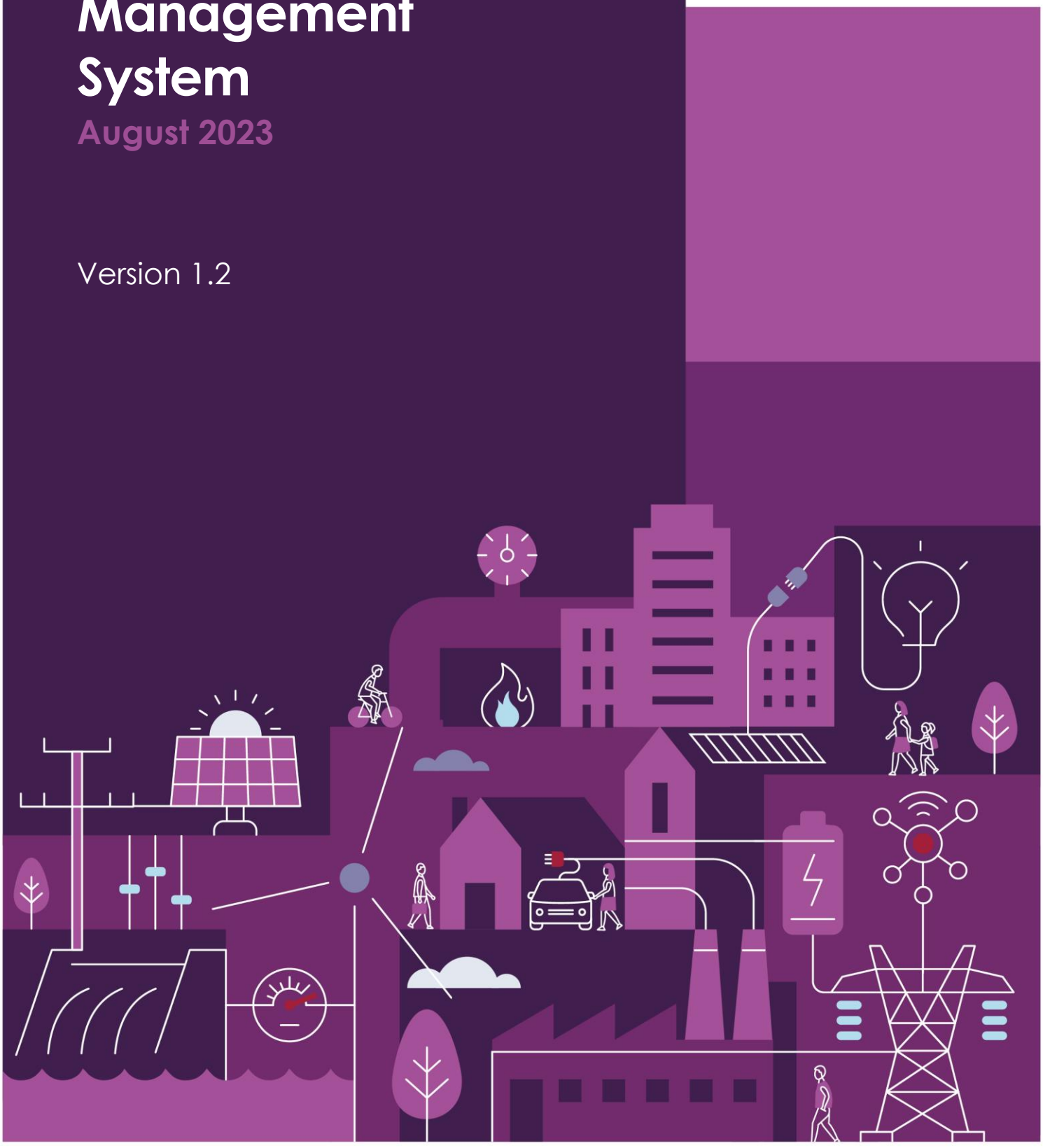
WEMS MPI User Guide: Outage Management System

August 2023

Version 1.2



Important notice

Purpose

AEMO has prepared this document to provide information about the Outage Management System (OMS) support process available to Market Participants for the Wholesale Electricity Market System (WEMS), as at the date of publication.

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Version control

Version	Release date	Changes
1.0	January 2023	Initial release
1.1	March 2023	Updated to account for Release 2.0 changes
1.2	July 2023	Updated for final release

AEMO acknowledges the Traditional Owners of country throughout Australia and recognises their continuing connection to land, waters and culture. We pay respect to Elders past and present.

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1 Introduction

The purpose of this document is to describe the functions and capabilities of the Wholesale Electricity Market System Market Participant Interface and act as a guide to users. The WEMS Market Participant Interface (WEMS MPI) is the medium between the Market Participant and AEMO to exchange and submit registration information, trading submissions, and facilitate the extraction of reports.

This document is intended for WEMS MPI users.

2 System Requirements

Please refer to the Market Procedure: Data and IT Interface Requirements for more information on the necessary technical details and standards, software and hardware specifications, and security standards required for Market Participants to operate in the Wholesale Electricity Market (WEM).

3 Accessing the System

The WEMS MPI is located at https://wems.aemo.com.au/mpi

Upon visiting the site, the MPI will require the user to authenticate with their WEMS RSA SecurID token before the user is able to access the MPI. The RSA SecurID token can be identified by the RSA SecurID dark blue and red logo with white writing (see Figure 1).

New users must apply for WEMS access by contacting their Market Participant Administrator (MPA) as well as completing the WEMS Token Request Form. This form, along with the RSA Quick Reference Guide, is available from the MPI login page or from WA Market Operations & Support at wa.operations@aemo.com.au.

New users must also be assigned the appropriate roles by their MPA to ensure they have the correct access privileges. Refer to the Market Participant Administrator Guide for more information.

RSA SecurID tokens are managed and issued by AEMO; however individual roles and user accounts are managed by each MPA.

Figure 1 RSA SecurID token example

Figure 2 WEMS MPI login screen

Figure 3 Navigating to Outage Management System interface

4 Outage Management System

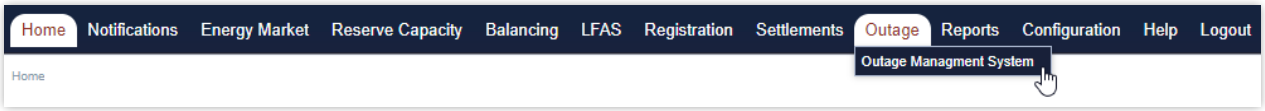
This section, in future, should be read in conjunction with the WEM Rules and the WEM Procedure: Outage Management and the Outage Management Technical Specifications.

