Automated Dispatch and Messaging System (ADaMS) Participant Manual

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Prepared for: Market Participants

Classification: Public

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Public

1   Introduction

Automated Dispatch and Messaging System (ADaMS) accounts are required for market participants who receive dispatches and/or directives from the Alberta Electric System Operator (AESO) system controller. ADaMS is also used to communicate relevant real-time market and system information.
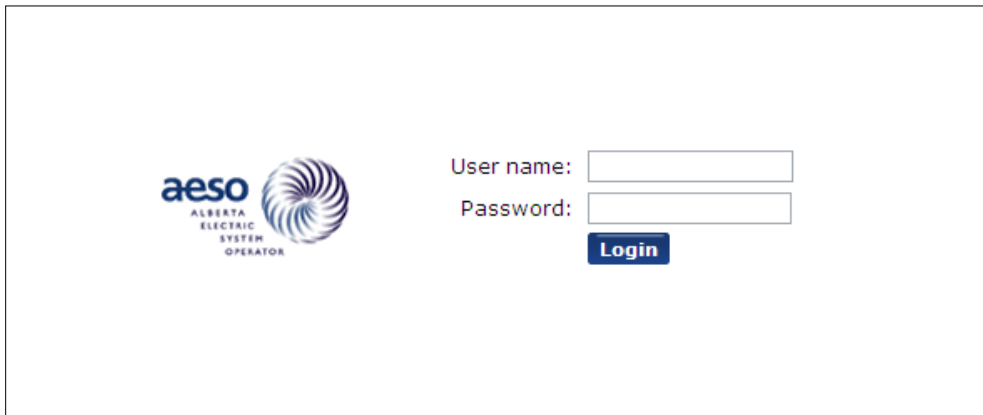
2   System Requirements

The supported platform for ADaMS is currently Microsoft Edge.

3   The ADaMS Server

Upon the AESO's approval, the AESO will assign an ADaMS account to a participant requiring access by providing a valid user ID, password and security certificate. For information on accessing ADaMS, you may contact AESOFirstCall at 1-888-588 2376 or info@aeso.ca.

3.1   Logging in to ADaMS

(a)   Download the security certificate to the necessary computers

(b)   Enter the ADaMS URL: http://adams.aeso.ca/adams-web/. (This takes you to the ADaMS login screen.)

(c)   Enter the user ID and password that you have been assigned.

Note: Do not open multiple browser sessions at the same time as any changes made may not be saved.

Note: It is recommended that participants change their password upon logging in the first time. This can be done using the "Change Password View" button at the top of the screen.

4   Dispatch Rights and Carbon Copy Rights

There are two different types of rights a user could have for assets in ADaMS. The account that has been assigned the Dispatch Rights (DR) to an asset is responsible for acknowledging dispatches or directives for the asset. Consequently, only one account can be assigned the dispatch rights to the asset. If an account has been assigned Carbon Copy (CC) rights to an asset, the user will only be able to view the dispatches or directives, and will not be able to acknowledge them. If the participant so chooses, multiple accounts can be assigned CC rights to an asset.

4.1   Dispatch Rights

- Acknowledge new dispatches/directives/messages.
- View the history of the last 50 dispatches/messages.
- View Historical dispatches/messages.
- Download historical dispatches/messages in *.csv or *.xls format.
- View the current dispatch level for all service types.

4.2 Carbon Copy Rights

- View the history of the last 50 dispatches/messages.
- View Historical dispatches/messages.
- Download historical dispatches/messages in *.csv or *.xls format.
- View the current dispatch level for all service types.

Note: If an account has Carbon Copy rights to an asset, the user of the account will be able to view all dispatches of any type for all markets.

5 Navigating ADaMS

After successful login to the ADaMS system, the user will see the bar at the top of the display indicating: "Participant View", "DVN Configuration", and "Change Password View".

- **Participant View** – Participant View is the main ADaMS display window showing current and historic dispatch and messaging information. Participants will see the "Participant View" as their default screen after logging into the ADaMS website. A description of the options on this screen can be found below.

- **DVN Configuration** – DVN Configuration will allow the user to change the configurable aspects of Dispatch Variance Notification (DVN) functionality for those assets that the user has submission rights for and which have been registered for DVN. Selecting this option will open the screen in a new tab in your browser. Please see section 19 for more information and instructions.

- **Change Password View** – Participants have the option of changing their password. Selecting this option will open the screen in a new tab in your browser. Please see section 7 for more information and instructions.

The ADaMS display defaults initially to "Participant View".

When the user selects either of "DVN Configuration" or "Change Password View", a new tab is created in the browser session with the corresponding name and the user is taken to the corresponding tab of the browser session. An example is provided below.

Note: Do not open multiple browser sessions at the same time as any changes made may not be saved.

Note: Pressing the "Logout" button will log you out of all open sessions and tabs.

6 Participant View

6.1 Participant View Definitions
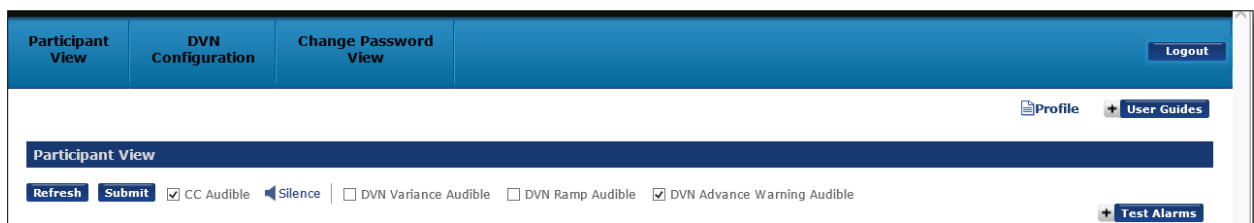
Refresh	Manually refresh the ADaMS browser.
Submit	Completes the acknowledge dispatch or message process.
CC Audible	A checked box mutes the audible alarm for carbon copy dispatches, directives, and messages.
Silence	Mutes the audible alarm for the current dispatch/message. Any new dispatch/message will invoke a new audible alarm.
DVN Variance Audible	A checked box mutes the audible alarm that notifies a participant when an asset varies from the specified variance and time.
DVN Ramp Audible	A checked box mutes the audible alarm that notifies a participant when an asset has not ramped to the appropriate dispatch level in the specified time.
DVN Advance Warning Audible	A checked box mutes the audible alarm that notifies a participant prior to the effective time of a dispatch.
Profile	View a user profile. This displays the contact information for the account as well as all assets to which the user has dispatch rights or carbon copy rights
User Guides	The location of the ADaMS Participant Manual and the Dispatch Variance Notification (DVN) Functionality and Registration Guideline.
Logout	Manually disconnect from the ADaMS web server. This will log the user out of all open tabs and sessions
Test Alarms	Verify and test notification alarms. Confirm the ADaMS alarms are working and distinguish different alarm sounds.

Note: The participant may temporarily silence the Audible Alarm settings in this view, however once the session is logged out the audible settings revert to the default selections from the 'Profile Page'.

Note: Do not close the participant view tab unless logging out of the ADaMS system.

Note: Do not open multiple browser sessions at the same time as any changes made may not be saved.

6.2   ADaMS Current Dispatch Pane Definitions

ADAMS																				Hide
		Dispatch Effective						SR		SUP				Target					Dispatch	Directive
Ack Disp	Ack Dir	Date	Time	Asset	AC	Energy	DDS	Dispatch	Directive	Dispatch	Directive	TMR/UC	RR	Low	High	Notes	Instruction Time		ON	OFF	ON	OFF

