

# **AESO Stakeholder Update on Mothball Outages**

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1. Background
  - Issues
  - Rationale
2. Mothball Rule
  - Definition of *Mothball Outage*
  - Overview of Section 306.7
3. Mothball Outages in the Market Framework
4. Principles for consideration in the comprehensive review
5. Scope of Comprehensive Review
  - Capturing issues with stakeholders
  - AESO proposal for scope of comprehensive review
6. Next Steps

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- The AESO received questions from various stakeholders regarding generating unit mothball outages. Some market participants indicated that mothball outage activity could include laying up plant equipment for an extended outage, reducing plant staff – activities that may require significant work to reverse.
- Some market participants identified potential “loop holes” or unclear provisions in the ISO Rules that may have enabled a participant to take a mothball outage (i.e. ISO Rule 202.4 *Managing Long Lead Time Assets*, ISO Rule 306.5, *Generator Outage Reporting and Coordination* or ISO Rule 203.3, *Energy Restatements (AOR)*)

# Background – ISO Rules Prior to Expedited Mothball Changes

- None of these ISO Rules were intended to address mothball outages. Market Participants taking a mothball outage would not meet the intent of the ISO rules.
- Using current loopholes such as Section 202.4 of the ISO rules, *Managing Long Lead Time Assets* was an unacceptable means to take a mothball outage
  - Not transparent (long lead time assets are not incorporated into the AESO's outage reports)
  - The AESO would have no means to address reliability concerns.
- Arguments were made that the market participants taking a mothball outage under the existing ISO rule framework could be offside the FEOC Regulation.

# Background – Rationale for Expedited Mothball Changes

- The AESO determined that a mothball outage required a mechanism different than:
  - Long Lead Time
  - Forced outages/AC restatements/AORs
  - Planned outages
  - Economically withholding/MW restatements
- The AESO sought a practical outcome to ensure that mothball outages were taken in a **transparent** and **reliable** manner.
- Upon implementing a solution, the AESO indicated that it would immediately begin comprehensive review and consultation regarding mothball outages and related issues.

# Background – Mothballing in Other Jurisdictions

Jurisdiction	Defined?	Set Terms?	Minimum Notification Requirement?	Reliability Assessment Performed by ISO?
ERCOT	✓	✓	✓	✓
PJM	✓	✓	✓	✓
NYISO	✓	✓	✓	
MISO	✓*		✓	✓
CAISO	✓*	✓*	✓	

- Means “*a reduction in the available capability of a source asset which is anticipated and occurs as a result of deliberate manual action and is not a planned outage.*”
- Current definitions and rules do not address the specific activities associated with mothball outages
- Instead, the current definition describes *mothball outage* as:
  - anticipated action
  - deliberate and manual action
  - not a planned outage (i.e., not for the purpose of maintenance)
- A distinction between mothball outages and other outages is that mothball outages are of a non-operational nature.

# Mothball Rule

## Overview of Section 306.7

- a pool participant is required to submit notification of the commencement or cancellation of a mothball outage to the AESO within a minimum timeframe of three months;
- a pool participant is required to submit to the AESO, on an ongoing basis, mothball outage plans that, as of the time of submission, are planned to occur in the next 24 months. Revisions to mothball outage plans must be submitted three months prior to the day the revision takes effect or the mothball outage is to start;
- mothball outage information is included, on an aggregated basis, in the outage information compiled by the AESO and published on the AESO website;

# Mothball Rule

## Overview of Section 306.7

- mothball outage information is incorporated into the supply adequacy assessments performed by the AESO;
- mothball outages are subject to cancellation by way of a directive from the AESO as required to alleviate a supply adequacy issue; and
- a mothball outage must be cancelled by the pool participant within two years of the date of commencement of the mothball outage, at which time the pool participant must either return the source asset to service or terminate the STS contract for the generating source asset.

