



August 2023 Release

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IESS ADC and FFR (Part 1) Release Industry Go-live Plan

Important notice

PURPOSE

This paper describes the go-live approach with respect to the upgrade of AEMO's wholesale systems for the 9th August 2023 release, comprising of system changes for Integrating Energy Storage Systems (IESS) Aggregated Dispatch Conformance (ADC) and Fast Frequency Response (FFR) – Part 1.

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VERSION CONTROL

Version	Release date	Changes
0.1	19 June 2023	Draft released to the Implementation Forum for comment

Executive summary

On 09 August 2023 AEMO will implement a software release (“August release”) across its Wholesale systems supporting AEMO’s reform delivery program for electricity under the NEM Reform Program.¹ The release introduces changes to support Fast Frequency Response (FFR) Part 1 and the second release for Integrating Energy Storage Systems (IESS) - Aggregated Dispatch Conformance (ADC).

AEMO has a key coordination role, through collaboration with its industry working groups, to ready Industry and itself for the various system and market “go-live” dates. This document describes the go-live approach with respect to the upgrade of the relevant systems for the August 2023 release.

At a high level, the go-live responsibilities are set out below:

- AEMO to facilitate Industry Tests for the August 2023 release (for ADC)
- AEMO to enable the market software to commence operations in line with rule requirements
- Participants to complete their preparations in readiness for the August 2023 release

¹ For more information on AEMO’s NEM Reform Program see: <https://www.aemo.com.au/initiatives/major-programs/nem2025-program/about-nem2025-program>

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1. Introduction

This chapter describes the implementation of the Australian Energy Market Operator's (AEMO) August 2023 Release under the NEM Reform program.² This document covers IESS ADC and FFR go-live activities and then details the purpose and context of the release Go-Live Plan.

1.1 August 2023 Release

The August Release includes changes associated with IESS Aggregated Dispatch Conformance (ADC) and Fast Frequency Response (FFR) - Part 1. It covers the procedural, IT system and market readiness arrangements needed to implement the August Go-Live Plan across the following categories:

- Procedures – defines and implements the required changes to market procedures
- Systems – designs, develops, tests, and implements changes to AEMO's market systems
- Readiness – coordinates, assists, and prepares AEMO and participants to transition to the ADC and FFR changes.

AEMO's August Release has entered the implementation planning phase. This paper relates to the go-live planning for the August Release.

1.1.1 IESS Aggregated Dispatch Conformance

In December 2021, the AEMC made the final rule on Integrating Energy Storage systems (IESS) to better integrate storage and hybrid systems into the National Electricity Market (NEM). Implementation of IESS by AEMO will be achieved in three stages.

Implementation date	Change	Description
INITIAL RELEASE Fri 31 Mar 2023	SGAs can provide contingency frequency control ancillary services.	Complete. Aggregators of small generating and storage units can now provide ancillary services (if they choose to do so). Information and resources for Small Generation Aggregators are available here .
AUGUST RELEASE Wed 09 Aug 2023	Aggregated dispatch conformance	Aggregate Systems can choose to register for aggregated dispatch conformance (ADC). ADC provides an Aggregate System with the flexibility to conform to dispatch instructions by dispatching energy at the connection point from any combination of its units (with some restrictions), rather than individually on a unit-by-unit basis. A fact sheet on ADC is available here .
JUNE RELEASE Sun 02 Jun 2024	IESS retail and settlement changes	Impacts to Financially responsible market participants (FRMPs) through significant changes to the calculation method to be used for the Non-Energy Cost Recovery (NECR) items: <ul style="list-style-type: none">• Recovery calculations are to consider the gross (consumption separate from generation) energy amounts of all participants, rather than current approach using net energy (generation – consumption) of specific participant types

² For more information on AEMO's NEM Reform Program see: <https://www.aemo.com.au/initiatives/major-programs/nem2025-program/about-nem2025-program>

Implementation date	Change	Description
		<ul style="list-style-type: none"> Major settlements database structure changes are required to enable the new calculations, these changes will flow into the Data Model and affect: <ul style="list-style-type: none"> Participant reconciliation and reporting activities AEMO data provision Embedded network management changes to ensure that the parent has the appropriate gross energy volumes available for settlement.
JUNE RELEASE Mon 03 Jun 2024	IESS registration, classification and bidding changes	Introduction of Integrated Resource Provider (IRP) participant type and bi-directional unit (BDU) bidding, scheduling and participation, with impacts for BDU participants and bidding system vendors/developers.

The ADC project will introduce changes to the AEMO wholesale systems and the EMMS Data Model.

