

**Proposed Amendments to Section
306.7 of the ISO Rules, *Mothball
Outage Reporting*
Session #2**

April 29, 2021

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- The participation of everyone is critical to the engagement process. To ensure everyone has the opportunity to participate, we ask you to:
 - Listen to understand others' perspectives
 - Disagree respectfully
 - Balance airtime fairly
 - Keep an open mind

- Meeting minutes will be prepared by AESO employees with the help of a minute-taking software program.
- Organization names will be used to identify contributions.
- Draft meeting minutes will be circulated to attendees for review and ultimately posted to the AESO website.

- All attendees will join the webinar in listen-only mode and the host will have attendee cameras disabled and microphones muted.
- When asking or typing in a question, **please state your first and last name and the organization you work for** to ensure your comments are attributed to your company.
- Two ways to ask questions during the Q&A portion if you are accessing the webinar using your computer or smartphone.
 - Raise your “hand”: The host will be notified that you have raised your hand and will open up your microphone when there is an opportunity to do so. Wait until the host opens up your microphone.
 - Type your question into the Q&A window: You are also able to up-vote questions that have been already asked. The host will see your questions and the up-votes and will have your question answered when there is an opportunity to do so.

- Using a 2-in-1/PC/MAC Computer
 - Hover your cursor over the bottom area of the Zoom app and the Controls will appear.
 - Click “Raise Hand”.
 - When the host opens your mic, your name will appear on the screen but your camera will remain turned off.
 - Click “Lower Hand” to lower it if needed.
 - Click the “Q&A” button and typing them in.
- Using Smartphone.
 - Tap “Raise Hand”.
 - When the host opens your mic, your name will appear on the screen but your camera will remain turned off.
 - Tap “Lower Hand” to lower it if needed.
 - You can also ask questions by tapping the “Q&A” button and typing them in.

- If you are accessing the webinar via conference call
 - Press *9 on your keypad to Raise your hand.
 - When the host opens your mic, your phone number will appear on the screen, but your camera will remain turned off.
 - Unmute your microphone by pressing *6 and then you can ask your question.
- Phone controls for attendees
 - Press *9 Click phone's dial pad. The host will be notified that you've raised your hand.
 - To toggle between mute and unmute, on your phone's dial pad, press *6.

Introductions & Session Overview

Topic	Facilitator	Time	Duration
Welcome & introductions	Shezana	8:30am	10 min
ISO rule development process and stakeholder engagement framework	Maria	8:40am	10 min
Recap of Session 1	Caitlin	8:50am	10 min
Update on economic test and retirement	Caitlin	9:00am	10 min
Today's session overview and objectives	Caitlin	9:10am	5 min
Review in-scope topics (presentation, Q&A, and round table discussion for each topic) <ul style="list-style-type: none"> - Transmission access issues & alternatives - Recommendation for maximum duration - Subsequent mothball outages 	Caitlin	9:15am	70 min
Break		10:25am	15 min
Review in-scope topics (presentation, Q&A, and round table discussion for each topic) <ul style="list-style-type: none"> - Mothball outage cancellation notification - Recommendation for mothball outage notification - Recommendation for mothball outage reporting - Long lead time and other outages 	Caitlin	10:40am	60 min
Next steps	Shezana	11:40am	5 min
Discussion and Q&A	Caitlin/Shezana	11:45am	45 min

- Market Design
 - Nicole LeBlanc, Director Markets & Tariff
 - Shezana Mills, Manager Market Design
 - Caitlin Fulowski, Senior Analyst Market Design
- Legal and Regulatory Affairs
 - Maria Gray, Regulatory Analyst
 - Ijeoma Ofodile, Legal Counsel

- Best Consulting Solutions Inc.
- Capital Power
- DePal Consulting Limited
- Direct Energy
- ENMAX Corporation
- Heartland Generation Ltd.
- Lionstooth Energy Inc.
- Matt Ayres Consulting
- MSA
- NextEra Insights Inc.
- NorthPoint Energy
- Suncor Energy Inc.
- TransAlta Corporation
- TransCanada Energy Ltd.
- Versorium Energy Ltd.