# Mothball Rule

## Further Review of Mothballing

- Section 306.7 was developed as an interim means to ensure mothball outages are undertaken in a transparent, reliable and FEOC manner pending a further a comprehensive review of mothball outages and related issues.
  - There are a number of unresolved issues that the AESO intends to address as a part of its comprehensive review
  - The AESO will be seeking feedback from stakeholders to identify these issues
  - The issue identification will assist the AESO in defining the scope of the comprehensive review

# Mothball Outages in the Market Framework

- The AESO will be assessing mothball outages as a permanent feature in the Alberta electricity market framework.
- This assessment will include a determination of how mothball outages and other related issues can be addressed in a manner that aligns with with the AESO's legislative mandate:
  - to provide for the safe reliable and economic operation of the interconnected electric system (including supply adequacy considerations)
  - to promote a FEOC market for electricity
- The AESO will be gathering stakeholder input as a part of this process and will be establishing a separate forum for stakeholders to provide input.
  - The AESO is making considerations for the manner in which stakeholder input will be provided.

# Principles for Consideration in the Comprehensive Review

- Fairness
- Efficiency
- Openly Competitive/Transparency
- Reliability

# Principles for Consideration in the Comprehensive Review— Fairness

- Fairness
  - For incumbent participants and potential new entrants into the Alberta wholesale power market
  - Applied to all market participants
- Limiting undue market uncertainty
  - The market should have accurate information about a future supply conditions in the market
- Barrier to entry
  - Does the uncertainty about the possible return of mothball capacity deter new investment in generation?
- Undue burden on generators during times of high supply cushion

# Principles for Consideration in the Comprehensive Review– **Economic Efficiency**

- Economic Efficiency
  - Maintaining the fidelity of the price signal in the long and short term
  - Enabling long-term economically efficient outcomes that are fair to both generator and load participants
  - Enabling rational and predictable business decision for market participants based on economic fundamentals

# Principles for Consideration in the Comprehensive Review – **Openly Competitive/Transparent**

- Transparency of outage activity
  - Appropriate notification to market participants regarding unavailability of generating capability
  - Appropriate reporting of unavailability of generating capability
- Mothball-specific reporting
  - What details would be appropriate?

# Principles for Consideration in the Comprehensive Review— Reliability

- Supply adequacy
  - Assessment that the AESO performs to determine whether action is required to ensure supply adequacy
    - Short Term adequacy measures
    - Long Term adequacy measures
- Directives to generating units
  - Long lead time assets
  - Generating units on planned outage
  - Generating units on mothball outages
- Minimum return times for units on mothball outage
  - Identifying assets that could assist in meeting supply adequacy issues