Acknowledge Dispatch, Acknowledge Directive, and Acknowledge Message buttons	Is a selectable radio button that indicates a participant's acknowledgement of a dispatch, directive or message.
Dispatch Effective Date and Time	Dispatch effective times are top-of-the-current-minute and a current effective acknowledged dispatch is highlighted in yellow and text is bold. An advanced dispatch that is for the top of the next hour, will have the "Dispatch Effective: Time" cell background highlighted in black with white font. An advanced dispatch that is not for the top of the next hour, will not be highlighted but will be stacked above the current effective acknowledged dispatch.
AC	Available Capability of the asset (as reported in the Energy Trading System).
Energy	The dispatch level for Energy. The dispatch instruction includes existing dispatch levels, as well as changes to dispatches. Any changes to dispatch level will be bold and cell background color will reflect the dispatch of the service type.
DDS	The dispatch level for Dispatch Down Service. Any changes to dispatch level will be in bold and cell background color will reflect the dispatch of the service type.
SR Dispatch	The dispatch level for Spinning Reserve. Any changes to dispatch level will be in bold and cell background color will reflect the dispatch of the service type.
SR Directive	The directive level for Spinning Reserve. Any changes to directive level will be in bold and cell background color will reflect the directive of the service type.
SUP Dispatch	The dispatch level for Supplemental Reserve. Any changes to dispatch level will be in bold and cell background will be colored to reflect the dispatch of the service type.
SUP Directive	The directive level for Supplemental Reserve. Any changes to directive level will be in bold and cell background colored to reflect the directive of the service type.
TMR/UC	The instruction level for Transmission Must Run or Unit Commitment. Any changes to dispatch level will be in bold and cell background will be colored to reflect dispatch of the service type.
RR	The dispatch level for Regulating Reserve. Any changes to dispatch level will be in bold and cell background will be colored to reflect the dispatch of the service type.
Target Output Low	Low: is the suggested minimum output level for the asset. The formula is: Max (TMR/UC Dispatch, Energy Dispatch) + SR Directive + SUPG Directive + SUPL Directive.
Target Output High	High: is the suggested maximum output level for the asset, including RR. The formula is: Max (TMR/UC Dispatch, Energy Dispatch) + SR Directive + SUPG Directive + SUPL Directive + RR Dispatch. This is included primarily for reserve management.
Notes	The notes which are entered by the AESO System Controller.

Instruction Time:	The time the instruction is sent through the AESO's Dispatch Tool.
Dispatch On/Off	Summarize all services which are changing within the merged dispatch instruction. Levels greater than 0 (for On), and a level that is 0 (Off).
Directive On/Off	Summarize directive changes. Levels greater than 0 (for On), and a level that is 0 (Off). Should show all services which are changing in the directive and are directed to a level greater than 0 (for On), and a level that is 0 (Off).

Note: Participants have the option to "hide" the Dispatch On/Off and Directive On/Off columns if they wish.

7   Current Dispatch and Message Panes

The ADaMS Current Dispatch Pane and the Current Message pane is where participants can view or respond to new dispatches, directive or messages:

A "dispatch" is an instruction from the AESO to a pool participant to cause, permit or alter the exchange of electric energy or ancillary services.

A "message" is a communication sent to all users or on a per-asset basis.

Note: Data availability may be impacted in ADaMS during times the AESO's system control Dispatch Tool (DT) is unavailable. Similarly, dispatches from restatements, submissions in the Energy Trading System (ETS) or from entering a start time in ADaMS may be delayed and will be processed once the Dispatch Tool is available. Dispatch Variance Notification (DVN) may also be unavailable during these periods.

7.1   Current Dispatch Pane

Dispatch instructions appear in the ADaMS Current Dispatch Pane seen above. This instruction contains the current dispatch and directive levels for the asset for each market and/or service. The

dispatch or directive can be acknowledged by using the radio button beside the instruction and then clicking Submit

Note: Changes to instructions will be highlighted with **bold** text and a colored background.

7.2   Current Message Pane

Market participants are able to select and acknowledge messages in the Current Message section by using the radio button beside the message or by selecting all messages in the Current Message section using the Acknowledge All checkbox located below the 'Ack' column label. The selected messages will be acknowledged when the Submit button is clicked, which then moves the messages to the Message History section.

Once a message has been received in the Current Message Pane, the message will reside in the pane until the message is either acknowledged or older than 30 days. After 30 days, the message will automatically move down to the Message History Pane.

Note: Selected messages in the Current Message section or dispatch instructions in the Dispatch Pane can be unselected by clicking the Refresh button or by refreshing the page. They cannot be unselected using the radio or 'Ack' buttons.

7.3   Target

Target (low/high) provides guidance on the minimum and maximum MW level for an asset. These values are a guideline, and compliance continues to be assessed separately for each dispatch and directive. Adherence to this target may NOT be sufficient to ensure compliance in one or more of these assessments.

Participants must ensure that responding to an ancillary service directive continues to align with the requirements in the associated ISO rule, such that the volumes directed on must be in addition to the Real Power Output of the generating unit at the time of the ancillary service directive.

Note: Target Low=High unless a unit is currently dispatched to provide Automatic Generation Control (Regulating Reserves).

8   Dispatch History Pane

Participants can view the last 50 dispatch records sorted in descending order based on Dispatch Effective Time. In the "Dispatch History" pane:

- The current effective acknowledged dispatch is highlighted in yellow and text is bold.
- Dispatch effective times will be top of the current minute.
- Advance dispatches that are sent and are effective at the top of the next hour will have the "Dispatch Effective: Time" cell background highlighted in black with white font.
  - Note: An acknowledged dispatch will become highlighted in yellow approximately thirty (30) seconds past the top of the hour.
- Advance dispatches that are not top-of-the-hour dispatches will not be highlighted, but they will be stacked above the current effective acknowledged dispatch.

Dispatch history can also be viewed in a separate window by selecting the "View Historical dispatches" tab.

8.1   Dispatch History Filter

The filter tab allows participants to view the dispatch history of a single asset.

(a) Select the asset of interest in the drop-down menu beside "Dispatch Effective Time".
(b) Select the "Filter" button to generate the specific history.

8.2 Current MW Level

The "Current MW Level" tab allows participants to view the current and top of next hour MW levels. The pop-up screen will default to show the current dispatch level for all service assets.

- The "At Now" button will show the current service level.
- The "Top of Next Hour" button will show the service level at the top of the next hour.
- The bottom part of the Current MW Level includes a participant's current energy offer per asset.
- "RT" is the real-time offers that the system controller would see in the dispatch tool. This would show any blocks that are auto reduced due to Spinning Reserve, Supplemental Reserve, Regulating Reserves and Dispatch Down Service dispatches.

The Available Capability (AC) for an asset is visible to participants in the "Current MW Level" table

Note: If the data is this screen is unavailable, the user may see the below message. The user will need to wait until data is available again. Should the error persist, the AESO may be contacted for assistance at info@aeso.ca.

8.3 View or Download Historical Dispatches

Select the 'View Historical dispatches' button to view up to 6 months of historical dispatch data or the following the steps will allow the user to download the data to a file.

(a) Select the number of historical dispatch days.

(b) Select the "Download Historical Dispatch" button.

(c) The pop-up screen defaults to show the format in which you want to download (CSV or XLS).

(d) Select "generate" to save dispatches.

9 Long Lead Time Assets and Generator Start Time

9.1 Long Lead Time Assets

To be considered a long lead time asset, the pool asset must either: require more than 1 hour to synchronize to the interconnected electric system under normal operating conditions; or is able to synchronize but has varying start-up times for distinct portions of its energy output which require more than 1 hour to deliver, such as additional portions of its energy output.

All assets requiring more than 1 hour to synchronize declare this to the AESO through the initial start-up time submission in the constraints tab in the Energy Trading System. This conveys to the AESO that, when offline, the asset requires more than one hour to synchronize to the system under normal operating conditions.

For more information on long lead time assets, please see Information Document #2012-007R, Long Lead Time Energy ("ID #2012-007R").

9.2 Generator Start Time

A pool participant that wishes to voluntarily provide energy for a pool asset requiring more than 1 hour to synchronize to the interconnected electric system, that is not synchronized, must submit to the AESO the time of day that such pool asset will be synchronized to the interconnected electric system. When such an asset has been dispatched to 0, it will need to declare the intention to start before they can receive a new dispatch. They do so via the ADaMS system using the "Enter Start-Time" button.

The participant needs to enter the asset, date, and time in the "Enter Start-Time" display..

9.3 Entering a Start Time

(a) From the Participant View, select "Change Password View" in the top bar.

(b) Select the "Enter Start-Time" button which opens up either a pop-up window or an additional tab.

(c) Select an asset from the asset pull down menu.

(d) Enter the start-time information.

(e) Select the "Submit" button, to create the start-time record.

When current time equals the start date and time entered, the asset will be included in the Energy Market Merit Order and will receive dispatches accordingly.

Note: The start-time must be submitted at least 2 hours prior to the beginning of the settlement interval.

Note: Once the start-time has been submitted in the Automated Dispatch and Messaging System, the information appears in the energy market merit order beginning at the time of the start-time. This step must be executed in order to appear in the energy market merit order as per subsection 2(2) of Section 202.4. If a pool participant deletes an existing start-time record, the pool asset is filtered out of the energy market merit order and does not receive a dispatch.

A pool asset that has previously indicated a start-time may withdraw its intention up to 2 hours prior to the start of the settlement interval.

