and involve analysis, legal review and rules modifications. This requires a moderate level of Subject Matter Expert input. There is a risk that some aspects of the local arrangements may be found to not yet be compliant, which would require new projects to be added requiring solution design, build, test and deployment.</p>
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STATUS UPDATE: Planning and preparatory work is underway.

D. Settlement

The strategy for Settlement is to fix outstanding defects and to focus on system stability and performance improvements. The [Known Issues Report](#) now includes a section which describes the areas being addressed with release details. Release (Release E) which was delivered in April 2020 contained a number of significant settlement fixes.

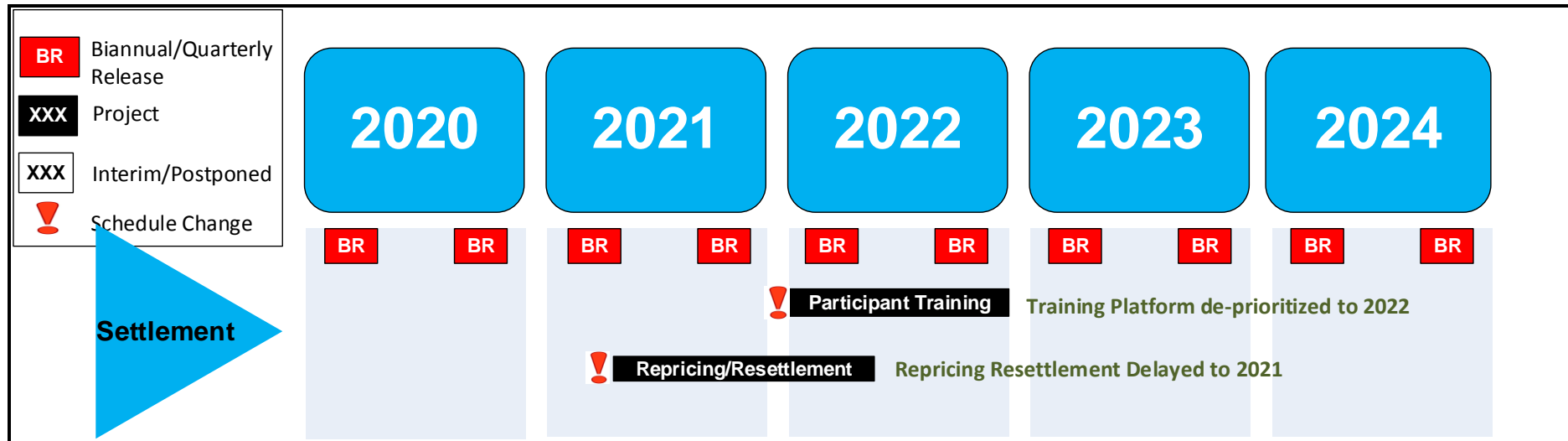


Figure 7: Settlement Roadmap

1) The release programme continues to deliver fixes for known Settlement defects.

<p>Description: It was known that the overall ISEM solution went live with a number of defects. Work has been done to address the issues related to performance, and as well as system changes to facilitate removal of settlement operational bottlenecks</p>	<p>Business Case: This is a major concern for Market Participants who have raised significant numbers of settlement queries.</p>	<p>Risks, Assumptions and Delivery Impact: Fixing defects requires vendor management, development, deployment and test. In addition the delivery of Operational risks relate to parallel running of multiple settlements.</p>
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STATUS UPDATE: M+4 and M+13 are both operational and hence the project to deliver the functionality and set up the necessary processes has been completed. However, additional fixes are planned for the later in 2020.

2) A major Repricing change request is due in early 2021 to address outstanding issues which are impacting Resettlement.

<p>Description: Resettlement (M+4, M+13 ad-hoc) is a key function but it needs other functional areas such as Repricing to work as key enablers.</p>	<p>Business Case: This is a major concern for Market Participants who have raised significant numbers of settlement queries. It is a code requirement and there is no alternative to resettlement.</p>	<p>Risks, Assumptions and Delivery Impact: Repricing functionality is required for full resettlement. Operational risks relate to parallel running of multiple settlements.</p>
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STATUS UPDATE: As Repricing has been delayed until April 2021, resettlement won't start until after the release goes in.

- 3) A Learning Management System was used very effectively during the I-SEM project to deliver scaled training to Market Participants. A similar **Participant Training** initiative would help to support learning across the industry. See Page 17 for details.

STATUS UPDATE: No change to the schedule for this project. Procurement has not commenced.

5. Project Scale & Status

The Roadmap includes a series of projects and initiatives of different sizes. The table below divides the projects into small, medium and large in order to show an estimate of the potential impact on Market Participants anticipated at this stage.

<i>Potential Impact on Market Participant Systems</i>	<i>Explanation</i>
Small	Minimal-little development on the Participant side
Medium	Some involvement (minor development testing etc.)
Large	Large scale development required

Table 2: Project Scales

Market	Project	Scale	Status
Ex-Ante	Multi NEMO GB (completed)	Small	Complete
Ex-Ante	EBPR ²	Small	In Progress
Ex-Ante	Participant Training	Small	Yet to commence
Ex-Ante	Registration and Transfer	Small	Brought forward-In Progress
Ex-Ante	Additional Products	Medium	In Progress
Ex-Ante	Website	Medium	Yet to commence
Ex-Ante	SEM Multi-NEMO Arrangements	Large	Yet to commence
Ex-Ante	EU Coupled Intraday Continuous	Medium	Yet to commence
Ex-Ante	EU Coupled ID Auctions	Medium	Yet to commence

Table 3: Ex-Ante Project Scale

Market	Project	Scale	Status
Capacity	State Aid DSU	Large ³	Yet to commence
Capacity	State Aid X Border	Large ⁴	In Progress ⁵
Capacity	Secondary Trading	Medium	In Progress
Capacity	Optimisation	Medium	Brought Forward-Yet to Commence
Capacity	Platform Inputs	Medium	In Progress
Capacity	Platform Outputs	Medium	In Progress
Capacity	Participant Training	Small	Yet to commence

Table 4: Capacity Project Scale

Market	Project	Scale	Status
Balancing	Repricing	Medium	In Progress
Balancing	SEM MNA	Large	Yet to commence
Balancing	Participant Training	Small	Yet to commence
Balancing	EBPR	Small	Yet to commence

² The Evidence Based Performance Review may drive other larger projects

^{3 & 4} In this case the changes specifically impact certain participant in a significant way

⁵ As interim approach is being advanced

Balancing	Release Defects/Mods	Medium	In Progress
Balancing	Local Code Review	Small	In Progress
Balancing	Balancing Platform	Large	Yet to commence

Table 5: Balancing Project Scale

Area	Project	Scale	Status
Settlements	Resettlements	Small	Complete
Settlements	Participant Training	Small	Yet to commence
Settlements	Release Defects/Mods	Medium	In Progress
Settlements	Repricing/Resettlements	Medium	Yet to Commence

Table 6: Settlement Project Scale