# Scope of Comprehensive Review

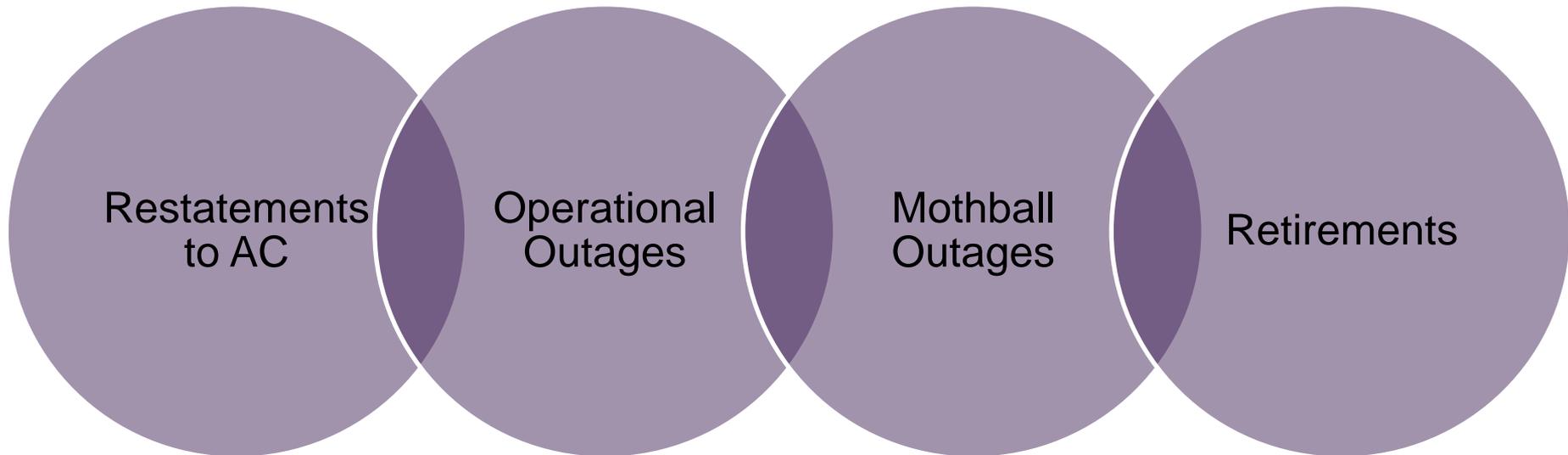
## Capturing Issues with Stakeholders

- Round-table exercise
- Identifying the market actions related to mothball outages
  - Mothball Outages
  - Operational Outages (planned outages and forced outages)
  - Restatements to AC
  - Retirements
- Identifying the issues
  - What types of requirements should be addressed to deal with mothballing and related market actions?
  - What market mechanisms should be reviewed to ensure that the principles are applied in a consistent manner?

# Scope of Comprehensive Review

## Capturing Issues with Stakeholders

Principles (Fairness, Transparency, Economic Efficiency, System Reliability)