For assistance with the Outage Management System, contact WA Operational Planning and Forecasting at wa.outages@aemo.com.au.

4.1 Outage Management Interface

To access the Outage Management System, login to the WEMS MPI and select the following dropdown and link: **Outage > Outage Management System**. (Figure 4)

Figure 4 WEMS Outage Header



The Outage Management landing page (Figure 5) contains a list of outages submitted by the Market Participant and summarises some key details of each submission, as listed in Table 1.

Figure 5 Outage Management Landing Page

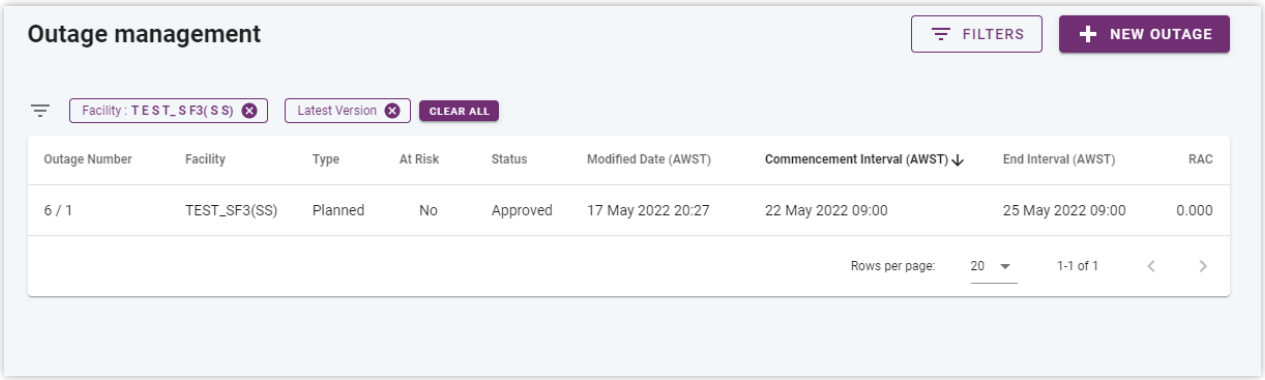


Table 1 Outage Management Table Contents

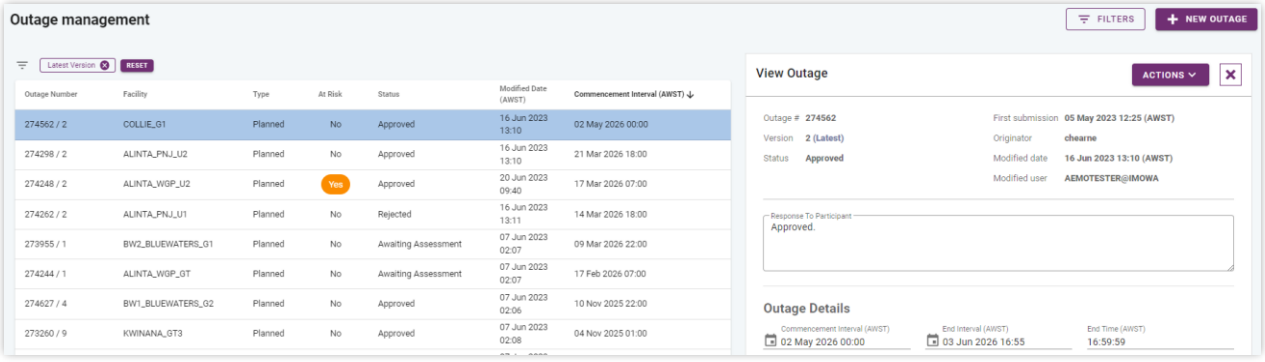
Column ID	Description
Outage Number	A unique ID given to an Outage Submission by the Outage Management System. The number proceeding the '/' indicates the Outage version.
Facility	The Registered Facility detailed in the Outage Submission.
Type	The type of Outage, with the following meanings: A. Planned Outage B. Opportunistic Outage

Column ID	Description
	C. Forced Outage
At Risk	An identifier set by AEMO to warn that the Outage Submission is at risk of rejection at any time prior to the Commencement Interval based on conditions provided as part of the approval process.
Status	The status of the Outage, with the following meanings: • Awaiting Assessment – the submission was successful and is awaiting assessment by AEMO. • Approved – the submission was approved by AEMO. • Rejected – the submission was rejected by AEMO. • Recalled – the submission was recalled by AEMO. • Requires More Info – AEMO requires more information on the outage submission. • Withdrawn – the submission was Withdrawn (cancelled) by the Market Participant. • Accepted – the Outage Management System has automatically accepted the submission (applicable to Forced Outages only). See Appendix 1 for workflows relating to the Outage states above.
Modified Date (AWST)	The date and time that the submission was modified.
Commencement Interval (AWST)	Indicates the Commencement Interval of the Outage in 5-minute intervals (AWST format).
End Interval (AWST)	Indicates the End Interval of the Outage in 5-minute intervals (AWST format) including the period of 5 minutes of the specified End Interval. i.e., an End Interval of 08:00 ends at 08:04:59.
RAC (Remaining Available Capacity)	The Remaining Available Capacity of the Outage Facility during the period of the Outage Submission.

By default, Outage submissions on the landing page are sorted by Commencement Interval (AWST) in descending order. Further sorting can be achieved by clicking on any column heading to sort outages in either ascending or descending order.

To view an Outage Submission, click on an outage record. The read-only view outage screen will be displayed with the selected Outage details to the left or at the bottom of the screen depending on the screen resolution.

Figure 6 View Outage



Within the View Outage screen, details pertaining to the outage submission (under the header) and any updates by AEMO will be shown just below this section under the header “Response to Participant”.

Table 2 View Outage

ID	Description
Outage #	A unique ID given to an Outage Submission by the Outage Management System.
Version	The version of the outage with the current version having "(Latest)" alongside the version number.
Status	The status of the Outage, with the following meanings: • Awaiting Assessment – the submission is awaiting assessment by AEMO. • Approved – the submission has been approved/auto-approved by AEMO. • Rejected – the submission has been rejected by AEMO. • Recalled – the submission was recalled by AEMO. • Requires More Info – AEMO requires more information on the outage submission. • Withdrawn – the submission was Withdrawn (cancelled) by the Market Participant. • Accepted – the Outage Management System has automatically accepted the submission (applicable to Forced Outages only). See Appendix 1 for workflows relating to the Outage states above.
First submission	The date/time in which the outage was First Submitted to AEMO.
Originator	The user ID of the person who submitted the outage.
Modified date	The date/time in which the outage was modified (by either AEMO or the Market Participant).
Modified user	The user ID of the person who modified the outage.