ISO Rule Development Legislation & Consultation Process

ISO Rules Development

- Section 20 of the *Electric Utilities Act* grants authority to the AESO to develop ISO rules.
- AUC Rule 017, *Procedures and Process for Development of ISO Rules and Filing of ISO Rules with the Alberta Utilities Commission*, sets out the requirements for the development of ISO rules, including:
 - stakeholder engagement requirements; and
 - AUC application requirements

The background of the slide is a blue-tinted photograph of two hands shaking in a firm grip. The hands are positioned in the center-left of the frame. The background also features a faint, geometric network of lines and dots, suggesting a digital or interconnected theme. The overall color palette is monochromatic, dominated by various shades of blue.

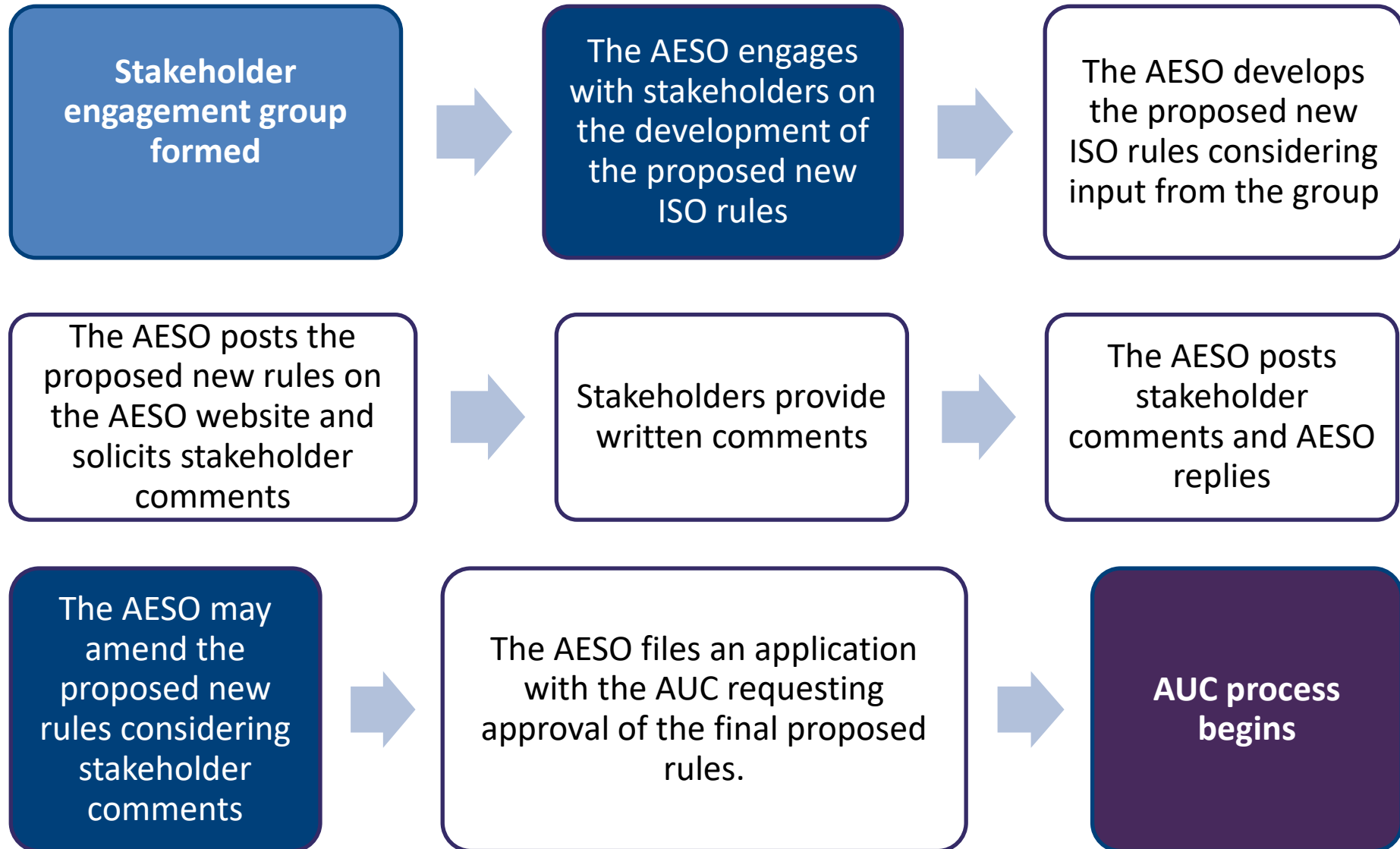
OUR ENGAGEMENT PRINCIPLES

Inclusive and Accessible

Strategic and Coordinated

Transparent and Timely

Customized and Meaningful



Recap: Session #1

- First stakeholder session provided stakeholders with a high-level overview of the mothball outage initiative, including:
 - Objectives
 - Issues
 - Scope
 - Economic principles
 - Efficiency considerations

- Economic Test
 - Review economic requirements to take a mothball outage
- Notification
 - Review 3 months' notification to take a mothball outage and the ability to request a waiver for shorter notice
- Transmission Access
 - Review impact of mothball outages on the efficient use of the transmission system
- 24 Month Maximum Duration
 - Review the 24 month maximum duration for mothball outages and the ability to request a waiver to extend
- Retirement Notification
 - Discuss the need for retirement notification requirements
- Outage Cancellation
 - Discuss alignment of AESO and market participant outage cancellation notification timelines
- Reporting
 - Discuss whether current mothball outage reporting provides sufficient transparency and notification to the market
- Long Lead Time
 - Review maximum 36 hour start-up time

- The following items were determined to be out of scope:
 - Whether mothball outages should be permitted in Alberta's market
 - Requirements for physically removing capacity from the market that are not related to a consistent and coordinated approach with mothball outages
 - We are not conducting a fulsome review of the outage/restatement/long lead time (LLT) rules
 - We are reviewing specific, targeted requirements such as retirement notification and LLT start-up time that have been identified as important elements for a consistent, coordinated approach to the mothball outage framework

Session #1 Recap: Principles