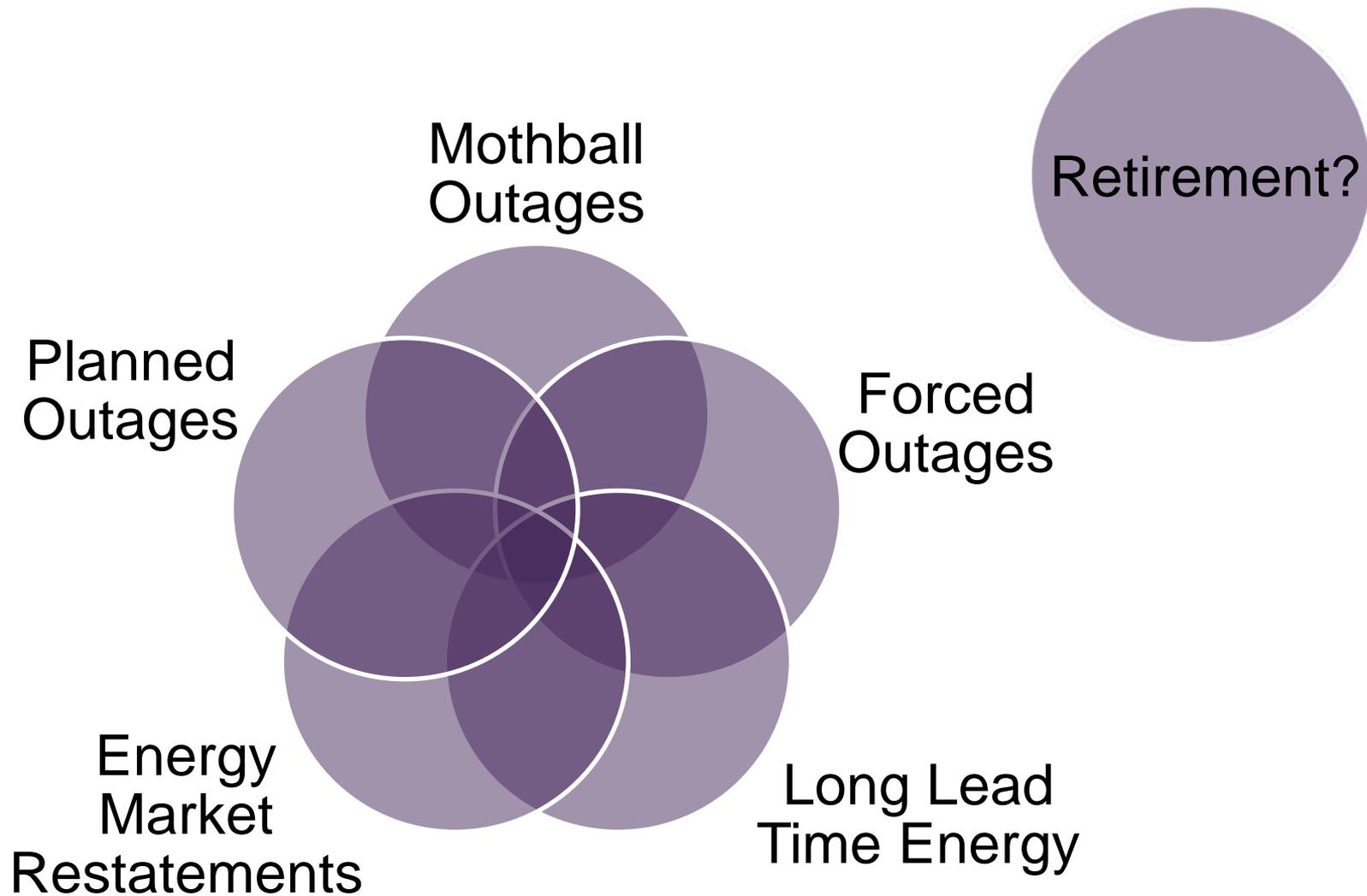
Capturing Issues

# Scope of Comprehensive Review

## AESO Proposal for Scope

- The AESO has identified the potential to address mothball outages in a manner that aligns various requirements related to the availability of generation submitted by market participants.
  - This work may include unifying ISO Rules related to AC submissions, outage scheduling and coordination and changes to MC

# AESO Proposal for Scope Market Actions – The Existing Framework



# AESO Proposal for Scope Market Actions – Generation Retirements

- The AESO does not generally address generation retirements in the ISO rules.
  - Section 201.1 of the ISO rules *Pool Participant Registration* addresses termination of registration
  - Section 202.6 *Adequacy of Supply* addresses long term adequacy metrics that include a retirement metric of publicly announces retirements
  - Registered pool participants (source assets) and their maximum capabilities are shown on the AESO's Current Supply & Demand page
- The AESO will explore the relationship between retirement, decommissioning and other related activities.
- The AESO will explore potential requirements related to generator retirement procedures.

# AESO Proposal for Scope Market Actions – Outages

- There are currently four outage classifications that apply to generating units:
  - Mothball outages
  - Planned outages
  - Delayed forced outages
  - Automatic forced outages
- The various outages are distinguishable by whether or not the outage is
  - Anticipated or not anticipated
  - A result of manual action or automatic action
  - Is a part of regular maintenance
- All outages result in reduction to available capability

# AESO Proposal for Scope Market Actions – Energy Restatements and Acceptable Operational Reasons (AORs)



- There are four classifications of energy restatements in accordance with Section 203.1 of the ISO Rules *Energy Restatements*
- Restatements to Available Capability must be accompanied by an AOR to indicate the manner in which the unavailability is related to constraint of an operational nature
  - Specific AOR categories are captured in the definition of Acceptable Operational Reason in the AESO’s Consolidated Authoritative Document Glossary.
- Overlap of restatements to AC and forced outages

# AESO Proposal for Scope Market Actions – Long Lead Time Assets

- Submission of a generating unit as a long lead time asset is another means to indicate a generating unit is unavailable for dispatch (within a specified timeframe).
  - As a part of the expedited mothball changes, the AESO limited the start-up time of long lead time assets to 36 hours.
- For generating units that are not synchronized (the entirety the generating unit's capability is not currently dispatched), the pool asset does not submit a reduction in AC.
  - As such, there is very little transparency of the short-term unavailability of long lead time assets