Note: For a long lead time asset that is synchronized but has varying start-up times for distinct portions of its energy output (MW) and which requires more than 1 hour to deliver such additional portions of its energy, the distinct portions of its energy do not require a start-time to be submitted into the Automated Dispatch and Messaging System to receive a dispatch. The pool participant would reflect the eligibility of the delayed energy to receive a dispatch through their available capability declarations as per subsection 6 of Section 202.4 and further described in subsection 4 of ID #2012-007(R).

According to the ISO rules, if required, a participant can also modify an existing start-time record.

9.4   Modify an Existing Start Time Record

Select the "Enter Start-Time" button which will open the pop-up window.
Select the start-time record to be modified by clicking on the radio button.

Asset	Start-Time	Comments	
TSTG	2007-11-29 12:08	test	⊙

The participant can now edit the record.
Click the "Submit" button when complete.

If required, a participant can delete existing start-time records.

9.5   Delete an Existing Start Time Record

Select the "Enter Start-Time" button which will open the pop-up window.
Select the start-time record to be deleted by clicking on the radio button.

Asset	Start-Time	Comments	
TSTG	2007-11-29 12:08	test	⊙

Select the "Delete" button when complete.

9.6   Warning on Need for Generator Start Time

Users controlling generating assets with an initial start time of greater than an hour will receive an ADaMS warning message whenever the asset has been dispatched to 0 MW in the Energy Market. This warning will remind the user to input a Start Time, as described above, to indicate when the generator will return online. The screen shot below shows the warning message that is generated in such a circumstance.

9.7 Unit Commitment Directives

Long lead time assets can be subject to unit commitment directives (Section 206.2, *Interim Supply Cushion Directives)*. Unit commitment directives issued to the pool participant, via phone call, will be accompanied by an ADaMS message summarizing the instructions for a unit commitment directive.

For the times that the eligible long lead time asset is to ramp up or operate due to a unit commitment directive, a corresponding "UC" dispatch instruction to the eligible long lead time asset's minimum stable generation level will be issued through the "TMR/UC" column. When a unit commitment directive is over, a UC dispatch to 0 MW will be issued. Each of these instructions will be accompanied a note that indicates that the TMR/UC instruction is for unit commitment directive in effect.

10 Message History Pane

Participants can view the last 50 message records sorted in descending order based on Dispatch Effective Time. Messages appearing in the Current Message pane will move down to the Message History pane once acknowledged.

Message history may also be viewed in a separate window by selecting the "View Historical messages" tab.

10.1 Downloading historical messages

(a) Select the number of historical message days.

(b) Select the "Download Historical Messages" button.

(c) The pop-up screen defaults to show the format in which you want to download (CSV or XLS).

(d) Select "generate" to save dispatches.

11 User Profile

Public

Participants are responsible for ensuring their contact information is kept updated.

(a) From Participant View select the "Profile" button located in the upper right-hand corner of the ADaMS webpage.

(b) This will display the following screen where contact information can be edited.
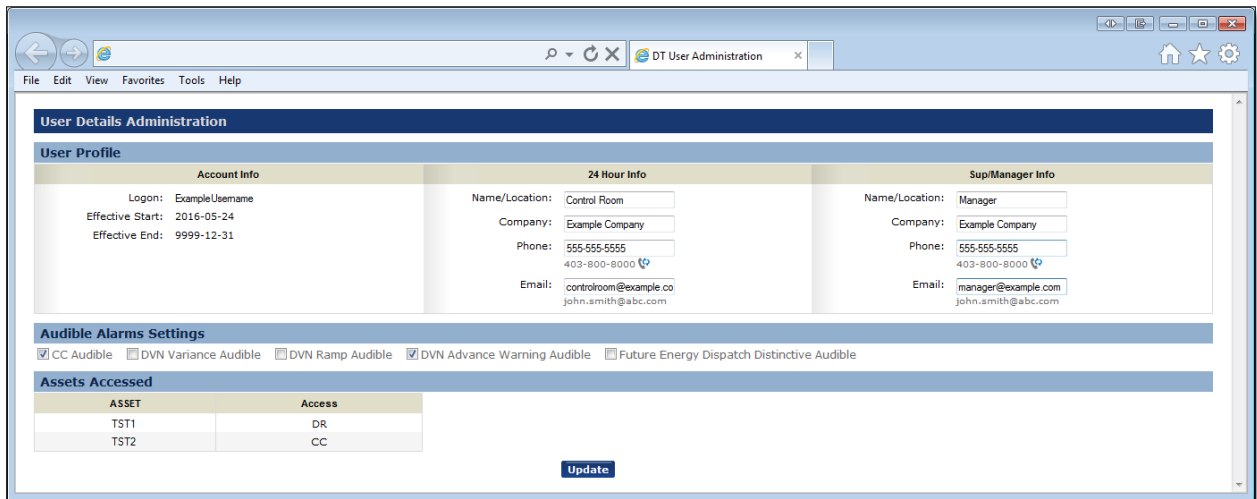
In addition to updating contact information, the participant can adjust their Audible Alarms Settings from this screen:

- CC Audible: if an account has carbon copy rights to an asset, an audible alarm will sound when the asset has been sent a dispatch, directive, or message
- DVN Variance Audible: audible alarm that notifies a participant when an asset varies from the specified variance and time.
- DVN Ramp Audible: audible alarm that notifies a participant when an asset has not ramped to the appropriate dispatch level in the specified time.
- DVN Advance Warning Audible: audible alarm that notifies a participant prior to the effective time of a dispatch.
- Future Energy Dispatch Distinctive Audible: a different audible alarm will sound for advanced energy dispatches.

Note: When the Audible Alarm settings are adjusted on the profile page, these changes are retained as the default setting and will become the initial state for every login by that user.

The participant can also verify the asset access, which will either be dispatch rights (DR) or carbon copy rights (CC). Using the above example:

- This participant has two assets assigned to them: TST1 and TST2.
- For Asset TST1, the participant has dispatch rights (DR).
- For Asset TST2, the participant has carbon copy rights (CC).

Carbon Copy (CC) and Dispatch Rights (DR) will receive dispatches/information for all markets and services.

12 Transmission Constraint Management (TCM)

During TCM, the AESO System Controller may use ADaMS to issue dispatches or directives to assets in the affected zone. It is important to recognize when ADaMS is being used to issue a directive since the compliance obligations with directives are different from those with dispatches.

When ADaMS is being used to issue a TCM directive, participants will receive what looks like an ADaMS dispatch with the text "*Transmission constraint directive in effect for Asset. Do not exceed level in Energy column.*" displayed in the Notes field of the dispatch record. This message will be delivered with a black background. This should be interpreted as a directive is being issued for the asset.

ADAMS			Dispatch Effective						SR		SUP				Target				Dispatch		Directive		Hide
Ack Disp		Ack Dir	Date	Time	Asset	AC	Energy	DDS	Dispatch	Directive	Dispatch	Directive	TMR	RR	Low	High	Notes		Instruction Time	ON	OFF	ON	OFF
🟢			06/14	14:12	TST3	7	2	0	20	0	0	0	0	0	2	2	Transmission constraint directive in effect for Asset TST3. Directive is equal to Energy dispatch.		06/14 14:11:22 MDT	E			

When TCM is in effect in a zone, ADaMS may issue a dispatch to an asset to a value that is below the current constraint directive value. The participant will receive an ADaMS dispatch with the text "*Transmission constraint of X MW in effect. This is a dispatch*" in the Notes field. This message will be delivered with a grey background. This indicates that a TCM constraint continues to be in effect but this is a dispatch to a level below the directed level. Normal dispatch compliance would apply.

ADAMS			Dispatch Effective						SR		SUP				Target				Dispatch		Directive		Hide
Ack Disp		Ack Dir	Date	Time	Asset	AC	Energy	DDS	Dispatch	Directive	Dispatch	Directive	TMR	RR	Low	High	Notes		Instruction Time	ON	OFF	ON	OFF
🟢			06/14	14:14	TST3	387	363	0	0	0	0	0	0	0	363	363	Transmission constraint of 369 MW is in effect. This is a dispatch.		06/14 14:13:45 MDT	E			

Once the transmission constraint has been completed a separate message will be sent to the asset in the constrained zone via ADaMS indicating **"Transmission constraint lifted. Asset <ASSET SYMBOL> is no longer in a transmission constraint area".** This message will appear with blue color shading.