Principle	Application to Mothball Outages
Open Competition	<ul style="list-style-type: none">• Removal of capacity from the market is reported transparently to allow for a competitive market response• Mothball outages do not create barriers to entry including barriers to efficient transmission access for new assets• Mothball outages do not allow for the abuse of market power
Effective Price Signals	<ul style="list-style-type: none">• Long-Term Price Signals: there are clear, transparent signals on the need for new capacity• Short-Term Price Signals: the pool price creates the right signals for orderly dispatch and efficient consumption
Cost Causation	<ul style="list-style-type: none">• Mothball outages do not create unnecessary costs for others
Stability	<ul style="list-style-type: none">• Mothball outages do not create undue uncertainty regarding market conditions or transmission utilization• Mothball outages do not result in unresolvable grid reliability issues
Fairness	<ul style="list-style-type: none">• Asset owners are allowed the flexibility to make operational and economic decisions for their assets using information they deem appropriate• The mothball outage rule is enforceable and enforcement is applied in a consistent manner

Session #1 Recap: Stakeholder Feedback Summary

- Mothball Outages:
 - Clarification on minimum mothball duration should be included as part of the ISO rule
- Other Outages and LLT:
 - Address seams between regular outages and mothball outages
 - Unclear how LLT framework interacts with other outage rules
 - Is the LLT 36-hour start-up time effective?
 - Pre-2016, was there a limit for LLT start-up time?
- Other:
 - The fair, efficient and open competition (FEOC) principle is most relevant; not clear whether cost causation and stability should be considered as part of mothball review

Session #1 Recap: Written Stakeholder Feedback Summary

- Mothball Outages:
 - Mothball rule should maximize flexibility for asset owners to manage their assets without creating barriers to entry. AESO must be careful not to unduly impose mothball restrictions that will increase costs to existing asset owners to mitigate a concern that may create a barrier to entry
 - Maximizing generator flexibility under mothball rule is important for reducing red tape and regulatory burden, supporting a FEOC market, promoting investor confidence, and supporting increased renewable penetration
 - It is not clear why the AESO is reviewing the economic test
 - Request for clarity on how a mothball outage could create a barrier to entry, and what is mean by “barrier to efficient transmission access”
- Other:
 - AESO should tighten pace of consultation