# AESO Proposal for Scope Requirements and Mechanisms

- Requirements
  - Notifications (timeframes for notifying the AESO and the market)
  - Reporting (disseminating information to the market)
  - Issuing/responding to dispatch and directives
  - Tariff requirements
- Mechanisms
  - Submitting and Reporting of AC
  - Changes to MC
  - Outage Scheduling and Outage Reports
  - Supply Adequacy Assessments
  - STS contract

# AESO Proposal for Scope Submitting and Reporting of Available Capability

- Currently, AC submissions are related to a variety of market actions.
- Energy restatements to AC
  - Requires an acceptable operational reason (“AOR”)
- Outages of various kinds
  - Distinguishing between the various outages - do the principles of fairness, transparency, economic efficiency and reliability need to be applied?
  - At a system level, the AESO does not distinguish between outages
- Synchronized (partial) long lead time assets
- The AESO will be exploring the various market actions related to the submission of AC values with the intent to apply requirements for all market actions in a consistent manner.

# AESO Proposal for Scope Changes to Maximum Capability

- Currently, there are minimal requirements related to the reporting of MC changes
  - MC as functionality in ETS
  - MC reported on the CSD page
    - Transparency of long-term supply
- The AESO will be exploring MC as an indication of the longer-term capability of a generating unit.
  - Can MC submissions be used to address any market actions such as retirement or mothball outages?
  - What impact does this have on the market conduct, competitive outcomes, effectiveness of market signals?

# AESO Proposal for Scope Outage Scheduling and Outage Reports

- Generation outage scheduling information is submitted by market participants to the AESO through ETS by submitting AC values for the next 24 months.
- This information, aggregated by fuel type, is disseminated in various reports:
  - Daily Outage Report
  - Monthly Report
  - 7-day Generation Availability Report
- Currently, future unavailability from generation retirements are also made visible to the market by submitting AC values into ETS. This unavailability is indistinguishable from outage information.
- The AESO will be exploring the manner in which information related to the unavailability of generation is made transparent to the market.

# AESO Proposal for Scope Supply Adequacy Assessments

- The AESO performs adequacy assessments to determine likelihood of supply shortfall events across a spectrum of time periods.
- If an assessment indicates that a supply shortfall event is likely to occur, the AESO takes steps to alleviate the supply adequacy issue. These steps may include:
  - Coordinating with generating units to make generating capability available
  - Issuing directives to recall long lead time assets
  - Issuing directives to cancel or re-schedule generator outages
- The AESO will be exploring how various market actions are incorporated into the adequacy assessments and the AESO's actions to address any potential supply adequacy issues.

# AESO Proposal for Scope STS for Unavailable Generating Units

- Current treatment of units on mothball outage that do not return after 2 years (as per Section 306.7):
  - Cancellation of STS contract
- The AESO is considering further options regarding tariff treatment for generating units on a mothball outage.
  - Requirements that align with the principles
- The AESO will also explore the tariff treatment of generating units that are retiring.
- Considerations for renewing or reapplying for connection service for generating units that return from unavailability within a specified timeframe.

- Ongoing work related to the Alberta Climate Leadership Plan
  - Coal retirement schedules
  - Renewable incentives
  - Other market design considerations
- This work will continue in parallel with the comprehensive mothball outage review.
- There may be a need for the mothball review to be flexible in consideration of changes to the market framework.

- In Scope:
  - Tariff Treatment
  - Generation Retirements
  - Other Outages
  - Restatements to Available Capability
  - Changes to Maximum Capability
  - Other items identified by stakeholders?
- Out of Scope (but to be considered as necessary):
  - Alberta Climate Leadership Plan

- The AESO will be seeking stakeholder input on whether mothball outages should be a permanent feature of the Alberta market .
  - A separate forum will be initiated to gather this stakeholder input.
- The AESO will also be seeking input on the scope that the AESO is proposing for issues to be included in the mothball review.
  - Once the scope is established, the AESO will further engage stakeholders on mothballing and other related market actions.

