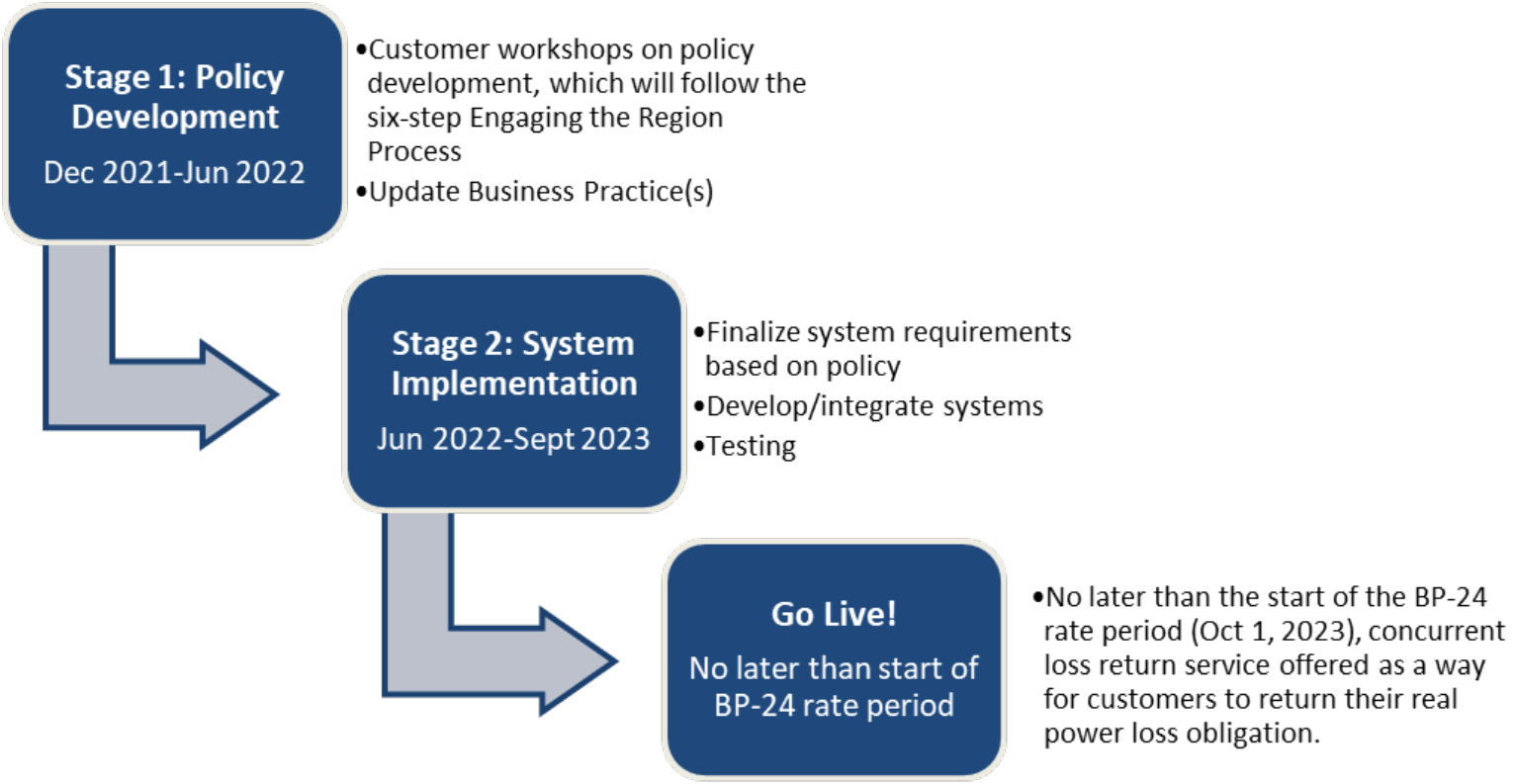
Concurrent Loss Return Service Customer Workshop

January 26, 2022

Agenda

- Concurrent Loss Policy History and Context
- Discuss Customer Feedback
- kW Remainders: Steps 3 & 4
- Loss Return Imbalance: Steps 3 & 4
- Invalid Loss Returns
- Tag Timing Requirements Discussion
- Next Steps/Request for Feedback
  - BPA has flagged areas throughout the presentation where we are seeking customer feedback