Updates: Economic Test and Retirement Notification

- The AESO will continue to require an attestation from a corporate officer to confirm that a mothball outage is taken for economic reasons
- The MSA, in its mandate of market monitoring, will continue monitoring mothball outages taken under Section 306.7
- The MSA has advised the AESO that:
 - The MSA may review the avoidable costs, and forecast market prices and conditions used by a market participant to determine whether a generator is economic under Section 306.7
 - In the MSA's Q3 2020 Report, the MSA notified the market that it intends to review all significant attestations made under Section 306.7 and will request the forecast revenue and cost data on which the attestation is made
 - The MSA may provide further guidance on their approach to monitoring and enforcement
- The AESO is removing the economic test from the scope of this consultation

- Requirements for the notification of the retirement of a generating unit are addressed in legislation:
 - **Hydro and Electric Energy Act**
 - Section 22 requires notice to be provided to the AUC and AESO before permanently discontinuing the operation of a power plant, or permanently dismantling or removing any works or installations forming part of a power plant
 - Notice must be provided:
 - *At least 60 days notice before the action is taken, if reasonably practicable, or*
 - *As soon as reasonably practicable in any other case*
 - **FEOC Regulation**
 - Section 2(a)-(l) states that conduct by a market participant that does not support the fair, efficient, and openly competitive operation of the market includes:
 - *Providing misleading records to the electricity market or to any other person*
 - *Misrepresenting any information related to the electricity market participant's participation in the electricity market*
- The AESO is removing retirement notification from the scope of this consultation

Overview of Today's Session

- Opportunity for stakeholder feedback and input on in-scope topics through round-table discussion
 - Clarifying questions on issues and alternatives
 - Feedback on alternatives identified by the AESO
 - Opportunity to bring forward additional alternatives for consideration and discussion by the group
- Present AESO recommendations and rationale for selected topics where AESO has identified a preferred alternative
 - Opportunity for stakeholder feedback and questions on recommendations
- Review next steps
- Additional time for discussion and Q&A

Transmission Access

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- Generating units on mothball outage maintain their supply transmission service (STS) contract capacity and are included in the AESO's connection studies on the basis they could return to service within 3 months (minimum notification for outage cancellation)
- Connection projects may be impacted by mothballed generators:
 - Inclusion of mothballed generators in connection studies may result in costly and lower quality connection alternatives for new projects
 - Project owners may opt for reduced MW capacity, cancellation of a project, or relocation
 - There is potential for rework and schedule delays if connection study assumptions change
- Current mothball rule provisions create uncertainty for connection projects:
 - Potential for mothball outage extensions >24 months
 - Ability to return to mothball outage after 3 month return to service

- Mothball outages can create issues for new projects:
 - **Barriers to Entry:** the potential for extended mothball outages may create undue barriers to efficient, cost-effective transmission access for new connection projects.
 - **Unnecessary Costs:** Incremental transmission connection and system costs resulting from a mothball outage are inefficient and unnecessary if a mothballed generator does not return to service. Connection projects may also be subject to costs associated with rework and schedule delays if assumptions in connection studies change.
 - **Uncertainty:** the potential for extended mothball outages may create undue uncertainty for new connection projects regarding the long-term availability of transmission capacity.
- The resolution of these issues must be balanced with flexibility for existing asset owners to make the decision to remove generators from the market on a mothball outage if forecast market prices are insufficient to recover avoidable costs.

Example: Transmission Access

Scenario:

- A new project wants to connect 200 MW in region A
- There is 200 MW of capacity on mothball outage for 2 years in region A
- Connection studies assume 200 MW mothballed capacity could return to service with 3 months notice. Based on studies, the new project will require a remedial action scheme (RAS), an additional \$500k in connection costs, and \$5M in system costs.
- If mothballed capacity is removed from the connection studies, there are no additional connection costs, system costs, or RAS required.

Potential Outcomes:

Outcome	Result
Mothballed capacity returns to service at the end of the mothball outage	No unnecessary costs incurred for project
Mothballed capacity retires at the end of the mothball outage	Project was subject to unnecessary connection and system costs
Mothballed capacity returns to service for 3 months, then starts a second 24-month mothball outage	Inefficient use of transmission resources Potential for unnecessary connection and system costs if mothballed capacity retires after second mothball outage
Market participant requests and receives approval for mothball outage extension	Inefficient use of transmission resources Potential for unnecessary connection and system costs if mothballed capacity retires after extended mothball outage.

