

Balancing Programme: Open Balancing Platform Programme Increment 11 Closure Report

29 May 2024



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Executive summary

Programme Increment (PI) 11 which ran from 31.01.24 – 23.04.24, was a transition PI for the Balancing Transformation programme due to having a live service to maintain as well as roadmap commitments, and an enhanced definition of done for features to include system testing. Our philosophy of a 20% capacity across the programme to deal with unplanned work (defects, observations and continuous improvements not directly related to later roadmap items) was largely adhered to with the exception of voided instruction improvements getting priority to address.

The team also sought a major objective in this PI – to deliver value each sprint to the control room, every 2 weeks, in addition to a large, functional change – Fast Dispatch. The first objective was delivered, and the Programme delivered 6 releases across the PI. The latter two releases were implemented as “Hands On” (so no control room downtime) setting a precedent for future change.

Fast Dispatch launched on 30th April 2024 and just missed the PI cut off due to performance issues that required fixing before deployment. The programme team have conducted a retrospective and root cause analysis to drive continuous improvements to address these issues going forward. Fast Dispatch has been very well received to date and the programme is looking forward to a larger number of instructions via OBP.





PI11 Completion Report (What we said & what we did)











PI11 Objectives Summary












The overall ‘PI11 Objective’ was: Repeated and sustainable continuous deployment of fixes, minor enhancements based on user feedback and delivery of our next industry milestone – Fast Dispatch.





Committed Objectives (What ‘We Said’ & What ‘We Did’):

-  Exceeded
-  Met
-  Partially Met
-  Not Met

PI11	Objective	Status	Description	Delivered Value
	Fast Dispatch released to Control Room to support users to utilise fast acting units to manage Frequency events.		Enables the control room to be able to quickly set a requirement, optimise, and send to deviate from the current position.	Released on 30 th April, 6 days after PI11 ended due to performance fixes.
	Continued improvement to resolve critical high price issues in the current implementation of optimisation and instruction creation.		Remedial actions to better handle rounding, and redeclaration patterns of dynamic data.	All high price issues closed with the exception of zero/break point related instructions which is a focus for PI12 given the interlock required with Elexon.

	<p>Continued improvement in platform and development ways of working.</p>		<p>Support for squad system test environments, including feature flag support & automated promotions; backup & restore.</p>	<p>We now have ways to instantly create team based OBP environments to shift-left test effort and build with greater confidence. This is key to enable the continuation of our sprint based releases and protect the control room from new functionality as it is incrementally delivered.</p>
	<p>First integration of metering with IEMS within test systems.</p>		<p>Integration with the Metering system.</p>	<p>Whilst the teams have done the work required to integrate with IEMS, there are enterprise security challenges that are being worked through for environments in CNI that will go into PI12.</p>
	<p>Development of the first phase of constraint margin, with integration with BM on constraints flow.</p>		<p>Integration with BM for more constraints related data, and development of functionality to start constraints management – initially constraints margins.</p>	<p>Integration of constraint related data implement for the happy path. Validation logic was not delivered and will be delivered in PI12</p>
	<p>Development components for OBP to support clock change.</p>		<p>Clock change components, as well as centralised graph development made available to other areas of OBP.</p>	<p>Components to support Clock Change completed, with build into the wider platform planned in for upcoming PIs.</p>
	<p>First phase for EDT shadowing with the development of EDT Adapter.</p>		<p>Creation of adapter to process EDT data.</p>	<p>Development of the EDT Adapter has started.</p>

	<p>First integration with SMP integration for contracts.</p>	 	<p>This will set the foundation and integration principles for SMP integration with OBP.</p>	<p>Interface specification for contracts agreed with SMP and development of the SMP Adapter has started.</p>
	<p>Analysis completed for potential long-term resolution of instruction rounding, pricing issues, and instruction creation.</p>		<p>This is an analysis on the end-to-end solution to address challenges with respect to rounding, pricing and instruction creation.</p>	<p>Further work to check on Step Change impacts with consultation on settlement impacts with Elexon. Initial Proof of Concept completed, and near term remediation identified in production optimisation component.</p>
	<p>Elaboration of the multi-cluster readiness architecture in preparation for OBP Strategic.</p>		<p>Design complete for multi-cluster architecture for OBP Strategic.</p>	<p>Designs provided to platform teams as part of the OBP Strategic management cluster build in Azure planned in PI12. Application design for multi-cluster will be done in PI12 for implementation in PI13.</p>
	<p>Updated Roadmap through to mid-2025 - at a capability level.</p>		<p>Capabilities created for OBP Roadmap (Epics and Milestones) through to mid-2025.</p>	<p>Capability roadmap in support of the industry roadmap published. Focus now shifts on elaborating the work in these capabilities for delivery.</p>
	<p>Discovery of OBP sending all instructions, including working with BM team to define their Release 6 and outlook for Release 7.</p>		<p>Understanding of the requirements and high-level architecture to enable all BM instructions (manually) from OBP.</p>	<p>Draft interface document for BM R6 created. Release 5 and 6 interlocked with BM. Playbacks of all instruction discovery planned for sprint 1 of PI12.</p>