Table 3 AEMO Updates

ID	Description
Response to Participant	AEMO's response to the Market Participant during the assessment process.

4.2 Outage Management Filtering

By default, the Outage management page shows all latest versions of Outage submissions (limited to 20 rows on the first page). To change the filter on this view:

1. Select "Filters" in the top-right of the Outage management page to open the filter window (Figure 7).
2. Select filter criteria to be applied. 0 details the criteria which can be selected for filtering.
3. Select "Filters" to apply the selected criteria to the Outage management table.
4. The applied filters will be listed at the top of the Outage management page (Figure 8).
5. Applied filters can be edited by selecting "Filters" again, editing the selected filter criteria, and selecting "Apply Filters" again.
6. To clear filters, click the "Reset" button at the top right of the filter pane (Figure 7) or on the Outage management page (Figure 8) – this will reset filters to Latest Version. Filters can also be cleared individually by clicking on (x) next to each filter on the Outage management page.

Figure 7 Outage Management Filter Window

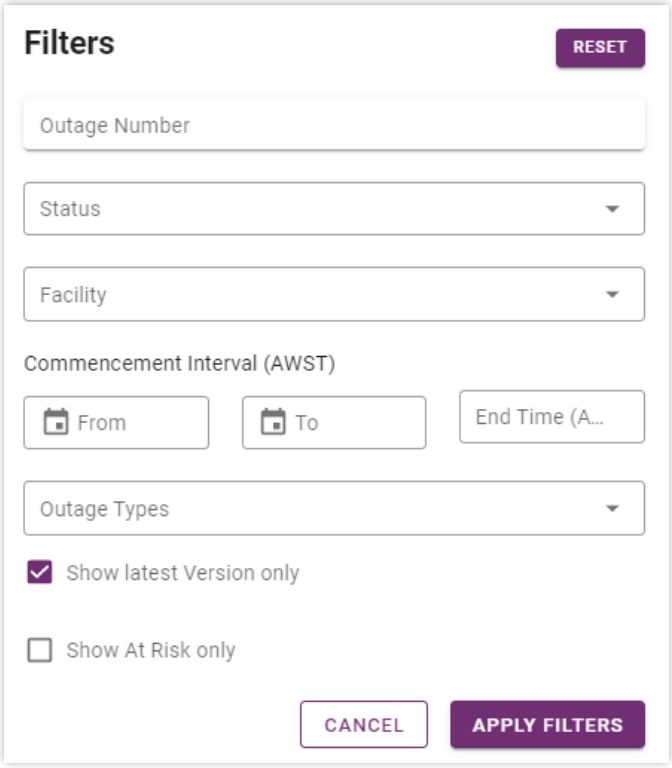
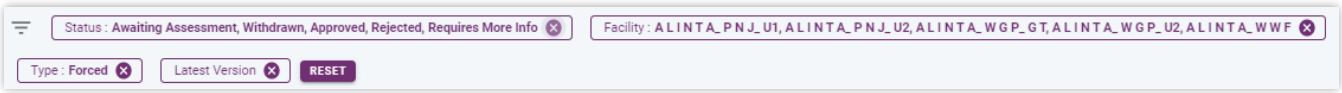


Figure 8 Filters Applied to the Outage Management Page



The table below describes the type of filtering options available.

Table 4 Outage Management Filter Options

ID	Description
Outage Number	The number(s) pertaining to an Outage.
Status	Status of the Outage(s).
Facility	The Facility/Facilities included in the submission
Commencement Interval (AWST)	The datetime range of Outages by Commencement Interval
Outage Type	The type of Outage (Planned, Opportunistic or Forced).
Show latest Version only	Show only the latest version of each Outage Number. By default, “Show latest Version only” is selected and upon resetting filters
Show At Risk only	Show only the Outages set to At Risk by AEMO.

5 Outage Submission

A Planned, Opportunistic or Forced Outage can be created by selecting the “New Outage” button at the top right of the Outage management page (Figure 5).

Complete the details using the drop-down boxes and input fields where applicable.

The sections below describe each of the submission subheadings and their related fields.

5.1 Outage Details

The Outage Details section (Figure 9) details information about the Outage timing, Facility, type of Outage and a description of the Outage.

This is a common requirement to all Outages.

Figure 9 Create Outage: Outage Details

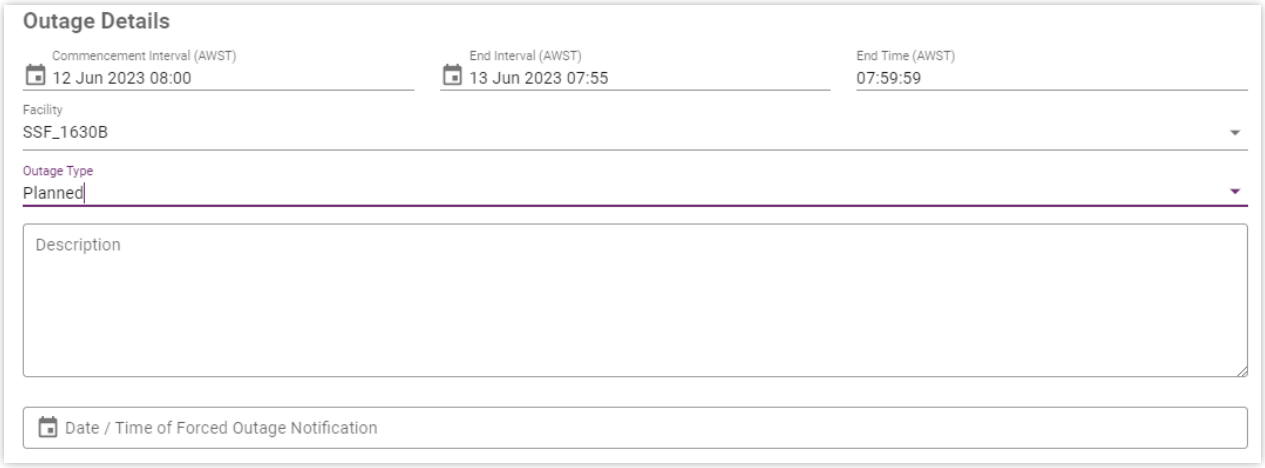


Table 5 Create Outage: Outage Details

Field	Data Type	Description
Commencement Interval (AWST).	Datetime picker.	Indicates the Commencement Interval of the Outage in 5-minute intervals (AWST format).
End Interval (AWST).	Datetime picker.	Indicates the End Interval of the Outage in 5-minute intervals (AWST format). including the period of 5 minutes of the specified End Interval. i.e., an End Interval of 08:00 ends at 08:04:59
End Time (AWST)	Informational field	Indicates the End Time of an outage based on the End Interval (AWST) i.e., an End Interval of 08:00 results in an End Time of 08:04:59
Facility.	Dropdown menu.	The Facility that the Outage refers to.