1.1.2 Fast Frequency Response

The AEMC made a final rule on 15th July 2021 that requires AEMO to define and implement a Fast Frequency Response Market Ancillary Service to commence on 9 October 2023. The final rule requires the introduction of two new market ancillary services in the NEM under the existing frequency control ancillary services (FCAS) arrangements, accompanied by additional reporting requirements.

The new market ancillary services (Very Fast Raise and Very Fast Lower Contingency FCAS) will allow for FFR to be procured by the Australian Energy Market Operator (AEMO) in the form of very fast services to help control power system frequency following sudden and unplanned generation or power system outages, known as contingency events.

The rule required AEMO to revise the Market Ancillary Services Specification (MASS) to specify the detailed description and performance parameters for the new very fast services, completed on 7th October 2022. On 9th August, registration for Very Fast FCAS formally opens, to enable interested participants to apply to register for Very Fast FCAS in preparation for market start on 9th October. Dispatch system updates will also commence on 9th August to allow dispatch data accumulation (minimum 4 weeks) in the event of a market suspension event shortly after Market Start.

The following participant types will be able to apply for registration:

- Market customers with scheduled loads,
- Market generators with scheduled and semi-scheduled generating units
- DRSP, market customers and SGA with non-scheduled loads

A second release of FFR to support the rule effective date (9th October), introduces settlements and billing system updates for VF FCAS services and commences dispatch for VF FCAS.

The FFR project will introduce changes to the AEMO wholesale systems and the EMMS Data Model.

1.1.3 5.2 EMMS Data model

Changes to the EMMS data model required to support the ADC and FFR implementations for the August Release were included in the May Release.

These changes are documented in the EMMS Technical Specification.³

1.2 Document purpose & approach

This document describes the go-live approach for the August 2023 release with respect to the deployment of Wholesale system enhancements.

The August 2023 Release Industry Go-Live plan is developed in consultation with industry through the Implementation Forum. Table 1 below illustrates AEMO's engagement approach and timeline for developing the plan.

Table 1 August Release Go-Live Plan development timeline

Milestone	Date
Initial engagement with ADC Industry Test Stakeholders	15 June 2023
Engagement with the Implementation Forum	27 June 2023
Publish final plan	15 July 2023

2. August 2023 Release Go-live Plan Framework

2.1 Scope

- In scope
 - Deployment of Wholesale system changes to support the implementation of IESS ADC
 - Deployment of Registration, Portfolio Management (PMS) and Dispatch system changes to support the implementation of FFR (Part 1):
 - Deployment of EMMS 5.2 Data Model.
 - Communications during deployment.
 - Support arrangement during the go-live period.
- Out of scope
 - Deployment of FFR (Part 2) is planned for 9th October 2023.
 - Participant Contingency plans.

³ [EMMS - Technical Specification - Data Model v5.2 - May 2023 \(aemo.com.au\)](#)

2.2 Principles

The industry transition and go-live strategy principles apply to the August 2023 Release changes. These are:

1. Mandated ADC and FFR commencement dates should be met
2. NEM operations should be uninterrupted during periods of transition and go-live
3. Market system go-live risks should be minimised
4. Participants should be provided with implementation flexibility where possible
5. Participants and AEMO are responsible for their own go-live planning.

3. August 2023 Release Industry Go-Live Plan

3.1 Industry Testing

Industry testing for ADC will be by invitation to existing “ADC” participants and BESS participants.

- 20th April - Data Model 5.2 supporting ADC changes was released to Pre-Prod
- 6th July - ADC capability will be released to the Pre-Prod environment
- 7th to 10th July – activities to transition Aggregates and Bess to new ADC model
- 10th July to 8th August – industry test period
- 9th August - Registration for ADC will be available to support other intending participants

There will be no Industry testing for FFR – Part 1, in the lead up to the 9th August release.

There will be Industry testing in relation to FFR – Part 2, as described in the Industry test approach available at <https://aemo.com.au/initiatives/major-programs/fast-frequency-response>.

3.2 Go-live plan

The August release contains two separate releases for the ADC and FFR (Part 1) Wholesale Systems.

EMMS 5.2 Data Model was deployed to production on 23rd May 2023.

The Wholesale Systems production deployment for the August Release is scheduled for 9th August 2023.

There will be no outage for this deployment and no participant impact.

3.3 Communications

Correspondence regarding the go-live will be released through AEMO Support Hub bulletins and the NEM Reform mailbox, NemReform@aemo.com.au.