Participant View	DVN Configuration	Change Password View						Logout

📄 Profile   + User Guides

Participant View

Refresh   Submit   ☑ CC Audible   🔇 Silence   ☐ DVN Variance Audible   ☐ DVN Ramp Audible   ☑ DVN Advance Warning Audible

+ Test Alarms

ADAMS			Dispatch Effective						SR		SUP				Target				Dispatch		Directive		Hide
Ack Disp		Ack Dir	Date	Time	Asset	AC	Energy	DDS	Dispatch	Directive	Dispatch	Directive	TMR	RR	Low	High	Notes		Instruction Time	ON	OFF	ON	OFF

Current Message- Last 30 Days

Ack ☐	Message Type	Date	Time	Message	Time of Instruction
⊙	Alert	2016/06/14	14:14	Transmission constraint lifted. Asset TST3 is no longer in a transmission constraint area	

+ Dispatch History- Last 50 Dispatches		Current MW level	View Historical dispatches [7]	Download Historical dispatches	Enter start-time

+ Message History- Last 50 Messages		View Historical messages [7]	Download Historical messages

13   Auto Log Out and Error Messages

ADaMS sends a "Ping" to the Dispatch Tool every 15 seconds which is used to indicate that the ADaMS session is alive. If, due to connectivity issues, the ADaMS application does not send out a "Ping" within four consecutive 15 second intervals, the participant session is considered closed and the participant is

automatically logged out. Messages are displayed in the ADaMS interface to provide greater visibility to the user that there are connectivity problems between the user's ADaMS and Dispatch Tool.

There are four types of connectivity notifications in ADaMS which are described below:

Initial login screen – "Your browser does not support JavaScript or JavaScript is not enabled. ADaMS application requires JavaScript to be enabled". JavaScript must be enabled for ADaMS to work and appearance of this message indicates that it does not appear to be enabled.
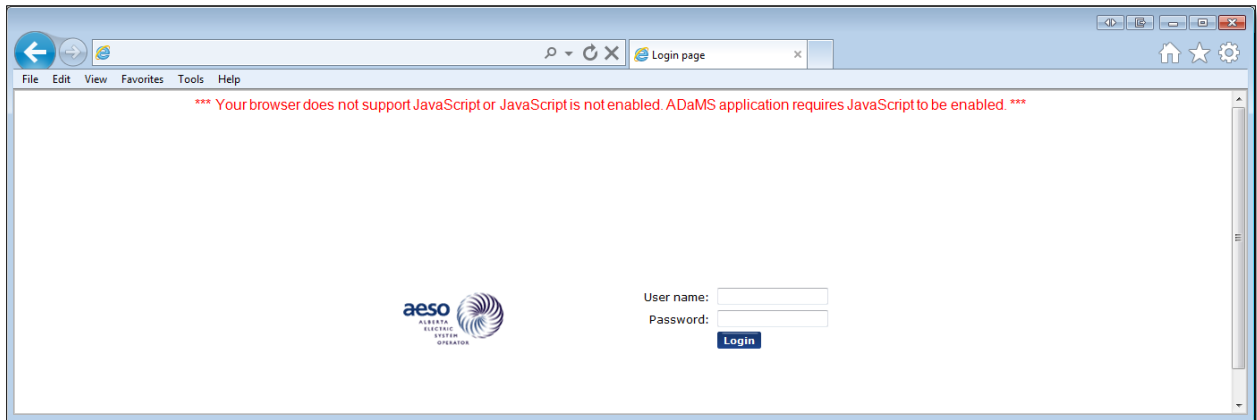
Participant View – "JavaScript error occurred. Support for this message can be obtained by emailing info@aeso.ca." The appearance of this error may be related to connectivity problems between the user's ADaMS session and Dispatch Tool. If this message is observed, you may email the contents of the message to the AESO at the indicated address.
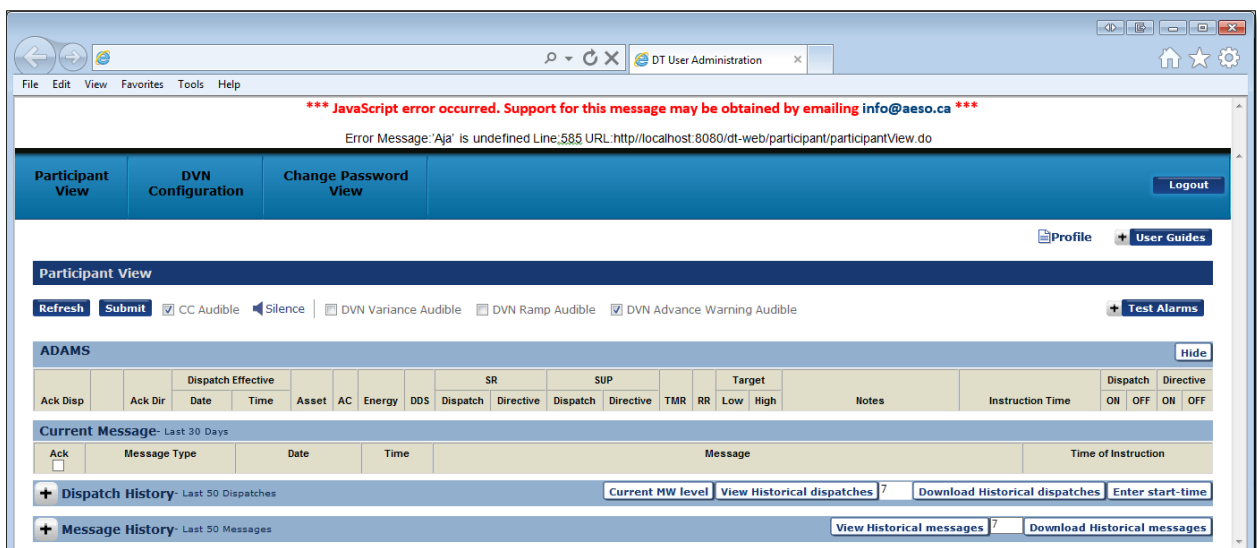
Participant View – "ADaMS connection lost. Trying to reconnect". The appearance of this message indicates that connectivity problems are being detected by ADaMS. This is typically a sign of internet connectivity concerns. ADaMS will attempt to reestablish the connection. If it fails to do so after 1 minute, the session will be automatically discontinued with the message in the next section.
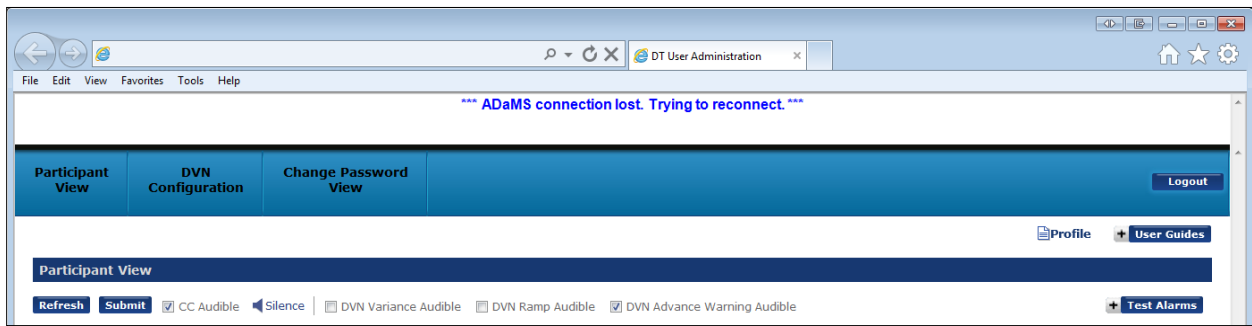
Participant View – "You have been logged out of ADaMS. Please log back in." This message appears to indicate to the user that they have been automatically logged out of ADaMS due to connectivity issues. They should log back in to reestablish the ADaMS session. An alarm will sound to notify participants that they have been disconnected and should log back in immediately.
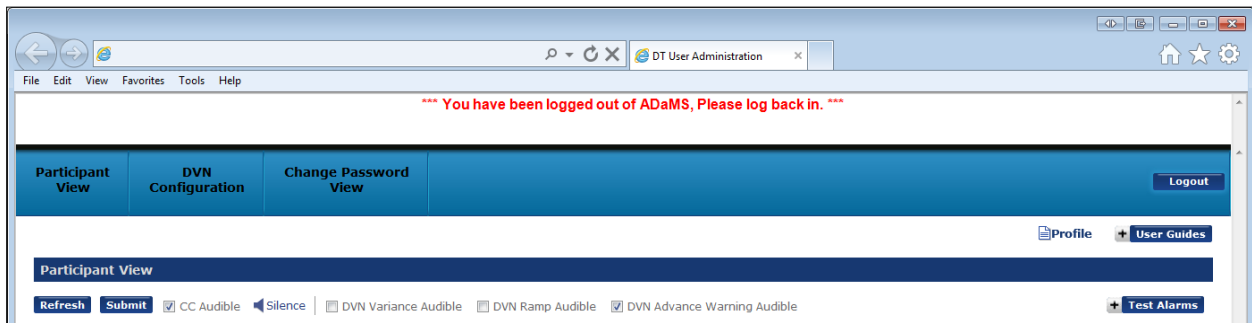
There is also a general error message you may see if you encounter a glitch or unexpected error within our systems:
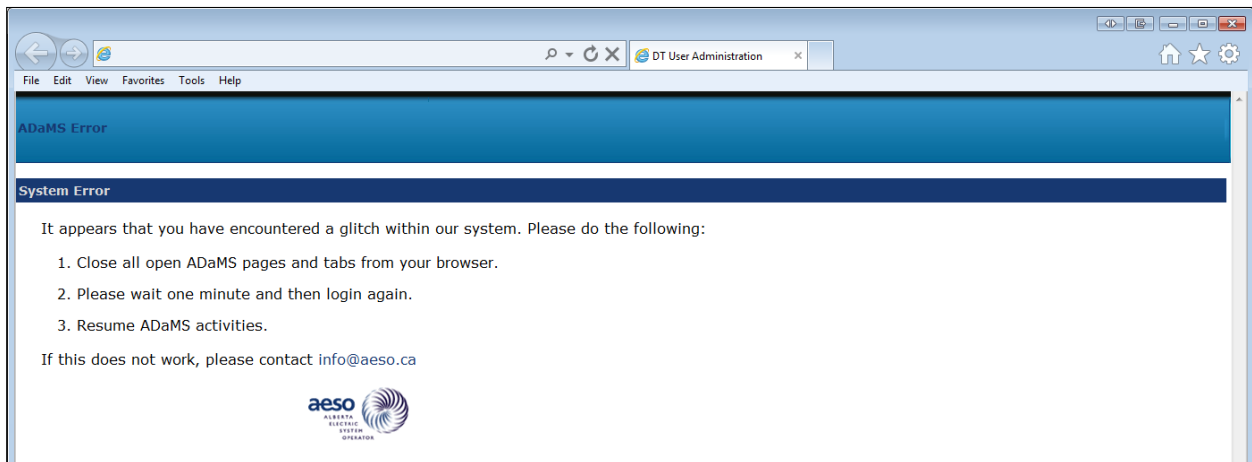
14 Timeouts