	<p>Discovery of MDA as part of OBP.</p>		<p>Approach for introducing the MDA logic and optimisation model in OBP.</p>	<p>Completed comparison of BDO and MDA against combined requirement. Initial assessment of additional data required by MDA has been completed and factored into roadmap.</p>
	<p>Discovery of wind and roadmap for PEF integration, and possible feed back into BM.</p>		<p>Approach for utilising data related to wind units and forecasts in OBP.</p>	<p>Re-visit of the initial Wind discovery performed, with further sessions with Control Room SMEs. At a high level, proposed Capabilities created and placed in the near term Roadmap ready for further Discovery and Elaboration.</p> <p>PEF has been de-prioritised.</p>

- At the start of PI11 planning, 82 features/enablers were committed to be delivered to the definition of done. During PI11, there were 2 Features further committed to PI11. There were also de-scoping decisions during PI11 due to various reasons including scope increases and issues encountered in the platform space requiring vendor support.
- Taking all scoping and de-scoping decisions into consideration, the revised commitment for PI11 stood at 72 Features.
- Out of the 72 committed features/enablers, our Release Train delivered 65 committed features, and a further 4 stretch features. This resulted in a total of 69 features/enablers being delivered in PI11 to the definition of done, which was enhanced to include system test completion this PI. The team achieved **96%** with regards to the number of features post deferrals, and 84% on the original plan which is over the target 80% set each PI.
- In PI11, squads have also completed Elaboration for 3 Capabilities and 3 Features for PI12.

PI12 Plan (What we commit to do)

PI12 Programme Plan







At the Balancing Transformation ‘PI12 Planning Event’ the team produced the ‘PI12 Programme Plan’ which runs from 24.04.24 – 16.07.24. This details the ‘PI Objectives’ and the plan of which features & enablers will be delivered by the squads during each sprint of the PI (including the related risks, issues & dependencies to ensure successful delivery).









In the ‘PI12 Programme Plan’ the squads committed to delivering 61 features & enablers. Please note a stretch target is not committed at this time while we wait for new resource to arrive, they will be worked on if the squads have available capacity during the PI. This enables a clear focus on the next level of priority.







PI12 Objectives







Below is an extract of the PI12 Objectives from the ‘PI12 Programme Plan’.













 Committed  Stretch Target

PI12	Objective	Status	Description	Expected Value
	Extend OBP to support Profiles for all BM Units and Zones to prove underlying profile calculation logic.		Implementation of profile logic for all BM units and zones within OBP in advance of downstream logic (such as Constraints, Optimisation etc.). This extends the current scope of Small and Battery Zones.	Proves OBP profile calculations for all BM units and zones are aligned with existing industry and system expectations. This will provide confidence on the roadmap for taking over BM.
	Complete build of EDT and start EDL adapters to support progress towards proving and ultimately taking over in 2025.		Completion of the EDT adapter build, and the start of EDL adapter build. Completion of the EDL adapter will be in PI13.	The delivery of EDT adapter will support future proving of OBP EDT related logic and processing in “shadow” mode.
	“Instruction Remediation” – improvements to the end to end process to ensure that Optimisation and Instructions are able to be sent without the need for corrective intervention.		Improvement to the end to end processing with OBP to reduce the number of voided instructions, the need for Control Room to manually decline instructions due to High Price, and improving optimality in proposed	Reduction in manual inspection and intervention by Control Room on proposed instructions. The ability to reduce MFTT will lead improved optimality and therefore cost of

PI12	Objective	Status	Description	Expected Value
			instruction set in the Small zone with reduced MFTT.	optimisation for small BMUs.
	Ability for OBP to receive Contract, Unit related and Metering data.		OBP integration with IEMS and SMP for Metering and Contract data.	Receiving Metering and Contract data from their master data source provides the foundation for using the data in OBP processes and screens. These will be developed in PI13, or as a stretch in PI12.
	Develop a Constraints Margins situational awareness screen.		Screens for Control Room to monitor Constraints Margins within OBP.	The ability to monitor limits and margins within OBP is the start of the roadmap for Constraint Management in OBP, and is a key step to decommission BM. The ability to take action to address Constraint issues will be delivered in a later PI.
	OBP will be Clock Change compliant.		OBP screens will be able to handle and display data to Control Room during clock change periods in a manner that is unambiguous and OBP will be operationally available during such periods.	OBP would be available for use during clock change periods (including before and after the clock change event) without the need for any special actions by the Control Room.
	Improved UI framework to support a multi window solution enabling improved UX and situational awareness.		Technical enhancement to the OBP UI framework to support multi-window.	This provides a scalable UI architecture for OBP to support future functionality. The multi UI framework approach should also lead to delivery efficiencies for UI.