Transmission Access: Jurisdictional Review

ISO	Mothball Notification	Maximum Term	Interconnection
AESO	3 months (or shorter with AESO approval)	24 months (or longer with AESO approval)	STS capacity is maintained for duration of mothball outage
PJM	90 days	No maximum term; however, generator must go through interconnection process for restart	Capacity interconnection rights terminated one year from deactivation date unless owner submits a new interconnection request
ISO-NE	Delist bid in capacity auction	Capacity commitment period (1 year)	Interconnection rights are terminated for any resource that does not have output in 3 years
CAISO	60 days	3 years	Within 3 years from mothball effective date, a generator must restart, decommission, retire, repower, or enter the interconnection queue
ERCOT	90 days	No limit - designate mothball for a period, seasonally, or indefinitely	Mothball outages do not impact generator's interconnection
NYISO	365 days	3 years. 120 additional days if required for repairs	Remove mothballed generators from interconnection studies that haven't submitted notice to return after 3-year mothball

Transmission Access: Alternatives Overview

Alternative	Description
1. No change	Generators may take a mothball outage up to a maximum term. Market participants may request an extension to the maximum term.
2. STS reduction	Mothballed generator reduces STS to 0 MW (or appropriate level to reflect a mothball derate) after maximum term if it wishes to extend its mothball outage.
3. Firm maximum term	Implement a firm maximum term for mothball outages and remove the ability to request extensions. After maximum term generator must return to service or terminate STS contract.

Transmission Access: Alternative 1: No Change

- No change to current rule (maximum term, ability to request extension)
- Pros:
 - Flexibility for existing asset owners to request an extension to a mothball outage if the generator remains uneconomic
- Cons:
 - Ability to extend mothball outages creates uncertainty for new connection projects and the market
 - Extended mothball outages can result in an inefficient use of transmission capacity
 - Extended mothball outages may result in payment of unnecessary system and connection costs for new projects

Transmission Access:

Alternative 2: STS Reduction

- After “maximum term”, reduce STS to 0 MW (or appropriate level to reflect a mothball derate) if market participant wants to extend the mothball outage
 - DFO may be required to reduce STS capacity if distribution-connected generator extends mothball outage beyond maximum term
- Mothball outage can continue for an unlimited duration with reduced STS but remains subject to the requirements under Section 306.7
- Pros:
 - Provides generators with flexibility to take an extended mothball outage if necessary
 - Minimizes potential impacts to new connection projects (unnecessary costs, barriers to entry, uncertainty)
 - Consistent treatment across all generators
- Cons:
 - If STS is reduced, generators will be subject to the risks, costs, and administrative burden of going through the connection process if they wish to return to service
 - If STS is reduced, the return to service time may be extended due to requirements under the connection process
 - May incent generator to return to service and take a second mothball outage (discussion required on subsequent outages)

Transmission Access:

Alternative 3: Firm Maximum Term

- Firm maximum term for mothball outages (remove ability to request an extension)
- Generator must return to service or terminate its STS contract post-mothball outage
- Pros:
 - Minimizes potential impacts to new connection projects (unnecessary costs, barriers to entry, uncertainty)
 - Consistent treatment across all generators
- Cons:
 - Reduced flexibility for existing asset owners to take extended mothball outages
 - Generators that aren't causing significant transmission access issues may be forced to return to service/retire (for example, a 10 MW generator located in a region with lots of available transmission capacity)

- Are there any questions on the problems identified?
- Are there any questions on the alternatives presented?
- Are there additional pros/cons for each alternative that the AESO has not identified?
- Are there other alternatives that resolve this issue that the AESO has not considered?
- Do stakeholders have a preference based on the alternatives presented?