5.2 Energy/Service Reduction

The Energy/Service Reduction section (Figure 10) details information about the availability and Remaining Available Capacity (RAC) of the Outage Facility, Technology Type(s), and any Essential System Services associated with the Outage Facility. It is expected that information is provided at all three levels if applicable.

Note: During selection of the Commencement Interval, End Interval and Facility details, the Outage Management System will validate outages that overlap with the Intervals chosen and limit the RAC for the Facility/FTT/ESS to the previous submitted RAC quantity.

Note: For facilities that have an Electric Storage Resource (ESR) as a Facility Technology Type, there will be two fields to complete. One is for the energy (Capacity) requirement of the ESR and the other will be for over the Obligation Duration for the ESR.

The Energy/Service Reduction section is a common requirement to all Outages.

Figure 10 Create Outage: Energy/Service Reduction

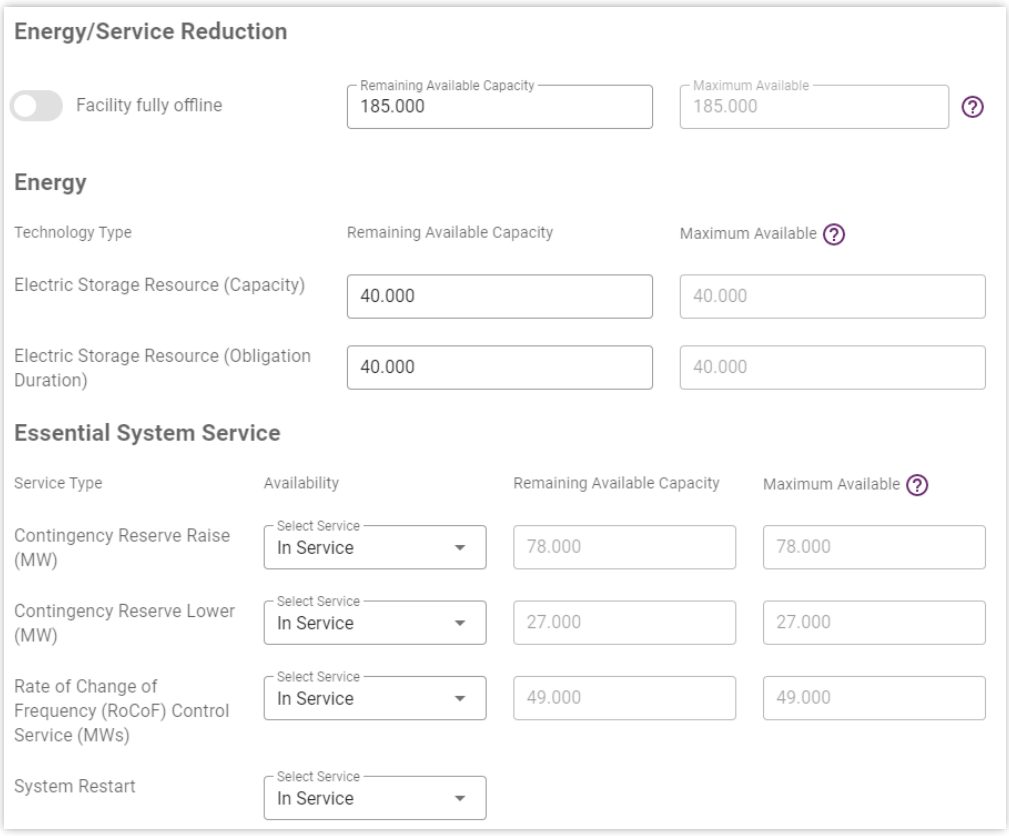


Table 6 Create Outage: Energy/Service Reduction

Field	Data Type	Description
Energy/Service Reduction.	Heading.	-

Field	Data Type	Description
Facility fully offline.	Toggle button.	A toggle button to adjust the Outage Facility's related Remaining Available Capacity and Availability fields to 0MW and Out of Service accordingly for the proposed Outage Submission.
Remaining Available Capacity.	Numerical input.	The Remaining Available Capacity of the Outage Facility for the proposed Outage Submission. Defaults to the Maximum Capacity from Standing Data unless there are overlapping outages identified during the Outage Period.
Maximum Available.	Informational field.	This field shows the maximum RAC value that can be specified for this outage. The figure is taken from Standing Data but may be adjusted if any other outages at the Facility with an overlapping Outage Period are identified.
Energy.	Heading.	-
Remaining Available Capacity.	Numerical input (For each Facility Technology Type).	The Remaining Available Capacity of the Outage Facility's Technology Type for the proposed Outage Submission. Defaults to the Maximum Capacity from Standing Data unless there are overlapping outages identified during the Outage Period.
Maximum Available.	Informational field.	This field shows the maximum RAC value for the Facility Technology Type that can be specified for this outage. The figure is taken from Standing Data but may be adjusted if any other outages at the Facility with an overlapping Outage Period are identified.
Essential System Service.	Heading.	-
Availability.	Dropdown menu (For each Technology Type).	The availability of the registered Essential System Service, with the following meanings: • In Service • Partial Service • Out of Service
Remaining Available Capacity.	Numerical input (For each registered service).	The Remaining Available Capacity of the Outage Facility's registered Essential System Service for the proposed Outage Submission (if applicable). Defaults to the Maximum Capacity from Standing Data unless there are overlapping outages identified during the Outage Period.
Maximum Available.	Informational field.	This field shows the maximum RAC value for the Essential System Service that can be specified for this outage. The figure is taken from Standing Data but may be adjusted if any other outages at the Facility with an overlapping Outage Period are identified.

5.3 Contingency Plan Information

The Contingency Plan Information section (Figure 11) contains important information around the Outage Contingency Plan, more specifically the: Risk of Extension, Estimated Recovery Time and Contingency Plan Information for situations where the Outage will need to be Recalled by AEMO.

This information is required by AEMO to perform an assessment of Outage Plans and is not applicable for Forced Outages.