Implementation Stages

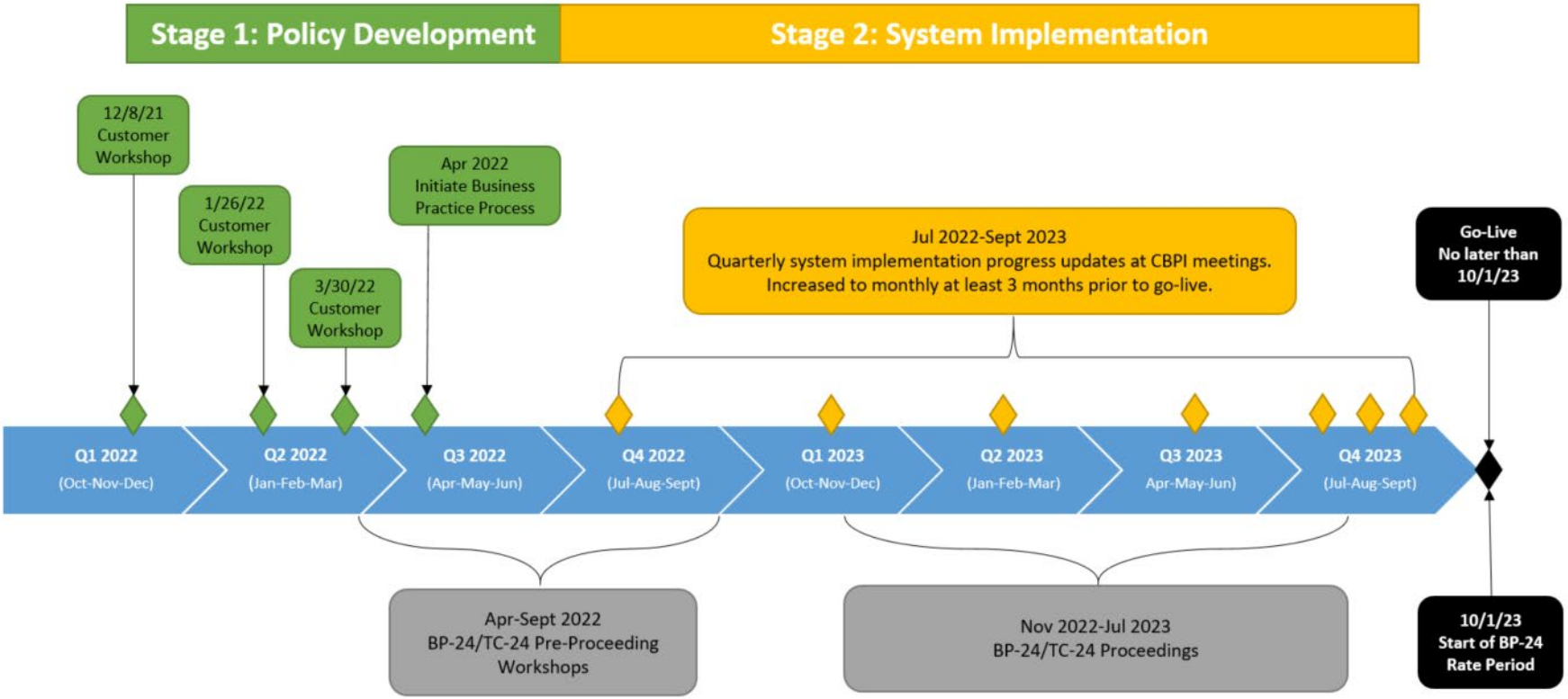


Engaging the Region in Development of Concurrent Loss Return Service

- Policy items will be presented according to the following six-step process at workshops (multiple steps might be addressed in a single workshop):

Approach Development	Evaluation	Proposal Development
Step 1: Introduction & Education Step 2: Description of the Issue	Step 3: Analyze the Issue Step 4: Discuss Alternatives	Step 5: Discuss Customer Feedback Step 6: Staff Proposal
Dec. 8, 2021 Workshop • kW Remainders • Loss Return Imbalance	**Jan. 26, 2022 Workshop** • kW Remainders • Loss Return Imbalance	**Mar 30, 2022 Workshop** • kW Remainders • Loss Return Imbalance • Draft Business Practice(s)