Dispatches issued by ADaMS may be designated as 'timed out' for a variety of reasons, some of which may not be a result of inaction on the part of the dispatch recipient. The ADaMS will distinguish between these two classes of dispatch timeouts by designating each dispatch timeout as either a "Communication Timeout" or a "Response Timeout".

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If a dispatch instruction times out due to a communication issue or for some other reason that may be beyond the dispatch recipient's control, the dispatch instruction will be designated "Communication Timeout" in the Notes field of the Dispatch History. If a dispatch instruction times out due to lack of a response (failure to acknowledge) then the dispatch instruction will be designated "Response Timeout" in the Notes field of the Dispatch History.

14.1 Invalid Status

Users may observe instructions with an "Invalid" descriptor in the Status column. An "Invalid (A)" status means the dispatch was acknowledged but was later replaced by another dispatch instruction with the same effective time. An "Invalid (T)" status means that the dispatch timed out and was later replaced by another dispatch instruction with the same effective time.

15 Dispatch Variance Notification Utility

The dispatch variance notification ("DVN") functionality monitors asset behavior relative to a subset of ISO rules and generates warning messages to help market participants remain in compliance with the rules. The warning messages come in two ways: a message displayed by ADaMS and a sound signal (alert) generated by the application.

Access to the DVN feature requires registration. To register, review the Dispatch Variance Notification Functionality and Registration Guideline located at aeso.ca > Rules, Standards and Tariff > Compliance Monitoring > ISO Rules > Additional Resources.

DVN was created as an aid to market participants in maintaining compliance. As such, its use is purely optional for market participants. It is not used by the AESO to assess compliance of market participants, and it should not be solely relied upon, by market participants, to ensure compliance. Limitations in its design and operation may lead to it misidentifying the status of an asset with regards to its compliance with its dispatch. Further, the failure of DVN will not be considered a mitigating factor in any contravention of an ISO rule. The issuance of DVN messages may be impacted by internal AESO system outages. Market participants are encouraged to develop their own tools and processes in order to facilitate compliance with the ISO rules.

When registered for DVN a user may see several types of DVN related messages sent via ADaMS. Further detail on the content and meaning of each message may be found in the Dispatch Variance Notification Functionality and Registration Guideline mentioned in paragraph two above.

Note: Do not open multiple DVN Configuration browser tabs at the same time as any changes made may not be saved.

16 Testing ADaMS Notification Alarms

Participants can verify and test their notification alarms by using the "Test Alarms" section. This allows participants to both confirm the ADaMS alarms are working and distinguish different alarm sounds.

16.1 Testing an Alarm

Expand the Test Alarms feature by selecting the "Test Alarms" button on the right hand side of the Participant View Tab.
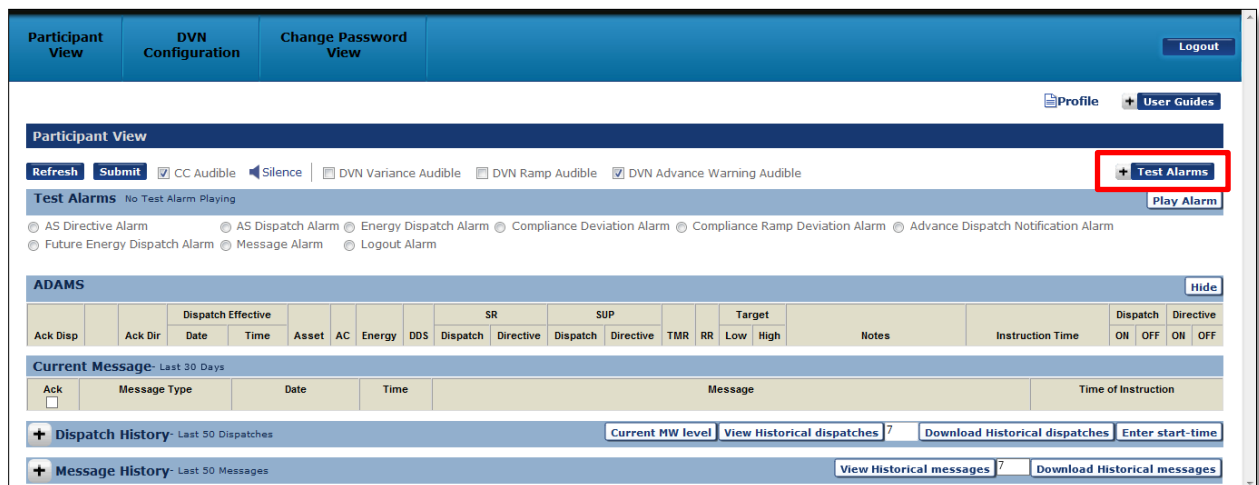
Select the desired alarm to test.

Click the "Play Alarm" button to start the alarm. The alarm will continue playing until silenced or until page is refreshed.

To stop the Test Alarm, Click the "Silence" button.

Public
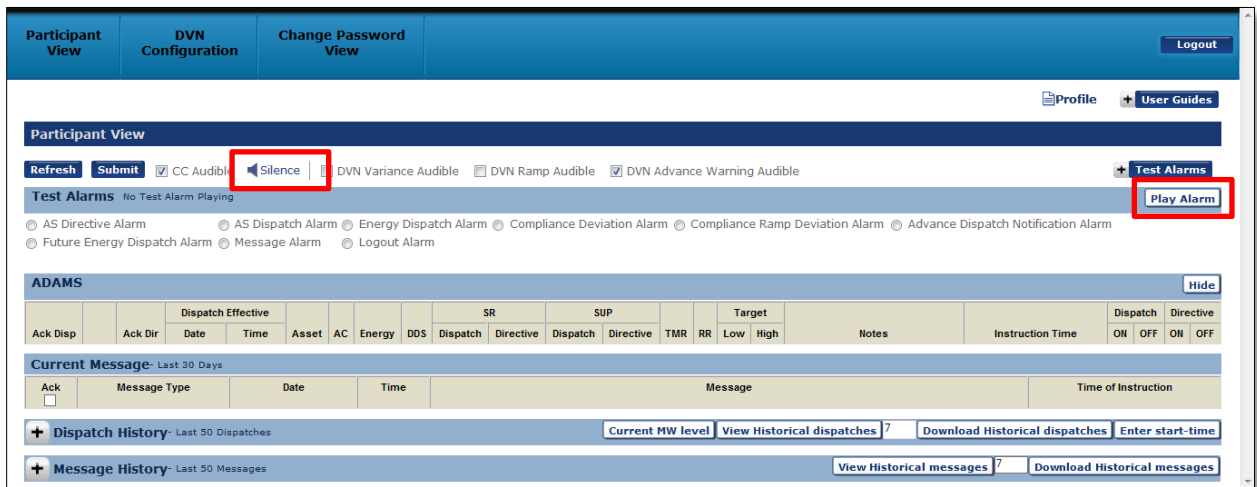
The text beside the "Test Alarms" field will indicate when the alarm sound is playing.