Figure 11 Create Outage: Contingency Plan Information

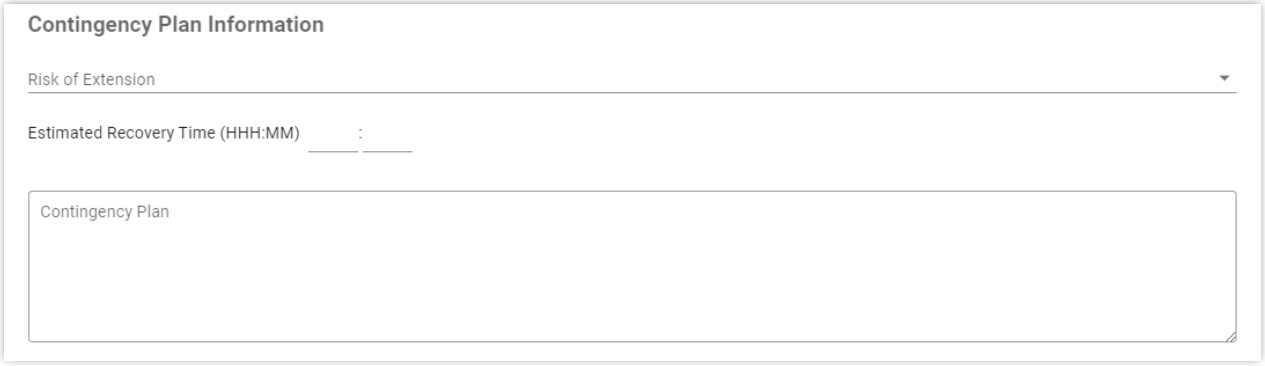


Table 7 Create Outage: Return to Service

Field	Data Type	Description
Risk of Extension.	Dropdown menu.	A qualitative assessment depicting the risk of Outage extension, with the following meanings: • Low • Medium • High
Estimated Recovery Time.	Numerical input (HHH:MM).	The time it will take to bring the resource back in service upon recall of the outage by AEMO. This is represented in hours and minutes.
Contingency Plan	Open text field.	A mandatory textual description indicating the Contingency Plan if the outage is required to be recalled by AEMO.

5.4 Availability Declaration

The Availability Declaration section (Figure 12) allows Market Participants to declare that the capacity(s) or capability(s) meets the availability requirements detailed in the Market Rules. AEMO will create pre-defined reasons based on the WEM Rules (e.g., Mandatory Routine Maintenance and Outage Extension).

Figure 12 Create Outage: Availability Declaration

Table 8 Create Outage: Availability Declaration

Field	Data Type	Description
Availability declaration exemption.	Toggle button.	A field for Participants to submit an Outage Plan for approval where the outage is exempt from an Availability Declaration as specified within the WEM Rules.
Type	Dropdown menu.	The type of Availability Declaration with the following options as per the WEM Rules • Mandatory Routine Maintenance Outage Extension
Details	Open text field.	A mandatory textual description with details pertaining to the Availability Declaration Type selected

5.5 Related Outages

The Related Outages section (Figure 13) enables the Market Participant to advise that Network operator switching is required and/or to link the outage being created to any outage that may relate to the outage being submitted.

Figure 13 Create Outage: Related Outages

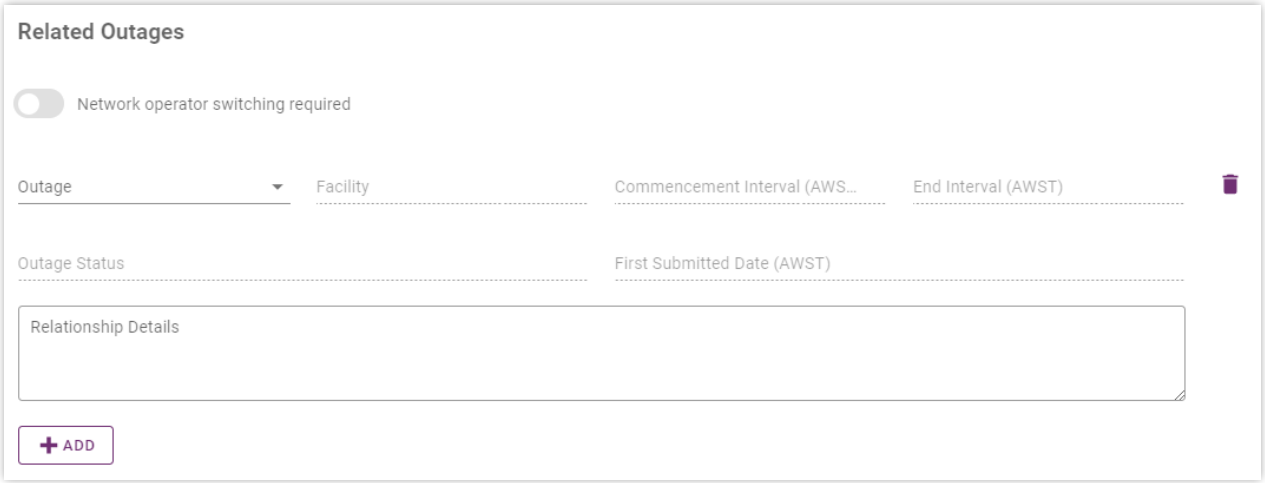


Table 9 Create Outage: Related Outages

Field	Data Type	Description
Network Operator switching required.	Toggle button.	An indication of whether Network operator switching will be required. Any Network switching required will need to be coordinated with the Network Operator.
Add	Button	Button to add a related outage to the Outage being submitted.
Outage	Numerical Input	Any outage number that may relate to the Outage being submitted.
Facility/Equipment	Informational Field	The Facility/Equipment of the outage number(s) related to the current submission.
Commencement Interval (AWST)	Informational Field	The Commencement Interval of the outage number(s) related to the current submission.
End Interval (AWST)	Informational Field	The End Interval of the outage number(s) related to the current submission.
Outage Status	Informational Field	The status of the outage number(s) related to the current submission.
First Submitted Date (AWST)	Informational Field	The First Submitted Date of the outage number(s) related to the current submission.
Relationship Details	Open text field.	The mandatory relationship of the related Outage(s) to the current submission (if a related outage is selected).

5.6 Comments

The comments section allows Market Participants to communicate with AEMO within a particular Outage (Figure 14). Comments and Attachments apply to the whole outage and can be added at any time.

Figure 14 Create Outage: Comments and Attachments

Table 10 Create Outage: Comments and Attachments

Field	Data Type	Description
Comment.	Open text field.	A text field to provide comments to AEMO relating to the Outage.
Add Documents.	File upload button.	A file service to provide documents that will supplement AEMO with the approval process of the Outage. This is limited to a size of 5MB, common file types would be: .pdf, .xlsx, .csv and .docx
Add Comment	Button	A button to allow the Market Participant to add another comment to the outage submission.