Project Timeline



CONCURRENT LOSS POLICY – HISTORY AND CONTEXT

Real Power Losses Timeline

Oct 2019 – Sept 2020 Pre-Proceeding Workshops

- BPA shared its interest in:
  - Updating the Network loss factor
  - Correcting inaccurate loss returns
  - Updating financial loss pricing
  - Adding a capacity fee to in-kind delayed loss return service
- BPA held five workshops on the topic of losses and staff participated in five customer led workshops as requested.
- Settlement discussions began in Sept 2020. Terms included seasonal Network loss factors and a reduction in the proposed pricing of capacity.
- The Sept. 2020 discussions did not result in a settlement.

Real Power Losses Timeline (con't)

Dec 2020 – July 2021 TC/BP-22 Proceedings

- Dec 7, 2020: Staff's Initial Proposal included updated Network loss factors (Tariff) and pricing for a penalty charge associated with invalid loss returns (Rates).
- Apr 7, 2021: During the 7(i) proceeding, parties requested settlement discussions for the BP-22 rate case and BPA agreed.
- May 6, 2021: BPA and most parties in BP-22 agreed to settlement terms, which was filed with little objection.
- The Administrator accepted the settlement for BP-22 and signed the final ROD on July 27, 2021.

BP-22 Rates Settlement

- In the BP-22 Rates Settlement, BPA agreed to not implement a capacity charge associated with 168 hour in-kind loss returns in the BP-22 rate period and to work toward developing concurrent loss return for BP-24.
- The settlement commitment was a compromise that would allow customers an option to not pay a capacity charge for in-kind loss returns and allow BPA time to implement the Concurrent Loss Return option by BP-24.
  - The settlement included a commitment for BPA to hold public workshops in order to incorporate/consider customer feedback in their policy development.
  - Develop a customer engagement timeline that includes workshops and opportunities for feedback.
  - Use the Business Practice Process to update business practices to establish BPA's concurrent loss return service.
- BPA's long term goal is to keep a choice on real power losses settlement by financial and physical returns.

CUSTOMER FEEDBACK

12/8/21 Workshop – Customer Comments

Topic	Comments Summary	BPA Response
kW Remainders	• Question why kW remainders cannot be tracked on an hourly or daily basis. • What are the barriers to reflecting kW remainders and how will BPA ensure a customer's losses are not under- or over-measured on a cumulative basis?	We recognize there are remaining questions on kW remainders. We plan to address these specific questions/ requests for info in this presentation (steps 3 & 4 of the customer engagement process on this topic).
kW Carryforward	• Several customers requested more info/further clarification on the reasons why carry forward of kW remainders is not feasible. • In cases where there is an over collection in a particular hour, the customer should be afforded the ability to reduce the loss delivery in the subsequent hour. This would also help resolve any concerns related to reliability adjustments or dynamic schedules causing imbalances, and the difficulty in managing those imbalances in a real time environment.	Again, we plan to address these specific questions/ requests for info in this presentation (steps 3 & 4 of the customer engagement process on this topic).

12/8/21 Workshop – Customer Comments

Topic	Comments Summary	BPA Response
BPA Aggregated Separate eTag Proposal	• Several customers expressed support for BPA's aggregated separate tag proposal (Option 2). • Request for more info on the other Balancing Area Authorities BPA has worked with to identify alternative solutions to concurrent loss returns. • Request for more info on how after-the-fact type of tags would be treated or what the options are for return outside of financial. • BPA should prioritize principle #3 • Request for more info on implications associated with the proposals for differently situated utilities, such as Load-Following customers. • Request for info on level of impact on the Asset Controlling Supplier rate that reflects the systems emissions factor of the Bonneville system.	We continue to proceed forward with our proposal to try to have customers' scheduled losses returned during the hour of flow for which the loss obligation was calculated. We recognize there are remaining questions concerning in-hour and after-the-fact transmission scheduling (included in steps 3 & 4 of the customer engagement process on this topic). BPA does not see any impact to load following customers except for non-federal participation.