- In the comment matrix we will be asking stakeholders to assess the effectiveness of each alternative in balancing relevant principles and provide rationale to support their assessment.
- Principles:
 - **Open Competition:** Mothball outages do not create barriers to efficient transmission access for new assets
 - **Cost Causation:** Prevent unnecessary connection costs and system costs
 - **Fairness:** Rule does not unfairly or inefficiently limit the ability for legitimate mothball outages to occur. Rule requirements are applied in a consistent, transparent manner.
 - **Stability:** Mothball rule does not create undue uncertainty for connection projects or mothballed generators.
- If there are additional alternatives identified in today's session, we will add them to the matrix
 - If you identify additional alternatives after the session, you can add them to your own matrix and assess them

Maximum Duration

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Cost Causation	<ul style="list-style-type: none">• Mothball outages do not create unnecessary costs for others
Stability	<ul style="list-style-type: none">• Mothball outages do not create undue uncertainty regarding market conditions or transmission utilization• Mothball outages do not result in unresolvable grid reliability issues
Fairness	<ul style="list-style-type: none">• Asset owners are allowed the flexibility to make operational and economic decisions for their assets using information they deem appropriate• The mothball outage rule is enforceable and enforcement is applied in a consistent manner

- Current rule requirement:
 - 24-month maximum duration
- Purpose:
 - Maximum term should create balance between (1) flexibility for existing asset owners to remove generators from service during periods of low prices; and (2) certainty for new projects and the efficient use of transmission capacity
- Alternatives:
 - Maintain 24-month maximum term
 - Pros: Balance of flexibility and certainty, consistent with current rule requirements
 - Extend 24-month maximum term:
 - Pros: increased flexibility for existing asset owners
 - Cons: increased uncertainty and potential for barriers to entry and costs for new projects
 - Reduce 24-month maximum term:
 - Pros: reduced uncertainty and potential barriers to entry and costs for new projects
 - Cons: reduced flexibility for existing asset owners

Jurisdictional Review: Maximum Duration

ISO	Mothball Notification	Maximum Term	Interconnection
AESO	3 months (or shorter with AESO approval)	24 months (or longer with AESO approval)	STS capacity is maintained for duration of mothball outage
PJM	90 days	No maximum term; however, generator must go through interconnection process for restart	Capacity interconnection rights terminated one year from deactivation date unless owner submits a new interconnection request
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NYISO	365 days	3 years. 120 additional days if required for repairs	Remove mothballed generators from interconnection studies that haven't submitted notice to return after 3-year mothball

- Recommendation:
 - AESO recommends maintaining the current 24-month maximum term
- Rationale:
 - Provides balance between flexibility for existing asset owners and certainty for new projects
 - Stability – consistent with existing rule requirements
 - Jurisdictional assessment does not provide compelling rationale for change
- Discussion:
 - Are there additional pros/cons associated with each alternative that the AESO did not capture?
 - Do stakeholders have feedback, questions, or concerns with the AESO's recommendation?
 - If stakeholders believe the maximum term should be extended/reduced:
 - What is an appropriate maximum term?
 - How will this balance the need for flexibility and certainty?

Subsequent Mothball Outages

Principles: Subsequent Mothball Outages

Open Competition

- Removal of capacity from the market is reported transparently to allow for a competitive market response
- **Mothball outages do not create barriers to entry including barriers to efficient transmission access for new assets**
- Mothball outages do not allow for the abuse of market power

Effective Price Signals

- Long-Term Price Signals: there are clear, transparent signals on the need for new capacity
- Short-Term Price Signals: the pool price creates the right signals for orderly dispatch and efficient consumption

Cost Causation

- **Mothball outages do not create unnecessary costs for others**

Stability

- **Mothball outages do not create undue uncertainty regarding market conditions or transmission utilization**
- Mothball outages do not result in unresolvable grid reliability issues

Fairness

- **Asset owners are allowed the flexibility to make operational and economic decisions for their assets using information they deem appropriate**
- The mothball outage rule is enforceable and enforcement is applied in a consistent manner

- Current rule requirement:
 - 3 month return to service between mothball outages
- Purpose:
 - Prevents generators from going on long-term mothball outage by requiring generators to incur costs to return to service before taking a subsequent mothball outage
 - Incentivizes decision to either (1) return to the market long-term or (2) retire
- Alternatives:
 - Maintain existing requirement
 - Pros: Flexibility to take a subsequent mothball outage after a 3 month return to service. Alignment with 3 months' notification for taking a mothball outage
 - Cons: Potential for multiple mothball outages with minimal return to service between outages creates uncertainty and potential for barriers to entry and costs for new projects
 - Extend return to service required between mothball outages
 - Pros: Reduced uncertainty and potential for barriers to entry and costs for new projects
 - Cons: Reduced flexibility for existing asset owners
 - Other?