There are three categories of cutover communications that participants will receive:

- General progress updates – provide participants with information about the status of implementation activities via the NEM Reform mailbox
- Support Hub Notices – provides information to the market on Software releases including notifications of releases and outage completion.
- Issues – should any issues arise or deviations from the previously communicated processes, participants will be notified through the NEM Reform mailbox. If the issue or deviation is in relation to a notice previously sent through AEMO’s Support Hub Notices, participants will receive a communication through this channel (via the AEMO IT Duty Manager) in addition to the NEM Reform mailbox. Participants experiencing issues as result of the go-live should raise these incidents directly via the AEMO Support Hub.

3.4 August Release Industry Go Live schedule

The steps for the implementation of AEMO market system changes and associated communications are outlined in Table 2. Note: the EMMS 5.2 Data Model changes for ADC and FFR were released to Production on 23rd May 2023.

Table 2 August 2023 Release Schedule

#	AEMO actions	Industry Impacts and actions	Planned Time (Market Time)	Communication Channel
ADC				
	SO_OP_3705 Dispatch Final		13 February 2023 (Effective 9 August 2023)	AEMO website
PREPARE PRE-PRODUCTION ENVIRONMENT				
	AEMO will implement changes to its Registration and Dispatch systems in the pre-production environment. Note EMMS 5.2 Data Model was released to pre-production on 20 April 2023	No Outage. No impact to Participants. Participants who intend to receive updated ADC information to upgrade test environment to EMMS data model 5.2	Prior to Mon 10 July 2023	n/a
	AEMO transitions aggregates and BESS to new ADC model	No Action required from Participants	Prior to Mon 10 July 2023	n/A
	AEMO notifies Target Aggregates and existing Aggregate Systems that industry test period has opened	Target Aggregates and existing Aggregate Systems can choose to undertake ADC test activities	Mon 10 July 2023	Email to participants who have indicated to AEMO that they would like to participate in pre-production testing.
		Invitation Industry test Period commences	Mon 10 July 2023	
PREPARE PRODUCTION ENVIRONMENT				

#	AEMO actions	Industry Impacts and actions	Planned Time (Market Time)	Communication Channel
	AEMO will implement changes to Registration and Dispatch systems in Production. Note: EMMS 5.2 Data Model was released to Production on 23 May 2023.	Impacted Participants to upgrade to latest data model.	Prior to Wed 09 August 2023	Support Hub Notification
	AEMO notifies Target Aggregates and existing Aggregate Systems they will be placed on aggregate conformance and need to subscribe to the new DISPATCH_CONFORMANCE reports to reconcile their conformance status.	Target Aggregates and existing Aggregate Systems prepare to go live.	Prior to Wed 09 August 2023	<ul style="list-style-type: none"> Email to NEM Reform Implementation Forum members and affected Participants Discussion at Implementation Forum (Tues 25 Jul).
ADC GO-LIVE				
	AEMO notifies Target Aggregates and existing Aggregate Systems that new ADC arrangements are operational.	Target Aggregates and existing Aggregate Systems are advised that the new ADC arrangements are operational.	Wed 09 August 2023	<ul style="list-style-type: none"> Email to NEM Reform Implementation Forum members and affected Participants.
		Participants who intend to receive updated ADC information to upgrade production environment to EMMS data model 5.2		<ul style="list-style-type: none">
	AEMO notifies stakeholders when ADC registrations open.	Stakeholders are advised that AEMO has opened ADC registration.	Wed 09 August 2023	<ul style="list-style-type: none"> Email to NEM Reform Implementation Forum members and affected Participants A notification will be posted on the IESS project website "NEM Reform Announcement" e-newsletter to

#	AEMO actions	Industry Impacts and actions	Planned Time (Market Time)	Communication Channel
				subscribers of newsletter.
POST GO-LIVE INDUSTRY SUPPORT				
	AEMO to facilitate ADC industry Q&A session if there is sufficient demand from participants.	Participants to advise AEMO if ADC Q&A required	Aug/Sep 2023 (date TBC)	<ul style="list-style-type: none"> NEM Reform Implementation Forum iess@aemo.com.au
FFR				
1	MASS v8 published		14 Oct 2022	AEMO Website
2	AEMO processes notifications from participants requiring amendment to existing FCAS registrations (to comply with MASS v8). Refer to Final Service Commencement Plan	<p>Participants to submit Schedule 3.1 bid and offer validation data notification form or use the Portfolio Management System (PMS) to have their maximum market ancillary service capacity amended by 26th August, to be made effective from 9th October 2023.</p> <p>Note – this revision is fee-free.</p> <p>Participants unsure whether their registrations will be impacted to contact AEMO at Support Hub.</p>	Prior to 26 th August	n/a
3	Pre-registration technical assessments for existing Fast FCAS providers available from 1 May, to provide provisional confirmation of VFFCAS maximum capacity. Refer to Final Service Commencement Plan	Participants to contact AEMO if seeking to engage in pre-registration technical assessments.	Monday 1 May to 9 August 2023	n/a
PREPARE PRODUCTION ENVIRONMENT				
	AEMO deploys wholesale systems changes.	No Outage. No impact to Participants. Participants who intend to receive updated ADC	Wed 9 August 2023	Support Hub Bulletin