12/8/21 Workshop – Customer Comments

Topic	Comments Summary	BPA Response
Scheduling & Timing: Posting of Obligations	• Request more info about how/when customers' loss obligation totals will be provided, allowing adequate time for customers to submit their new/adjusted Loss Returns. • Concerns about intra-hour situations that potentially require the customer to procure additional power for Loss Returns. • Several customers expressed concerns as to the timing of the loss return calculation, particularly as it relates to financially binding restraints associated to BPA joining the EIM. • The timing of this posted Loss Obligation calculation could leave customers facing additional EIM related charges.	BPA recognizes there are remaining questions around the calculation and posting of the current loss obligation. We begin to address some of these questions and concerns later in this workshop and intend to share a proposal in later workshops.
Scheduling & Timing: Customer submission of loss eTags	• Concerns regarding a truly "concurrent" service and the difficulty of returning losses without incurring EIM charges, given the tight scheduling timeframes. • Request that BPA also develop a one hour delayed loss return to account for the timelines. • Loss obligations for some transactions, like dynamic e-Tags, cannot be known until after-the-fact and may need to be returned in later hours instead of being 100% concurrent. • Request for more detail on the energy tag submission schedule and the timing of recalculated Loss Return obligations that BPA will be supplying to customers.	BPA is proceeding forward with the requirement that customers' scheduled losses are returned during the hour of flow for which the loss obligation was calculated. The scheduling timelines established will strive to fairly consider customers' needs while adhering to the established WECC and EIM scheduling deadlines. We recognize this may alter scheduling behavior, but that is the inherent nature of returning losses concurrently. These scheduling challenges are presumably why many other entities that have joined the EIM have switched to financial losses only.

12/8/21 Workshop – Customer Comments

Topic	Comments Summary	BPA Response
Slice	• Request for confirmation that BPA will continue to allow Slice customers to return losses through the Slice Application via a reduction to our Right to Power (RTP) calculation. • Concerns about additional Slice customer workload in relation to the creation of new TSRs and e-Tags to facilitate in-kind loss returns. • Current process is fully automated and works well. Any move to concurrent loss returns will require IT effort to modify current automation.	BPA recognizes potential administrative and system impacts related to discontinuing the Slice Customer's ability to utilize their contractual right to power in order to compensate for transmission losses. BPA is engaging our Slice customers regularly throughout this process.
Oversupply	• Please confirm that BPA's Oversupply Management Protocol (OMP) will not change with respect to notification and timing of the current program.	BPA does not see any impacts to the OMP loss waiver process at this time.

Where We Currently Stand

- BPA continues to proceed forward with our proposal to have customers return their aggregated/posted loss obligation during the hour of flow for which the loss obligation was calculated.
- Following customer request, BPA continues to offer two choices to return loss obligation:
  1. Concurrent in-kind loss returns
  2. Financial loss returns

Principles

1. Meet BPA's commitment in the BP-22 settlement.
2. Informed by what has been implemented by other utilities.
3. As simple as possible and minimizes administrative burden for BPA and customers, where possible.
4. Cost efficient implementation for BPA through minimization of custom changes to systems.
5. Losses returned the same hour as the schedule.
6. Minimizes unintended impacts on other policies and is auditable.

MANAGING KW REMAINDERS

Step 3: Analyze the Issue

Step 4: Discuss Alternatives

kW Remainders: Industry Scan

- Duke Energy and BC Hydro apply an hourly carry forward of kW remainders, but require customers to calculate their own Loss Obligations.
- Xcel Energy applies standard rounding to the loss obligation with no carry forward of remainders.
  - Customers are responsible for adjusting their loss schedule to reflect any transmission schedule changes.
  - Under-scheduled quantities are billed financially and over-scheduled quantities are forfeited.
- Southern Company applies a non-standard rounding to the loss obligation with no carry forward (round up for remainders ≥ 0.1MW)

Managing kW Remainders: Carryforward Feasibility

- Under BPA's current proposal, the system development complexities would not allow BPA to meet the BP-24 implementation timeline.
- Carryforward of even a subset of kW remainders requires as much development work as full implementation of kW remainders carryforward.
- Principle 5- Losses returned the same hour as the schedule.