The text beside the "Test Alarms" field will indicate when no alarms are playing.

Click the "Test Alarm" button to return to normal view.

Note: The occurrence of an ADaMS alarm while the Test Alarms functionality is open will terminate any test alarm playing, collapse the Test Alarm tab, and return the user to the ADaMS Participant View to address the alarm.

17 Changing the ADaMS Account Password

Participants have the option of changing their password.

(a) From the Participant View, select "Change Password View" in the top bar.
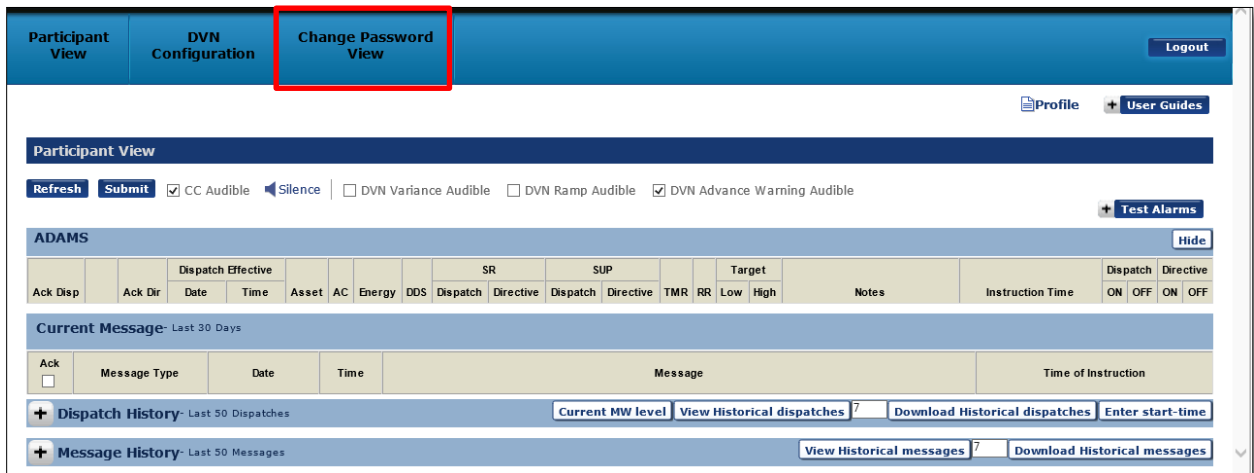
(b) This will display the following screen. Type in the new password and select the "Save" button. To determine password policy, hover your mouse pointer over "Password Policy".
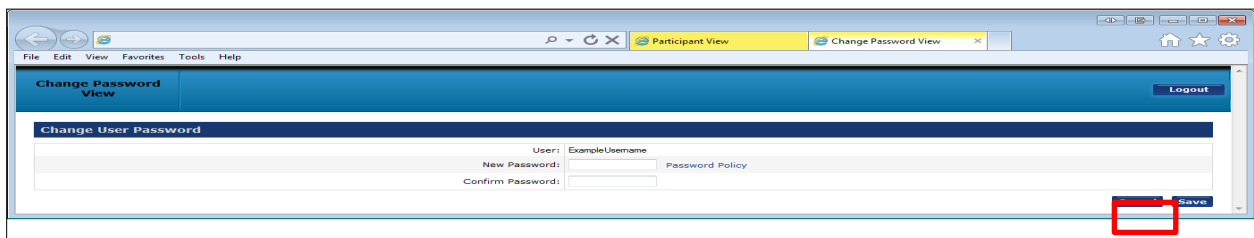
(c) If the password change was successful, you will see the following screen.
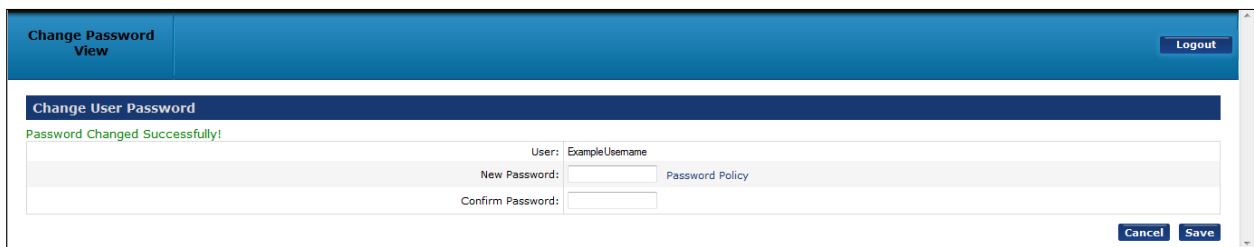
(d) If the password was rejected, you will see the following screen. You will then need to go back to the previous screen and reenter a password that meets the password policy.
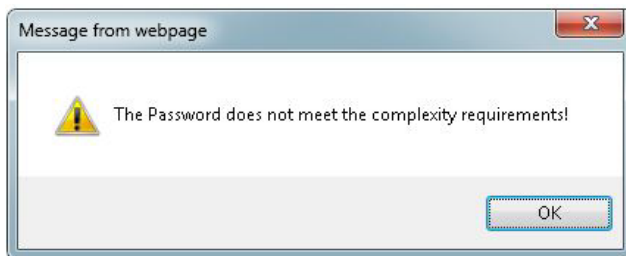
(e) Once the password has been changed successfully, the user may close the tab in the browser by clicking the small "x" near the tab header. The user will be returned to Participant View. Alternatively, a user may return to the Participant View by selecting the corresponding tab in the browser.
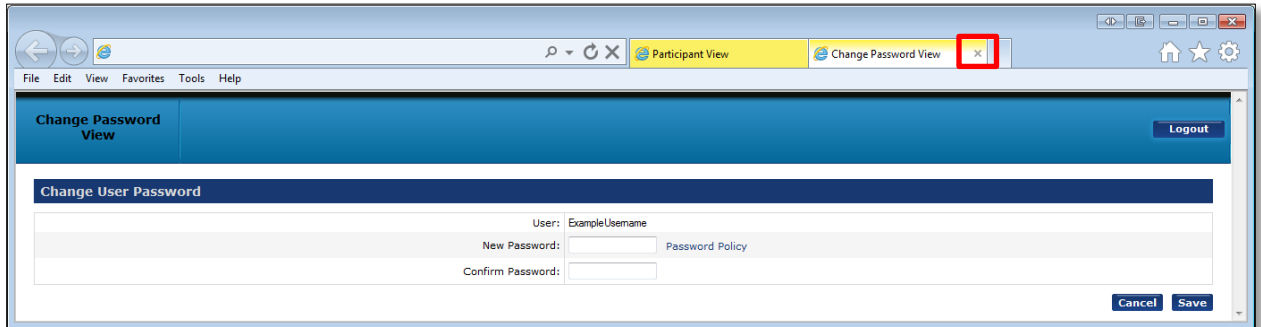
18 ADaMS Dispatch Examples

At 15:04, asset TST1 acknowledged a dispatch for 15:05 for Energy to 350 MW. Target Low/High is 350 MW.