#	AEMO actions	Industry Impacts and actions	Planned Time (Market Time)	Communication Channel
	Note EMMS 5.2 Data Model was released to Production on 23 May 2023.	information to upgrade test environment to EMMS data model 5.2		
FFR GO-LIVE				
	FFR Registrations Go Live Registrations for VF FCAS formally opens in preparation for Rule commencement 9 October 2023	Participant Types affected: those interested in registering to participate in VF FCAS to submit registration application.	Wed 9 August 2023	
	AEMO notifies Participants that Registrations open for VF FCAS services.		Wed 9 August 2023	<ul style="list-style-type: none"> Email to NEM Reform Implementation Forum members and affected Participants. A notification will be posted on the FFR project website. "NEM Reform Announcement" e-newsletter to subscribers of newsletter
				<ul style="list-style-type: none"> NB FFR Go Live Plan for FFR Part 2 to address subsequent activities for 9 October rule commencement
POST GO-LIVE INDUSTRY SUPPORT				
	AEMO to facilitate FFR industry Q&A session if there is sufficient demand from participants.	Participants to advise AEMO if FFR Q&A required	Aug/Sep 2023	<ul style="list-style-type: none"> NEM Reform Implementation Forum ffr@aemo.com.au

An Industry Test plan for FFR will be published on 31 Jul 2023. The Industry Test Approach was released on 30 May 2023 at AEMO's NEM Program Implementation Forum.

An Industry Go Live Plan (Final) that covers actual VF FCAS market commencement on 9 Oct 2023, will be published on 1 Sep 2023.

4. Participant Support Arrangements

Participants should use AEMO's BAU support channels and raise all issues and incidents with the Support Hub. The NEM Reform mailbox will remain open for general queries relating to the August 2023 Release.

4.1 Support Arrangements for preparing for August 2023

The NEM Reform Program will support participant preparations for the August 2023 Release through:

- Planning and facilitation Industry test approaches for ADC, FFR (Part 1) and EMMS changes.
- Progress and Issue management during Industry Test.
- Continued operation of Industry working groups including Implementation Forum and the Industry Test Working Group (ITWG).
- Participant queries will be managed through the NEM Reform mailbox.

4.2 Production Support

All production issues should be raised via Support Hub and will be managed through the current Retail system support processes.

4.3 Participant Support Arrangements for August

Support Hub will remain the main point of contact for issues, incidents and queries post 9th August.

Industry Q&A sessions will be arranged following the Go-live should there be demand from Participants. Questions from participants can also be directed via the NEM Reform mailbox.

Glossary

This document uses many terms that have meanings defined in the National Electricity Rules (NER). The NER meanings are adopted unless otherwise specified.

Term	Definition
ADC	Aggregate Dispatch Conformance
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AGC	Automatic Generation Control
ASL	Ancillary Service Load
BAU	Business as Usual
BDU	Bi-directional Unit
BESS	Battery Energy Storage System
Cutover / Go-live	System implementation event
CR	Change Request
CRMP	Cost Recovery Market Participant
DRSP	Demand Response Service Provider
DUID	Dispatchable Unit Identifier
EMMS	Electricity Market Management Systems
FCAS	Frequency Controlled Ancillary Service
FRMP	Financially Responsible Market Participant
FFR	Fast Frequency Response
ICF	Issue/Change Form
IESS	Integrated Energy Storage System
IF	Implementation Forum
IRP	Integrated Resource Provider
IRS	Integrated Resource System

Term	Definition
ITFG	Industry Testing Focus Group
MSGGA	Market Small Generation Aggregator
NECR	Non-energy Cost Recovery
NEM	National electricity market
NEMDE	National Electricity Market Dispatch Engine
NER	National electricity rules
PD	Pre-dispatch
PMS	Portfolio Management System
SCADA	Supervisory control and data acquisition
Transition	Process of shifting from current to future operating state
VFFCAS	Very Fast FCAS