6 Outage Revision

A Market Participant or a Network Operator may revise a Planned Outage (Status of Approved) at any time prior to the completion of the Planned Outage, provided:

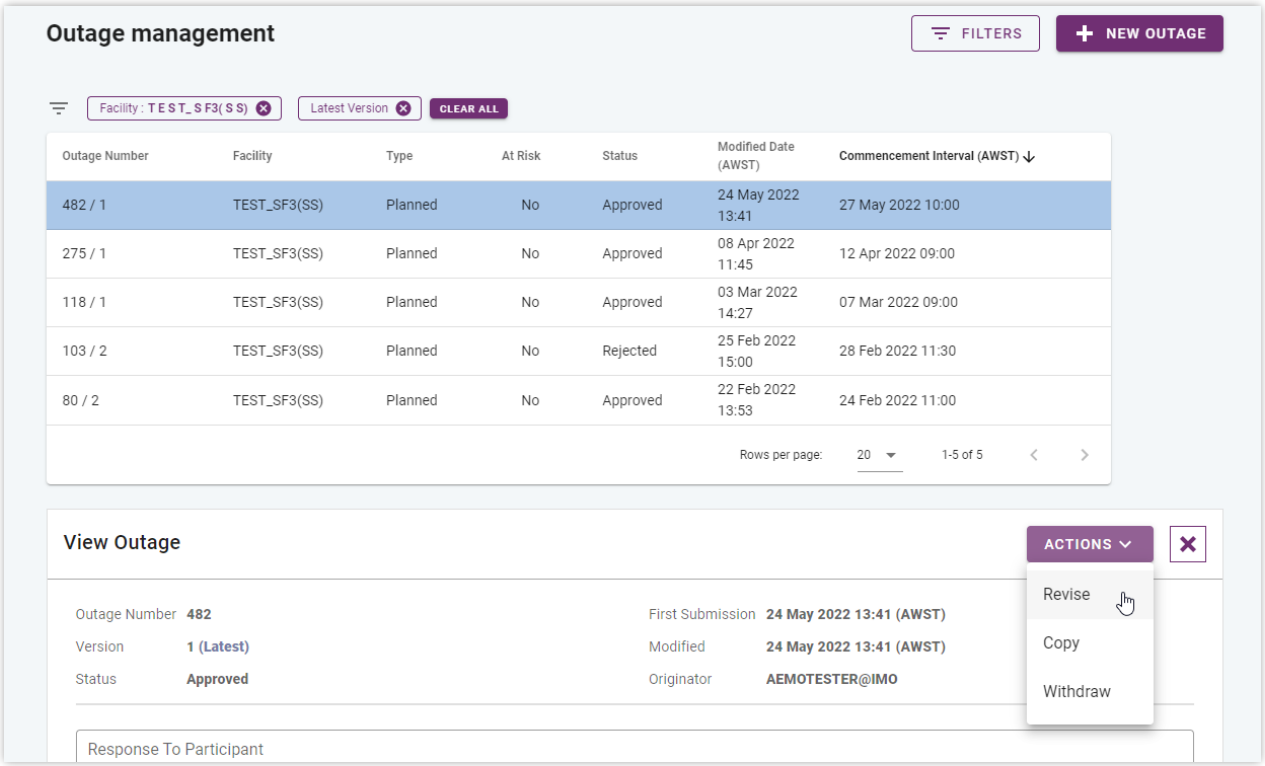
1. the revised Outage Commencement Interval is not earlier than the previous Outage Commencement Interval.
2. the revised Outage Completion Interval is not later than the previous Outage Completion Interval.
3. any revised Remaining Available Capacity for the Outage Facility, as relevant, is not proposed to be further reduced from the previous submission (applicable to Market Participants only); and
4. other aspects of the Planned Outage, as specified in the WEM Procedure referred to in clause 3.18.4 of the WEM Rules, are unchanged.

An Outage Plan (Status of Awaiting Assessment) may be revised at any time if the revision addresses the requirements specified in clause 3.18B.8 of the WEM Rules (which refers to the outage entry timing requirements for Planned and Opportunistic Outages).

Forced Outages can be amended via the Outage Management System a maximum of 15 days after the event. Upon request, AEMO can unlock the system for post-15-day amendments.

To revise an Outage, once selected, click on the “Actions” drop down menu and the “Revise” option (Figure 15).