kW Remainders: Assumptions

- Standard rounding rules apply to the total loss obligation that BPA calculates and posts.
  - kW remainders ≥ 0.5MW round up to the nearest whole MW
  - kW remainders < 0.5MW round down to the nearest whole MW
- Total kW remainders are proposed to be tracked and fairly compensated for, but not carried forward to a future hour in-kind loss obligation (see Principle 5)

Managing kW Remainders: Base Data

- Parameters of study:
  - CY 2019-2021 scheduling data
  - OATT customers with in-kind loss return elections as of January 2022
  - Aggregated schedules per contract, per hour
  - Applied current loss factor and standard rounding rules to calculate concurrent loss obligation

Managing kW Remainders: Data Results

- Adopting standard rounding rules for loss obligations:
  - 51% of BPA's customers would have aggregated hourly loss obligations of less than 0.5 MW for each scheduled hour 95% to 100% of the time
  - Approximately half of BPA's customers would not be returning losses on average for hours that contain scheduled transmission
  - FCRPS would have to provide those losses during each hour of transmission flow

Managing kW Remainders: Options

- **Option 1:** Settle all kW remainders financially

A monthly after-the-fact aggregation/compensation of the remaining kWs resulting from each hour's aggregated loss obligation calculation that was not physically returned to BPA due to eTag MW rounding requirements.

  - *Pros:* Low complexity; accurate and fair from monthly perspective.
  - *Cons/Challenges:* FCRPS required to supply losses for under deliveries in real-time; large quantity of customers who may deliver no in-kind loss returns and financially settle majority of the time.

- Requires BP-24 rate proposal

Option 1	Calculated Loss Obligation	Total Concurrent Loss Obligation	Financial Settlement
Example 1	1.4 MW	1 MW	0.4 MW charge
Example 2	1.5 MW	2 MW	0.5 MW credit
Example 3	0.4 MW	0 MW	0.4 MW charge
Example 4	0.5 MW	1 MW	0.5 MW credit

Managing kW Remainders: Options

- **Option 2:** Financially settle only the kW remainders for loss obligations <0.5 MW, rounding for ≥0.5 MW
  - *Pros:* Low complexity; standard rounding should net out remainders over time.
  - *Cons/Challenges:* FCRPS required to supply losses for under deliveries in real-time; large quantity of customers who may financially settle majority of the time. Assuming a rounding risk to net out in the end.
- Requires BP-24 rate proposal.

Option 2	Calculated Loss Obligation	Total Loss Obligation	Financial Settlement
Example 1	1.4 MW	1 MW	None
Example 2	1.5 MW	2 MW	None
Example 3	0.4 MW	0 MW	0.4 MW charge
Example 4	0.5 MW	1 MW	None

Managing kW Remainders: Options

- Option 3: Require a minimum 1 MW loss return and settle all kW remainders financially.
  - *Pros:* Eliminates risk of customers delivering no in-kind loss returns and only financially settling a majority of the time.
  - *Cons/Challenges:* Additional system requirements to apply 1 MW minimum; Over delivery of losses to the FCRPS; customers required to acquire more energy to supply at least 1 MW of loss returns.
- Requires BP-24 rate proposal

Option 3	Calculated Loss Obligation	Total Loss Obligation	Financial Settlement
Example 1	1.4 MW	1 MW	0.4 MW charge
Example 2	1.5 MW	2 MW	0.5 MW credit
Example 3	0.4 MW	1 MW	0.6 MW credit
Example 4	0.5 MW	1 MW	0.5 MW credit

LOSS RETURN IMBALANCE

Step 3: Analyze the Issue

Step 4: Discuss Alternatives

Loss Return Imbalance: Industry Scan

- Avista, BC Hydro, and PacifiCorp settle under/over loss return deviations financially.
- WAPA (WALC) settles under delivery of loss returns financially and over delivery of loss returns are not credited.