PI12	Objective	Status	Description	Expected Value
				Early delivery of the framework will also help to reduce technical debt & regret cost as the functional landscape of OBP broadens to cover more BM functionality.
	Feature Flag implementation enabling efficient multi-squad/component deployment for faster value realisation.		Improved delivery tool to support efficient delivery over multiple squads and components; with enabling configurable testing and delivery of functionality.	This should provide an increase in delivery scalability, which will lead to increased velocity overall. The ability to enable/disable code/feature will lead to improved test and release management, ultimately providing faster value realisation to the Control Room.
	Improved WoW: Development/Pipelines, Testing model, PI Readiness and Roadmap tracking (with Jira).		Continued programme maturity and evolution, with improved WoW across multiple phases of programme delivery.	Increased velocity in the delivery path to production will lead to faster realisation of value. Programme planning (PI, Roadmap) within Jira should increase visibility and allow the programme to focus on areas that may need support, again leading to increased velocity and efficiencies.
	CNI Observability in the Cloud and build of first OBP Strategic ORT cluster in Azure.		Additional environment builds in Azure and CNI Observability in the cloud enabled.	CNI Observability in the cloud will allow further controlled access to logs and metrics from CNI environments allowing

PI12	Objective	Status	Description	Expected Value
				<p>more efficient resolution of issues.</p> <p>OBP Strategic is necessary for the movement of functionality from BM to OBP and it is dependent on the build of the OBP cluster.</p>
	Manual Instructions to prove ability to create and manage all instructions from OBP (prioritising alignment to BM R6).		Complete elaboration that outlines the approach to send all types of BM instructions from OBP.	Fully elaborated features that can be implemented in PI13/14 – for the ability to issue and manage manual instructions for all BM units from OBP.
	Start discovery of Dynamic Response services to underpin building both Non-BM and BM in OBP as a single service provision.		Discovery of Dynamic Response for OBP.	<p>The discovery of the OBP model for Dynamic Response to support operating both BM and Non-BM as a single service will provide assurance for the delivery of the BM service in OBP (2024/5), in advance of the Non-BM integration (late 2025).</p> <p>This provides both the foundation for build of BM service in 2024, and also assurance and reduction of risk of technical debt, for the later Non-BM integration.</p>
	Pump Storage management in OBP.		Discovery of Pump Storage management.	Fully elaborated features for first phase of Pump Storage delivery for PI13, and lays the ground work for elaboration of phase 2 and 3 of

PI12	Objective	Status	Description	Expected Value
				Pump Storage in later PIs.
	Complete design of OBP Strategic including design review and failure analysis.		Complete elaboration so that squads can start application changes in PI13. Hold an extended design review including participation from a resilience SME.	OBP Strategic is necessary for the movement of functionality from BM to OBP and it is dependent on this design activity.
	State of Charge (GC0166) Industry Consultation and progress into Elaboration ready for PI13.		Continued support of industry discussions and consultation on State of Charge (GC0166).	ESO and OBP are keys participants in the State of Charge consultations, and ensure readiness for implementation once approved.
	Preparation for Non-BMU Onboarding and understanding of new Non-BM Reserve Services.		Discovery of the onboarding of Non-BM services and units to OBP.	This provides the discovery foundation for OBP to support Non-BM, in a harmonised and agnostic architecture with BM units.
	Dispatch/Optimisation discovery for Pump Storage, Wind and Price Stack based approaches.		Discovery of the Optimisation modelling and impacts on the End to End journey for supporting Pump Storage, Wind and Price stack based requirements.	Preparation for moving this vital functionality to OBP.
	UI/UX vision for multi function/screen OBP.		Development of the guidelines and principles for future UI/UX design for OBP.	A modern UI/UX will provide improved user experience and ease of use and improved visibility / understandability.
	Continued MDA discovery.		Continued discovery for scheduling and longer optimisation timeframes.	This provides the understanding for developing scheduling functions as part of the later roadmap.

Abbreviations:

- **BDO:** Bulk Dispatch Optimiser
- **BM:** Balancing Mechanism
- **BMU:** Balancing Mechanism Unit
- **BP2:** Business Plan 2
- **CHT:** CNI Health Team
- **CNI:** Critical National Infrastructure
- **EDL:** Electronic Dispatch Logger
- **EDT:** Electronic Data Transfer
- **IEMS:** Integrated Energy Management System
- **MDA:** Modern Dispatch Advisor
- **MFTT:** Minimum Flat Top Time
- **MPLS:** Multiprotocol Label Switching
- **OBP:** Open Balancing Platform
- **ORT:** Operational Readiness Testing
- **PEF:** Platform for Energy Forecasting
- **PI:** Programme Increment
- **SME:** Subject Matter Expert
- **SMP:** Single Markets Platform
- **SRE:** Site Reliability Engineer
- **UI:** User Interface
- **UX:** User Experience
- **WoW:** Ways of Working