Figure 15 Revise Outage Button

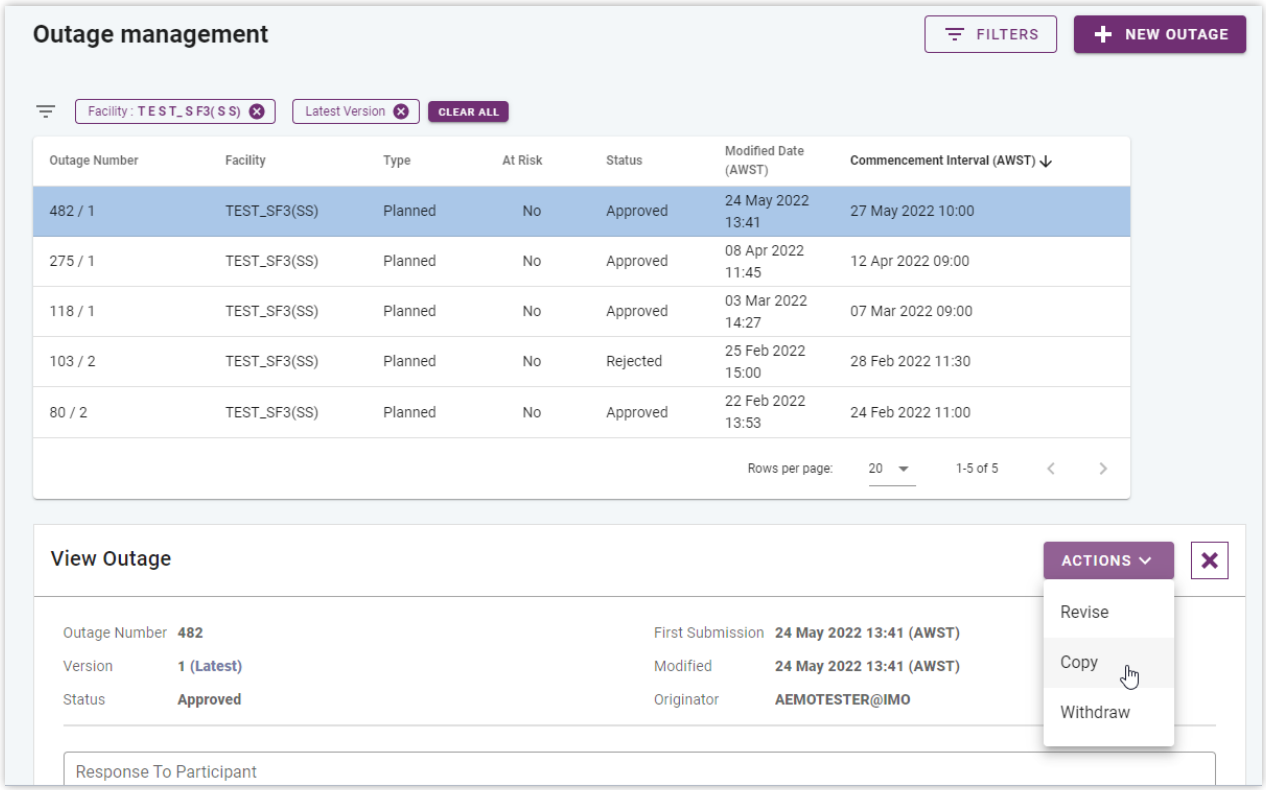


7 Outage Copying

Details from an existing outage can be copied into a new outage for instances where Market Participants may perform regular types of maintenance on their Outage Facility. When the copy functionality is used on an existing outage, all details from the original outage are pre-populated in a new outage entry form except for the Commencement and End Intervals, Availability Declaration information, Related Outage information and Comments and Attachments.

To copy an Outage, once selected, click on the “Actions” drop down menu and the “Copy” option (Figure 16).

Figure 16 Copy Outage Button



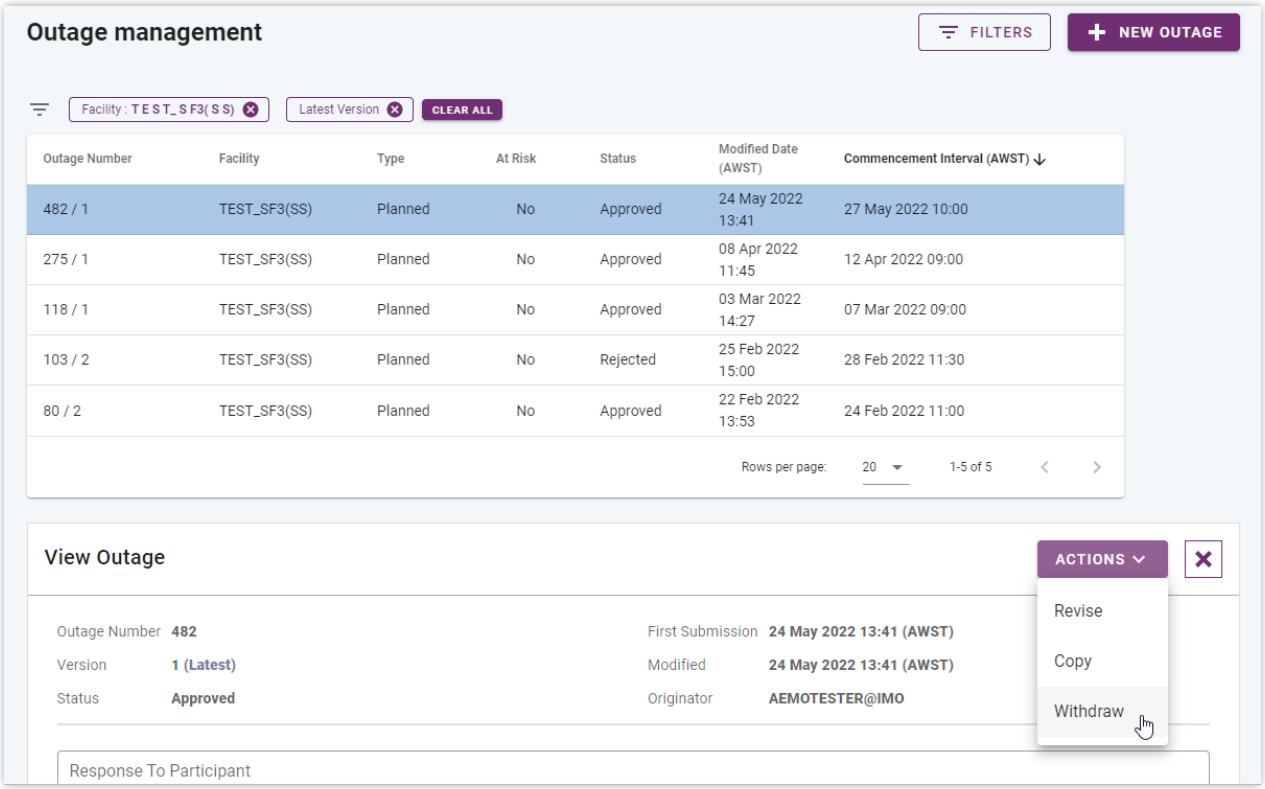
8 Outage Withdrawal

A Market Participant or Network Operator may (or must in some cases) withdraw an Outage under the following conditions and to meet certain rule obligations:

- The Outage Facility no longer intends that the relevant Outage Capability will be subject to an Outage
- Information in a submitted Outage Plan has changed
- The Outage Plan no longer meets the requirements set out in the WEM Rules (e.g., MR3.18B.8)

To withdraw an Outage, once selected, click on the “Actions” drop down menu and the “Withdraw” option (Figure 17).