Managing Loss Return Imbalance: Issues

- How should BPA manage real-time reliability and after-the-fact adjustments that result in loss return imbalance?
  - Staff proposal
- Should BPA manage Dynamic Transfers and Pseudo-Tie schedules differently?
  - Two options to consider
- How should BPA manage invalid loss returns?
  - Two options to consider

Loss Return Imbalance Proposal

Real-Time Curtailments & Reloads Settled Financially

- Loss return imbalance as a result of a reliability event (i.e. curtailments and reloads) that occurs in real-time, outside of the window for customers to submit an adjusted loss return eTag will be settled financially.
- Requires BP-24 rate proposal.

After-the-Fact Adjustments Settled Financially

- After-the-fact adjustments that change the loss obligation would be settled financially.
- Requires BP-24 rate proposal.

Note: BPA will share the proposal for eTag submission windows and loss obligation calculation timing in Workshop 3.

Real-Time Curtailment Scenarios

- **Scenario 1 (Transmission Schedule):** A customer's loss obligation is 1.5 MW (rounded up to 2 MW). They schedule their 2 MW loss return eTag on time. A real-time curtailment occurs which reduces their loss obligation to 1.4 MW (rounded down to 1 MW). 0.6 MW of loss return over delivery is financially settled as a credit.

- **Scenario 2 (Loss Schedule):** A customer's loss obligation is 1.5 MW (rounded up to 2 MW). They schedule their 2 MW loss return eTag on time. A real-time curtailment occurs that reduces their loss eTag to zero, but their transmission schedule eTag remains unchanged. 1.5 MW of loss return under delivery is financially settled as a charge.

Real-Time Reload Scenarios

- **Scenario 1 (Transmission Schedule):** A customer's loss obligation is 1.5 MW (rounded up to 2 MW). They schedule a 2 MW loss return eTag on time. A curtailment to their transmissions schedule is announced within the submission window which reduces their loss obligation to 1.4 MW (rounded down to 1 MW) and they adjust or resubmit their loss return eTag accordingly. A full reload occurs after the submission window to adjust their loss return eTag. 0.5 MW of loss return under delivery is settled financially.

- **Scenario 2 (Loss Schedule):** A customer's loss obligation is 1.5 MW (rounded up to 2 MW). They schedule a 2 MW loss return eTag on time. A full curtailment to their loss schedule eTag is announced within the submission window and they adjust their loss return eTag accordingly. A full reload occurs after the submission window to adjust the loss return eTag. 1.5 MW of loss return under delivery is settled financially.

Loss Return Imbalance: Dynamic & Pseudo-Tie Schedules

- Dynamic and Pseudo-Tie transactions are required to have their energy profile immediately after the end of each hour of flow in order to more accurately reflect the actual flow of energy that was transferred in the system.
  - Challenging timelines for customers to make schedule adjustments soon enough for BPA to calculate loss return obligation.

Loss Return Imbalance: Dynamic & Pseudo-Tie Schedules Options

- **Option 1:** Exclude Dynamic Transfers and Pseudo-Tie schedules from the total concurrent loss obligation calculation and settle financially.
  - *Pros:* low complexity
  - *Cons/Challenges:* customers would not have the opportunity to physically return any part of their loss obligation for these transactions; FCRPS required to supply losses for *all* loss obligation impacts related to Dynamic & Pseudo-Tie schedules.

Loss Return Imbalance: Dynamic & Pseudo-Tie Schedules Options

- **Option 2:** Include Dynamic Transfers and Pseudo-Tie schedules in the total concurrent loss obligation calculation and settle after-the-fact imbalance financially.
  - *Pros:* Flexibility for customers to return part or all off their loss obligation for these transactions using in-kind loss returns; if customers accurately estimate for these transactions, FCRPS would not be as strained.
  - *Cons/Challenges:* More complex than Option 1

INVALID LOSS RETURNS

Invalid Loss Returns: Assumptions

What is an invalid loss return?

- A customer's loss return eTag does not reflect the loss obligation calculated by BPA and no real-time reliability event or eTag adjustment occurred to cause the loss obligation to change after the loss return eTag submission window.

- Note: BPA will share the proposal for eTag submission windows and loss obligation calculation timing in Workshop 3.