Discussion: Subsequent Mothball Outages

- Are there additional pros/cons associated with each alternative that the AESO did not capture?
- Are there other alternatives that resolve this issue that the AESO has not considered?
- If STS is reduced after maximum term (per the transmission access alternative), does this create risk that a generator will take multiple subsequent mothball outages to avoid reducing STS?
 - How long should a mothball generator be required to return to service to mitigate this risk?
- Do stakeholders have a preference based on the alternatives presented?
 - If the time between mothball outages is extended, do stakeholders have suggestions for an appropriate timeline?

Break – 15 Minutes

Outage Cancellation

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- Current rule requirements:
 - Minimum Notification: Market participant may cancel a mothball outage with a minimum of 3 months' notice
 - Maximum Notification: In a mothball outage notification, a market participant submits the minimum time, which must be no more than 6 months, that is required for the generating unit to return to full capability if it is issued a directive by the AESO
- Purpose:
 - Allow generators to return to market if prices improve
 - Ensures AESO can direct a generator online if required for reliability
 - Ensures market has sufficient notice to respond to changes in generator availability

Recommendation: Alignment of Outage Cancellation Timing

- Recommendation:
 - AESO is recommending the alignment of timing for market participant cancellation with the declared return to service time
 - For example, if it takes 6 months to return to service, market participant must provide 6 months notice to cancel a mothball outage.
 - Maximum return to service time remains at 6 months
 - If return to service timeline changes, market participant must notify the AESO as soon as practical
- Discussion:
 - Do stakeholders have questions or concerns with this recommendation?

Minimum Notification for Outage Cancellation

- AESO is seeking feedback on the current rule's requirement to provide a minimum of 3 months notice to cancel a mothball outage
- Alternatives:
 - **Current State – 3-month minimum notification**
 - Pros: Provides time for market response. Aligned with outage notification timelines
 - Cons: Reduced flexibility for mothballed generators to respond to changes in price
 - **Shorten the minimum notification to cancel a mothball outage**
 - Pros: Increased flexibility for mothballed generators to respond to changes in price
 - Cons: Reduces time for market response. Misaligned with outage notification timelines

Discussion: Minimum Notification for Outage Cancellation

- Are there additional pros/cons associated with each alternative that the AESO did not capture?
- Does the market require 3 months' notice to respond to a mothballed generator returning to service?
- Would a shorter notification create undue uncertainty for other asset owners?
- If a shorter notification timeline is preferred, how much notice should be required?
 - Note that the AESO requires a minimum of 30 days' notice for outage coordination

Mothball Outage Notification

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Recommendation: Mothball Outage Notification

- Current rule requirement:
 - 3 months' notification is required to take a mothball outage; however, market participants may request a waiver to provide shorter notice
- Recommendation
 - AESO recommends maintaining the existing rule requirement
- Rationale:
 - 3 months' notice is required for the AESO's reliability assessments
 - Waiver provision enables shorter notification if required (for example, unexpected maintenance/repair costs)
 - Provides sufficient notification for a competitive market response
 - Alignment with other outage notification timelines
- Discussion
 - Do stakeholders have questions, concerns, or feedback regarding AESO's recommendation?
 - Should the guidelines AESO uses for assessing waiver requests be transparent?

Reporting

Open Competition	<ul style="list-style-type: none">• Removal of capacity from the market is reported transparently to allow for a competitive market response• Mothball outages do not create barriers to entry including barriers to efficient transmission access for new assets• Mothball outages do not allow for the abuse of market power
Effective Price Signals	<ul style="list-style-type: none">• Long-Term Price Signals: there are clear, transparent signals on the need for new capacity• Short-Term Price Signals: the pool price creates the right signals for orderly dispatch and efficient consumption
Cost Causation	<ul style="list-style-type: none">• Mothball outages do not create unnecessary costs for others
Stability	<ul style="list-style-type: none">• Mothball outages do not create undue uncertainty regarding market conditions or transmission utilization• Mothball outages do not result in unresolvable grid reliability issues
Fairness	<ul style="list-style-type: none">• Asset owners are allowed the flexibility to make operational and economic decisions for their assets using information they deem appropriate• The mothball outage rule is enforceable and enforcement is applied in a consistent manner