At 15:09, asset TST1 acknowledged a dispatch for 15:10 for DDS to 25 MW, resulting in an Energy dispatch to 325 MW. Target Low/High is 325 MW.

| Participant View | DVN Configuration | Change Password View | | Logout |

Profile   + User Guides

Participant View

Refresh   Submit   ☑ CC Audible   ◀ Silence | ☐ DVN Variance Audible   ☐ DVN Ramp Audible   ☑ DVN Advance Warning Audible

+ Test Alarms

ADAMS   Hide

| | | Dispatch Effective | | | | | | SR | | SUP | | | | Target | | | | | Dispatch | | Directive | |
| Ack Disp | Ack Dir | Date | Time | Asset | AC | Energy | DDS | Dispatch | Directive | Dispatch | Directive | TMR | RR | Low | High | Notes | Instruction Time | ON | OFF | ON | OFF |

Current Message

| Ack | Message Type | Date | Time | Message | Time of Instruction |

— Dispatch History - Last 50 Dispatches   Current MW level   View Historical dispatches [7]   Download Historical dispatches   Enter start-time

	Dispatch Effective		Filter				SR		SUP				Target					Dispatch		Directive	
Status	Date	Time	All ⌄	AC	Energy	DDS	Dispatch	Directive	Dispatch	Directive	TMR	RR	Low	High	Notes	Instruction Time	ON	OFF	ON	OFF
Acknowledged	06/14	15:23	TST1	350	250	25	75	0	0	0	0	0	250	250		06/14 15:22:06 MDT	E,SR			
Acknowledged	06/14	15:10	TST1	350	325	25	0	0	0	0	0	0	325	325		06/14 15:09:48 MDT	E,DDS			
Acknowledged	06/14	15:05	TST1	350	350	0	0	0	0	0	0	0	350	350		06/14 15:04:12 MDT	E			

+ Message History - Last 50 Messages   View Historical messages [7]   Download Historical messages

At 15:22, asset TST1 acknowledged a dispatch for 15:23 for Spinning Reserve to 75 MW, resulting in an Energy dispatch to 250 MW. Target Low/High is 250 MW.

Note: A dispatch for Ancillary Services will only result in auto reduction in energy when the total dispatch is greater than the Available Capability (AC).

Participant View | **DVN Configuration** | **Change Password View** | Logout

Profile | + User Guides

Participant View

Refresh | Submit | ☑ CC Audible | ◀ Silence | ☐ DVN Variance Audible | ☐ DVN Ramp Audible | ☑ DVN Advance Warning Audible

+ Test Alarms

ADAMS — Hide

Ack Disp	Ack Dir	Dispatch Effective Date	Dispatch Effective Time	Asset	AC	Energy	DDS	SR Dispatch	SR Directive	SUP Dispatch	SUP Directive	TMR	RR	Target Low	Target High	Notes	Instruction Time	Dispatch ON	Dispatch OFF	Directive ON	Directive OFF

Current Message

Ack	Message Type	Date	Time	Message	Time of Instruction

− Dispatch History - Last 50 Dispatches

Current MW level | View Historical dispatches [7] | Download Historical dispatches | Enter start-time

Status	Dispatch Effective Date	Time	Filter (All ▼)	AC	Energy	DDS	SR Dispatch	SR Directive	SUP Dispatch	SUP Directive	TMR	RR	Target Low	Target High	Notes	Instruction Time	Dispatch ON	Dispatch OFF	Directive ON	Directive OFF
Acknowledged	06/14	15:35	TST1	350	225	0	75	0	0	0	0	50	225	275		06/14 15:34:12 MDT	E,RR	DDS		
Acknowledged	06/14	15:23	TST1	350	250	25	75	0	0	0	0	0	250	250		06/14 15:22:06 MDT	E,SR			
Acknowledged	06/14	15:10	TST1	350	325	25	0	0	0	0	0	0	325	325		06/14 15:09:48 MDT	E,DDS			
Acknowledged	06/14	15:05	TST1	350	350	0	0	0	0	0	0	0	350	350		06/14 15:04:12 MDT	E			

+ Message History - Last 50 Messages

View Historical messages [7] | Download Historical messages

At 15:34, asset TST1 acknowledged a dispatch off for 15:35 for DDS (0 MW), energy to 225 MW, and Regulating Reserves to 50 MW. Target Low is 225 MW, High is 275 MW.

Low (225 MW) = Max (TMR/UC Dispatch, Energy Dispatch) + SR Directive + SUPG Directive + SUPL Directive.

High (275 MW) = Max (TMR/UC Dispatch, Energy Dispatch) + SR Directive + SUPG Directive + SUPL Directive + RR Dispatch.

Note: Compliance is assessed separately for each dispatch and directive according to the relevant ISO Rule. Adherence to this target may NOT be sufficient to ensure compliance in one or more of these assessments.

aeso

| Participant View | DVN Configuration | Change Password View | | Logout |

Profile | + User Guides

Participant View

Refresh | Submit | ☑ CC Audible | 🔊 Silence | ☐ DVN Variance Audible | ☐ DVN Ramp Audible | ☑ DVN Advance Warning Audible

+ Test Alarms

ADAMS   Hide

		Dispatch Effective						SR		SUP		Target						Dispatch		Directive	
Ack Disp	Ack Dir	Date	Time	Asset	AC	Energy	DDS	Dispatch	Directive	Dispatch	Directive	TMR	RR	Low	High	Notes	Instruction Time	ON	OFF	ON	OFF

Current Message

Ack	Message Type	Date	Time	Message	Time of Instruction

— Dispatch History - Last 50 Dispatches

Current MW level | View Historical dispatches 7 | Download Historical dispatches | Enter start-time

Status	Dispatch Effective Date	Time	Filter [All ▾]	AC	Energy	DDS	SR Dispatch	SR Directive	SUP Dispatch	SUP Directive	TMR	RR	Target Low	Target High	Notes	Instruction Time	Dispatch ON	Dispatch OFF	Directive ON	Directive OFF
Acknowledged	06/14	15:42	TST1	425	225	0	75	0	0	0	300	50	300	350		06/14 15:41:07 MDT	TMR			
Acknowledged	06/14	15:35	TST1	350	225	0	75	0	0	0	0	50	225	275		06/14 15:34:12 MDT	E,RR	DDS		
Acknowledged	06/14	15:23	TST1	350	250	25	75	0	0	0	0	0	250	250		06/14 15:22:06 MDT	E,SR			
Acknowledged	06/14	15:10	TST1	350	325	25	0	0	0	0	0	0	325	325		06/14 15:09:48 MDT	E,DDS			
Acknowledged	06/14	15:05	TST1	350	350	0	0	0	0	0	0	0	350	350		06/14 15:04:12 MDT	E			

+ Message History - Last 50 Messages

View Historical messages 7 | Download Historical messages

At 15:41, asset TST1 acknowledged a dispatch for 15:42 for Transmission Must Run (TMR) to 300 MW. Target Low is 300 MW, High is 350 MW. Note that the TMR column has been updated to TMR/UC. When a unit commitment instruction is issued in the TMR/UC column, it will be accompanied with a note indicating the TMR/UC is for a unit commitment directive in effect. A TMR dispatch is not accompanied with an automated note at this time.

Participant View | **DVN Configuration** | **Change Password View** | Logout

Profile + User Guides

Participant View

Refresh | Submit | ☑ CC Audible | 🔊 Silence | ☐ DVN Variance Audible | ☐ DVN Ramp Audible | ☑ DVN Advance Warning Audible

+ Test Alarms

ADAMS — Hide

Ack Disp	Ack Dir	Dispatch Effective Date	Time	Asset	AC	Energy	DDS	SR Dispatch	SR Directive	SUP Dispatch	SUP Directive	TMR	RR	Target Low	High	Notes	Instruction Time	Dispatch ON	Dispatch OFF	Directive ON	Directive OFF

Current Message

Ack	Message Type	Date	Time	Message	Time of Instruction

Dispatch History - Last 50 Dispatches

Current MW level | View Historical dispatches 7 | Download Historical dispatches | Enter start-time

Status	Date	Time	Filter: All ▾	AC	Energy	DDS	SR Dispatch	SR Directive	SUP Dispatch	SUP Directive	TMR	RR	Low	High	Notes	Instruction Time	Dispatch ON	Dispatch OFF	Directive ON	Directive OFF
Acknowledged	06/14	16:05	TST1	425	225	0	0	75	0	0	300	50	375	425		06/14 16:05:54 MDT			SR	SR
Acknowledged	06/14	15:42	TST1	425	225	0	75	0	0	0	300	50	300	350		06/14 15:41:07 MDT	TMR			
Acknowledged	06/14	15:35	TST1	350	225	0	75	0	0	0	0	50	225	275		06/14 15:34:12 MDT	E,RR	DDS		
Acknowledged	06/14	15:23	TST1	350	250	25	75	0	0	0	0	0	250	250		06/14 15:22:06 MDT	E,SR			
Acknowledged	06/14	15:10	TST1	350	325	25	0	0	0	0	0	0	325	325		06/14 15:09:48 MDT	E,DDS			
Acknowledged	06/14	15:05	TST1	350	350	0	0	0	0	0	0	0	350	350		06/14 15:04:12 MDT	E			

+ Message History - Last 50 Messages

View Historical messages 7 | Download Historical messages

At 16:05, asset TST1 acknowledged a directive for Spinning Reserves to 75 MW, resulting in a dispatch off for Spinning Reserves (0 MW). Target Low is 375 MW, High is 425 MW.