Figure 17 Withdraw Outage Button



A1. Outage Workflow

Figure 18 Outage Plan Workflow

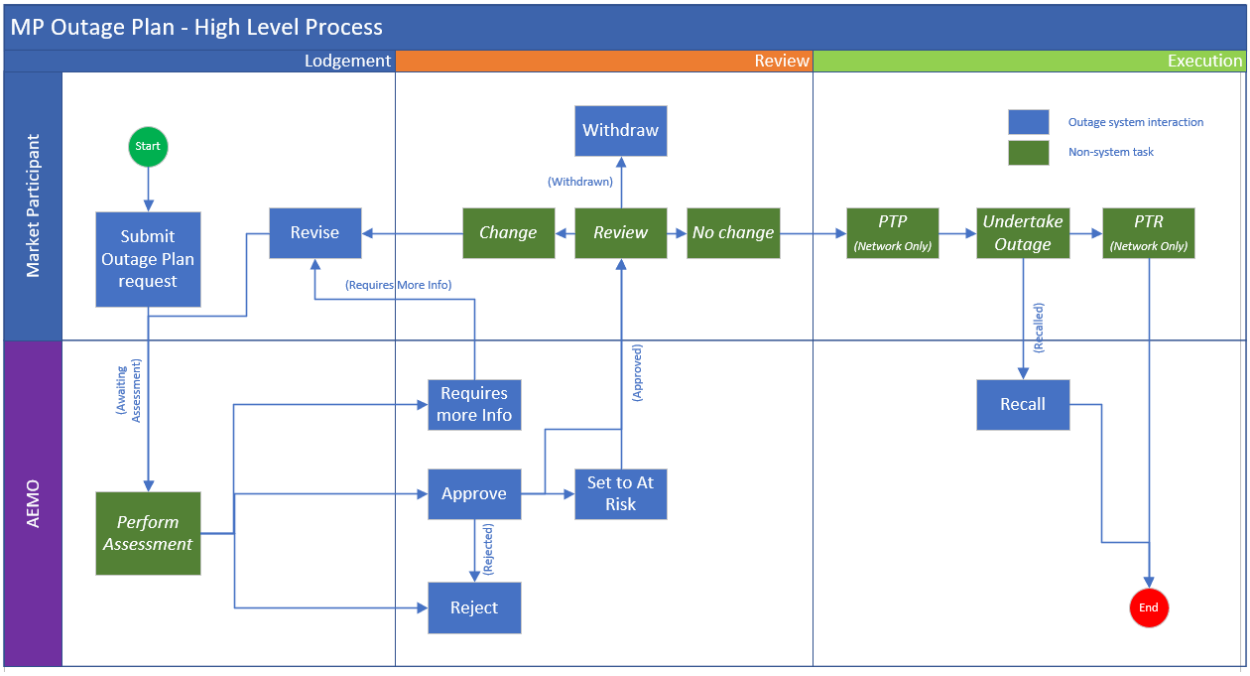
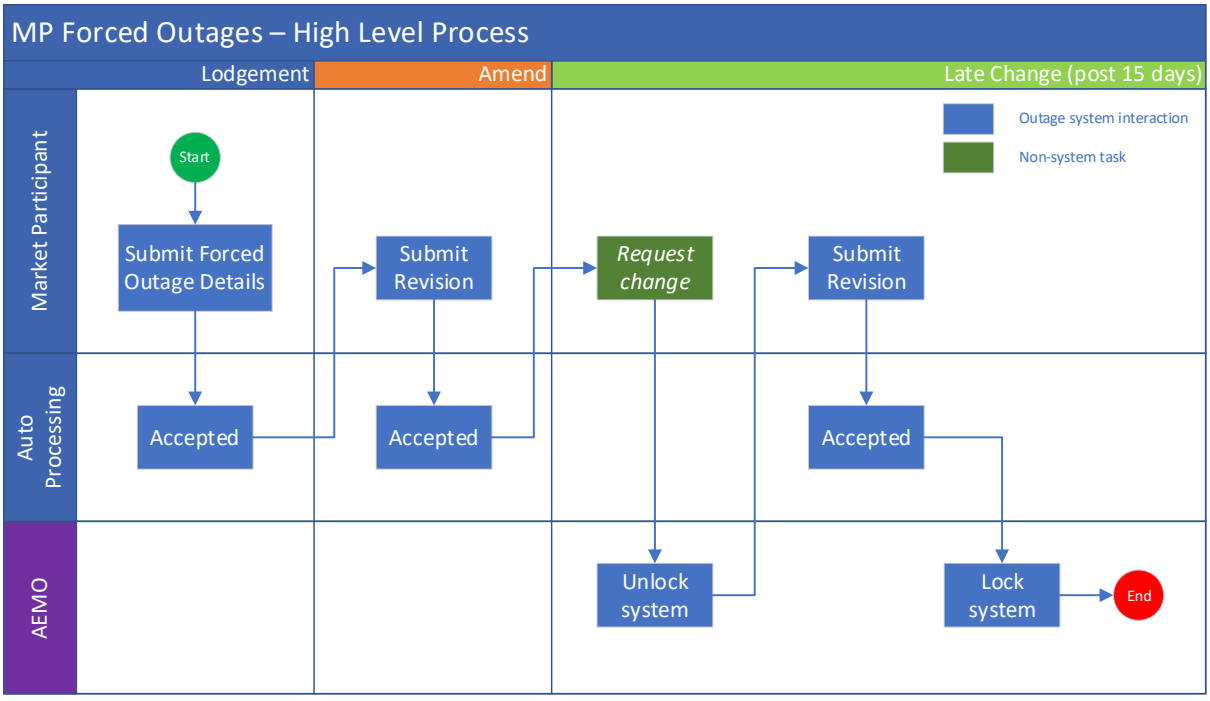


Figure 19 Forced Outage Workflow



Glossary

Term	Definition
AEMO	Australian Electricity Market Operator
ESS	Essential System Services
FCESS	Frequency Co-Optimised Essential System Services

Market Service	One of the services co-optimised through the RTM, being:
	• Energy
	• One of the FCESS:
	  ○ Regulation Raise
	  ○ Regulation Lower
	  ○ Contingency Raise
	  ○ Contingency Lower
	  ○ RoCoF

MR	Wholesale Electricity Market Rule
Opportunistic Maintenance	Means, an Outage Plan with an Outage Period of less than 24 hours submitted in accordance with clause 3.18B.8(b)(ii) of the WEM Rules.
Outage Capability	The capability of the Facility for which an Outage occurs, which includes, but is not limited to, energy production, consumption, or transfer of energy, or the provision of any Essential System Service.
Outage Completion Interval	The Dispatch Interval specified in an Outage Plan or revision in which the Outage is proposed to be completed.
Outage Facility	Means an Equipment List Facility or a Self-scheduling Outage Facility.
Outage Period	In respect of an Outage Plan, the period of time between the start of the Outage Commencement Interval and the end of the Outage Completion Interval
Outage Plan	An unapproved Outage Plan as prescribed in clause 3.18B.1 of the WEM Rules.
Participant	In the context of this document, Participant is used in general terms to mean any registered Rule Participant, unless otherwise specified
Planned Outage	An Outage Plan that has been approved by AEMO.
RoCoF	Rate of Change of Frequency
RAC	Remaining Available Capacity
SWIS	South West Interconnected System
Technology Type	Means any one of the types of technologies specified in clause 2.29.1 of the WEM Rules.
WEM	Wholesale Electricity Market
WEM Rules	Wholesale Electricity Market Rules
WEMS	Wholesale Electricity Market Systems