- Current practice:
 - Mothball outages are aggregated with other outages in AESO's reporting
- Recommendation:
 - Separate aggregated reporting for mothball outages
 - The FEOC Regulation requires the AESO aggregates outage reporting to the extent practicable
 - Include reported time to return to service
- Rationale:
 - A generator that is removed from the market due to economics sends a different signal to the market than one that is removed for physical reasons
 - Return to service timeline provides market participants with insight on how quickly capacity could return to the market
- Discussion:
 - Do stakeholders have questions, concerns, or feedback regarding AESO's recommendation?

LLT and Planned Outages

	Mothball Outage	Long Lead Time Asset
Reason for removal	Economic – attestation required	Physical – Type 1 longer than 1 hour to synchronize; Type 2 longer than 1 hour to deliver distinct portion of MW
Notification	3 months notice	No notification
Duration	No min, max 24 months	Unlimited
Cancellation by market participant	3 months notice	Maximum start-up time must be entered as no greater than 36 hours in ETS
Can AESO direct online?	Yes – AESO can direct unit to come online, may take up to 6 months	Yes. ETS start-up time should reflect ability to respond to directive online.

- LLT energy reflects the *physical capabilities* of an asset during normal operating conditions. Mothball outage reflects an *economic decision* to temporarily remove an asset from the market.
- AESO’s pricing framework analysis showed LLT energy responds to price signals
 - From 2015-2019 LLT assets had an average annual availability of 61% during hours where pool price was greater than or equal to \$999.99/MWh. In all instances, unavailability was due to operational reasons

- AESO is reviewing LLT requirements that have been identified as important elements for a consistent, coordinated approach to the mothball outage framework.
- The LLT maximum start-up time prevents market participants from using the LLT rule to effectively “mothball” a generator through an extended start-up time.
- Maximum 36 hours start-up time:
 - AESO is seeking feedback from stakeholders on whether the 36-hour maximum is sufficient for all LLT assets under normal operating conditions.
- LLT type 2 maximum “start-up” time:
 - **Current State:**
 - Current Section 202.4 requires entry of a “start-up time no greater than 36 hours in the Energy Trading System”.
 - The start-up time in ETS is a constraint that is entered for the initial start-up time for an asset. Therefore, this only applies to Type 1 LLT assets.
 - **Recommendation:**
 - AESO is proposing an amendment to the rule to apply a maximum 36-hour start-up time for LLT type 2 energy.

- Do stakeholders have concerns with the 36-hour maximum start-up time under the current rule?
- Do stakeholders have questions or concerns regarding a maximum start-up time for LLT type 2 energy?
- Do stakeholders have any outstanding questions or concerns regarding the interplay between LLT and mothball outages?

Planned Outages and Mothball Outages

	Mothball Outage	Planned Outage
Reason for removal	Economic – attestation required	Physical - maintenance
Notification	3 months notice	3 months notice (unless reason for shorter notice)
Duration	No min, max 24 months	Unlimited
Post-outage requirement	Can't take planned outage immediately after, or mothball for 3 months	N/A

- Planned outages are taken for regular maintenance including construction, commissioning, or testing.
- Mothball outages reflect an economic decision to temporarily remove an asset from the market if forecast market price are insufficient to recover avoidable costs.

- Through stakeholder feedback we received comments that there are “seams” between mothball outages and regular outages.
- The AESO does not see issues with the existing requirements for planned outages in regard to the consistent, coordinated approach to the mothball outage framework.
- Do stakeholders have any additional questions regarding the interplay between planned outages and mothball outages?

Next Steps

- AESO will circulate comment matrices for stakeholders to provide additional comments after this session
- Stakeholders provide written comments
- AESO will review comments received
- AESO will notify stakeholders by June 2021 of path forward for this engagement (based on feedback received and the AESO's assessment)

Q&A and Discussion

Thank you