Note: Compliance is assessed separately for each dispatch and directive according to the relevant ISO rules. Adherence to this target may NOT be sufficient to ensure compliance in one or more of these assessments.

Participant View | **DVN Configuration** | **Change Password View** | Logout

Profile | + User Guides

Participant View

Refresh | Submit | ☑ CC Audible | ◀ Silence | ☐ DVN Variance Audible | ☐ DVN Ramp Audible | ☑ DVN Advance Warning Audible

+ Test Alarms

ADAMS
Hide

Ack Disp	Ack Dir	Dispatch Effective Date	Time	Asset	AC	Energy	DDS	SR Dispatch	SR Directive	SUP Dispatch	SUP Directive	TMR	RR	Target Low	High	Notes	Instruction Time	Dispatch ON	OFF	Directive ON	OFF

Current Message

Ack	Message Type	Date	Time	Message	Time of Instruction

− Dispatch History- Last 50 Dispatches

Current MW level | View Historical dispatches | 7 | Download Historical dispatches | Enter start-time

Status	Dispatch Effective Date	Time	Filter: All	AC	Energy	DDS	SR Dispatch	SR Directive	SUP Dispatch	SUP Directive	TMR	RR	Target Low	High	Notes	Instruction Time	Dispatch ON	OFF	Directive ON	OFF
Acknowledged	**06/14**	**16:25**	**TST1**	**425**	**225**	**0**	**75**	**0**	**0**	**0**	**300**	**50**	**300**	**350**		**06/14 16:25:42 MDT**	**SR**			**SR**
Acknowledged	06/14	16:05	TST1	425	225	0	0	75	0	0	300	50	375	425		06/14 16:05:54 MDT		SR	SR	
Acknowledged	06/14	15:42	TST1	425	225	0	75	0	0	0	300	50	300	350		06/14 15:41:07 MDT	TMR			
Acknowledged	06/14	15:35	TST1	350	225	0	75	0	0	0	0	50	225	275		06/14 15:34:12 MDT	E,RR	DDS		
Acknowledged	06/14	15:23	TST1	350	250	25	75	0	0	0	0	0	250	250		06/14 15:22:06 MDT	E,SR			
Acknowledged	06/14	15:10	TST1	350	325	25	0	0	0	0	0	0	325	325		06/14 15:09:48 MDT	E,DDS			
Acknowledged	06/14	15:05	TST1	350	350	0	0	0	0	0	0	0	350	350		06/14 15:04:12 MDT	E			

+ Message History- Last 50 Messages

View Historical messages | 7 | Download Historical messages

At 16:25, asset TST1 acknowledged a directive off for Spinning Reserves (0 MW), resulting in a dispatch for Spinning Reserves to 75 MW. Target Low is 300 MW, High is 350 MW.

Participant View | **DVN Configuration** | **Change Password View** | Logout

Profile | + User Guides

Participant View

Refresh | Submit | ☑ CC Audible | 🔊 Silence | ☐ DVN Variance Audible | ☐ DVN Ramp Audible | ☑ DVN Advance Warning Audible

+ Test Alarms

ADAMS | Hide

Ack Disp	Ack Dir	Dispatch Effective Date	Dispatch Effective Time	Asset	AC	Energy	DDS	SR Dispatch	SR Directive	SUP Dispatch	SUP Directive	TMR	RR	Target Low	Target High	Notes	Instruction Time	Dispatch ON	Dispatch OFF	Directive ON	Directive OFF

Current Message

Ack	Message Type	Date	Time	Message	Time of Instruction

− Dispatch History- Last 50 Dispatches

Current MW level | View Historical dispatches | 7 | Download Historical dispatches | Enter start-time

Status	Date	Time	Filter: All	AC	Energy	DDS	SR Dispatch	SR Directive	SUP Dispatch	SUP Directive	TMR	RR	Low	High	Notes	Instruction Time	Dispatch ON	Dispatch OFF	Directive ON	Directive OFF
Acknowledged	06/14	16:43	TST1	425	225	0	0	0	0	0	300	0	300	300		06/14 16:42:34 MDT		RR,SR		
Acknowledged	06/14	16:25	TST1	425	225	0	75	0	0	0	300	50	300	350		06/14 16:25:42 MDT	SR			SR
Acknowledged	06/14	16:05	TST1	425	225	0	0	75	0	0	300	50	375	425		06/14 16:05:54 MDT		SR	SR	
Acknowledged	06/14	15:42	TST1	425	225	0	75	0	0	0	300	50	300	350		06/14 15:41:07 MDT	TMR			
Acknowledged	06/14	15:35	TST1	350	225	0	75	0	0	0	0	50	225	275		06/14 15:34:12 MDT	E,RR	DDS		
Acknowledged	06/14	15:23	TST1	350	250	25	75	0	0	0	0	0	250	250		06/14 15:22:06 MDT	E,SR			
Acknowledged	06/14	15:10	TST1	350	325	25	0	0	0	0	0	0	325	325		06/14 15:09:48 MDT	E,DDS			
Acknowledged	06/14	15:05	TST1	350	350	0	0	0	0	0	0	0	350	350		06/14 15:04:12 MDT	E			

+ Message History- Last 50 Messages

View Historical messages | 7 | Download Historical messages

At 16:42, asset TST1 acknowledged a dispatch off for 16:43 for Spinning Reserves (0 MW) and Regulating Reserves (0 MW). Target Low/High is 300 MW.

Participant View	DVN Configuration	Change Password View		Logout

Profile   + User Guides

Participant View

Refresh Submit ☑ CC Audible ◀ Silence | ☐ DVN Variance Audible ☐ DVN Ramp Audible ☑ DVN Advance Warning Audible

+ Test Alarms

ADAMS   Hide

Ack Disp	Ack Dir	Dispatch Effective Date	Time	Asset	AC	Energy	DDS	SR Dispatch	SR Directive	SUP Dispatch	SUP Directive	TMR	RR	Target Low	High	Notes	Instruction Time	Dispatch ON	Dispatch OFF	Directive ON	Directive OFF

Current Message

Ack	Message Type	Date	Time	Message	Time of Instruction

— Dispatch History - Last 50 Dispatches   Current MW level | View Historical dispatches [7] | Download Historical dispatches | Enter start-time

Status	Dispatch Effective Date	Time	Filter [All]	AC	Energy	DDS	SR Dispatch	SR Directive	SUP Dispatch	SUP Directive	TMR	RR	Target Low	High	Notes	Instruction Time	Dispatch ON	Dispatch OFF	Directive ON	Directive OFF
Acknowledged	06/14	17:00	TST1	425	225	0	0	0	0	0	0	0	225	225		06/14 16:47:51 MDT		TMR		
Acknowledged	06/14	16:43	TST1	425	225	0	0	0	0	0	300	0	300	300		06/14 16:42:34 MDT		RR,SR		
Acknowledged	06/14	16:25	TST1	425	225	0	75	0	0	0	300	50	300	350		06/14 16:25:42 MDT	SR			SR
Acknowledged	06/14	16:05	TST1	425	225	0	0	75	0	0	300	50	375	425		06/14 16:05:54 MDT		SR	SR	
Acknowledged	06/14	15:42	TST1	425	225	0	75	0	0	0	300	50	300	350		06/14 15:41:07 MDT	TMR			
Acknowledged	06/14	15:35	TST1	350	225	0	75	0	0	0	0	50	225	275		06/14 15:34:12 MDT	E,RR	DDS		
Acknowledged	06/14	15:23	TST1	350	250	25	75	0	0	0	0	0	250	250		06/14 15:22:06 MDT	E,SR			
Acknowledged	06/14	15:10	TST1	350	325	25	0	0	0	0	0	0	325	325		06/14 15:09:48 MDT	E,DDS			
Acknowledged	06/14	15:05	TST1	350	350	0	0	0	0	0	0	0	350	350		06/14 15:04:12 MDT	E			

+ Message History - Last 50 Messages   View Historical messages [7] | Download Historical messages

At 16:47, asset TST1 acknowledged a future dispatch off for TMR (0 MW) at 17:00. Target Low/High is 225 MW.

Note: In the event that a real time dispatch is acknowledged for a different service type than a future dispatch, the future dispatch instruction will be updated to reflect the appropriate service level. Participant will be notified when a future dispatch record has been updated.

19 ADaMS Request Form

Available at www.aeso.ca > Market > Market Participation > System Tools > Automated Disptach and Messaging System (ADaMS)