Invalid Loss Returns: Options

- **Option 1:** Penalty charge assessed when customer delivers invalid loss returns by the close of the BPA loss return eTag submission window.
  - *Pros:* BPA is compensated for invalid loss returns.
  - *Cons/Challenges:* potentially complex to develop; auditing invalid loss returns compared to other types of loss imbalance could be challenging.

- Requires BP-24 rate proposal.

Invalid Loss Returns: Options

- **Option 2:** No additional penalty charge assessed when customer delivers invalid loss returns. Deviations would be settled financially at the established loss imbalance rate.
  - *Pros:* No additional development work to implement.
  - *Cons/Challenges:* No incentive to return valid loss returns; FCRPS could be significantly impacted for two years if invalid loss returns is a problem.
- Requires BP-24 rate proposal.

Note: BPA would monitor loss return scheduling behavior. If invalid loss returns are an issue, a penalty charge could be proposed in a future rate proceeding.

LOSS RETURN SCHEDULING AND TIMING

Loss Scheduling and Timing: Customer Concerns

- With BPA joining the EIM and with transmission schedules financially binding at T-57, the timing of BPA's calculation and posting of customer loss obligations could leave customers financially exposed if the loss obligation is not posted in time for customers to submit loss return schedules.
- Loss calculation prior to each flow hour will alter the overall tagging deadline once BPA is in the EIM. This creates an artificial deadline that differs from the industry standard.

Loss Scheduling and Timing: Industry Scan

- Most entities that have joined the EIM have switched to financial losses only.

Loss Obligation Calculation & Posting

- Calculating and posting the obligation.
  - Initial review indicates that BPA could calculate and post customer obligations within 1 to 2 minutes. Some details may not be known until the system development phase.
  - BPA is considering the following options for where the loss obligation would be posted:
    - A new Concurrent Loss screen within OATI CDE (Note: the existing loss screens in CDE will be left in place, but only used by non-OATT customers).
    - A new Concurrent Loss screen within the BPA Customer Portal if it is possible to build functionality that would allow for 3rd party loss providers.
  - BPA intends to share a timing proposals by workshop 3.

Loss Scheduling and the EIM

- In order to set up the Balancing Authority (BA) within the time requirements of the EIM, BPA has established timing requirements for when base schedules are to be submitted (defined in the Tariff).
- After the T-55 Resource Sufficiency (RS) check, BPA finalizes the BA set up and FCRPS dispatch in order to pass the final RS check.
- Submitting eTags after T-57 could create a moving target for BPA which could result in:
  - Failing the RS check, limiting the EIM dispatch in the BA.
  - Creating an error above the 1% requirement in the balancing test resulting in an over/under penalty event.

Loss Scheduling and Timing

- BPA recognizes that customers may need to submit transmission schedules slightly earlier than current submittal windows in order to allow time for any resulting loss obligation to be calculated and posted, leaving enough time so that a new/additional no-charge loss return reservation can be acquired and new or adjusted loss return eTags can be submitted on time.
- BPA feels that the impact on customers and concurrent loss processing associated to posting a BPA calculated loss obligation outweighs the alternative of requiring our customers to calculate their own loss obligations…which could take even more time for the customer and potentially result in a greater number of inaccuracies.

Loss Scheduling and Timing

Benefits	Trade-Offs
• BPA is able to offer physical loss return option • BPA is able to lower administrative burden on customers since BPA would continue to calculate/post customers' loss obligations, including tracking exclusions and OMP events. • Allows for a higher level of accuracy in expected loss returns.	• Customers may have to adjust tagging procedures for when they submit their transmission schedules to have their loss obligation calculated and loss returns submitted within the BPA time line.

Next Steps/Request for Feedback

- Next workshop is March 30, 2022
- Please submit feedback to techforum@bpa.gov by Feb. 9, with a cc to your Transmission Account Executive (AE).
- Specifically, we are looking for feedback including support, concerns, or preference on:
  - Current options for handling kW remainders
  - BPA's financial settlement of loss return imbalance proposal
  - Current options for handling imbalance due to Dynamic and Pseudo-Tie scheduling
  - Current options for handling invalid loss returns
  - Current options for where loss obligations are posted
  - Additional things to consider concerning loss scheduling and timing