

**WESTERN**

**EIIM**



**2022**

**IMPLEMENTATION WORKSHOP**

**May 19, 2021**

# INTRODUCTION AND ROADMAP

Michelle Cathcart, *Vice President of  
Transmission System Operations*

Allie Mace, *Director of Grid Modernization*



# SAFETY MOMENT

## **Spring Checklist:** Mark your progress

- Have leaves or pine needles accumulated on your roof, in gutters, on windows on or under decks, or on the ground right next to your home? Time to get out the ladder, leaf blower, or rake.*
- Have you moved firewood piles left over from winter at least 30 feet from your home. If not, cover them.*
- Replace flammable groundcover near your home with fire-resistant landscaping.*
- Keep grasses and weeds at least 30 feet away from the home mowed to 4 inches or less.*
- Have weeds or grass grown up around electrical fences? Clear all flammable material away from the fence to prevent a ground fire from igniting.*
- Is your line tester functioning on your electric fence? Help avoid a grass fire by inspecting the tester and all fence connections often for shorts in the line.*
- Are flammable household items such as patio furniture pads, door mats, and mops sitting out on your deck or elsewhere near the home? Cover or move these items inside when your home is unattended or if a wildfire is near.*
- Will you be prepared if a fire comes? Make sure you have a family emergency preparedness plan and emergency evacuation kit. Discuss home evacuation plans and routes with all family members. Include pets and livestock in the plan. Practice the plan with all family members.*

Information from Oregon State University Extension Fire Program

# AGENDA

Time	Topic	Presenter
12:05 to 12:30 p.m.	Roadmap and Comment Review	Allie Mace Rachel Dibble
12:30 to 1:40 p.m.	EIM Customer Impact Summary	Roger Bentz Eric King Todd Kochheiser
1:40 to 1:50 p.m.	Break	
1:50 to 2:00 p.m.	EIM Business Practice	Mary Willey
2:00 to 2:15 p.m.	Post go live EIM reporting	Sarah Burczak
2:15 to 2:35 p.m.	Phase V Update	Rachel Dibble
2:35 p.m. to 2:55 p.m.	Business Case Update	Steve Gaube
2:55 to 3:00 p.m.	Break	
3:00 p.m. to 3:15 p.m.	GHG Accounting	Laura Trolese Alisa Kaseweter
3:15 to 4 p.m.	Open Question and Answer Session	

# Five Phases to EIM Decision






- Exploration** July 2018–June 2019
- Implementation agreement** June–Sept. 2019
- Policy decisions** Oct. 2019–Oct. 2020
- BP-22 & TC-22** Dec. 2020–July 2021
- Close-out** Aug.–Sept. 2021

# EIM PARTICIPATION PRINCIPLES

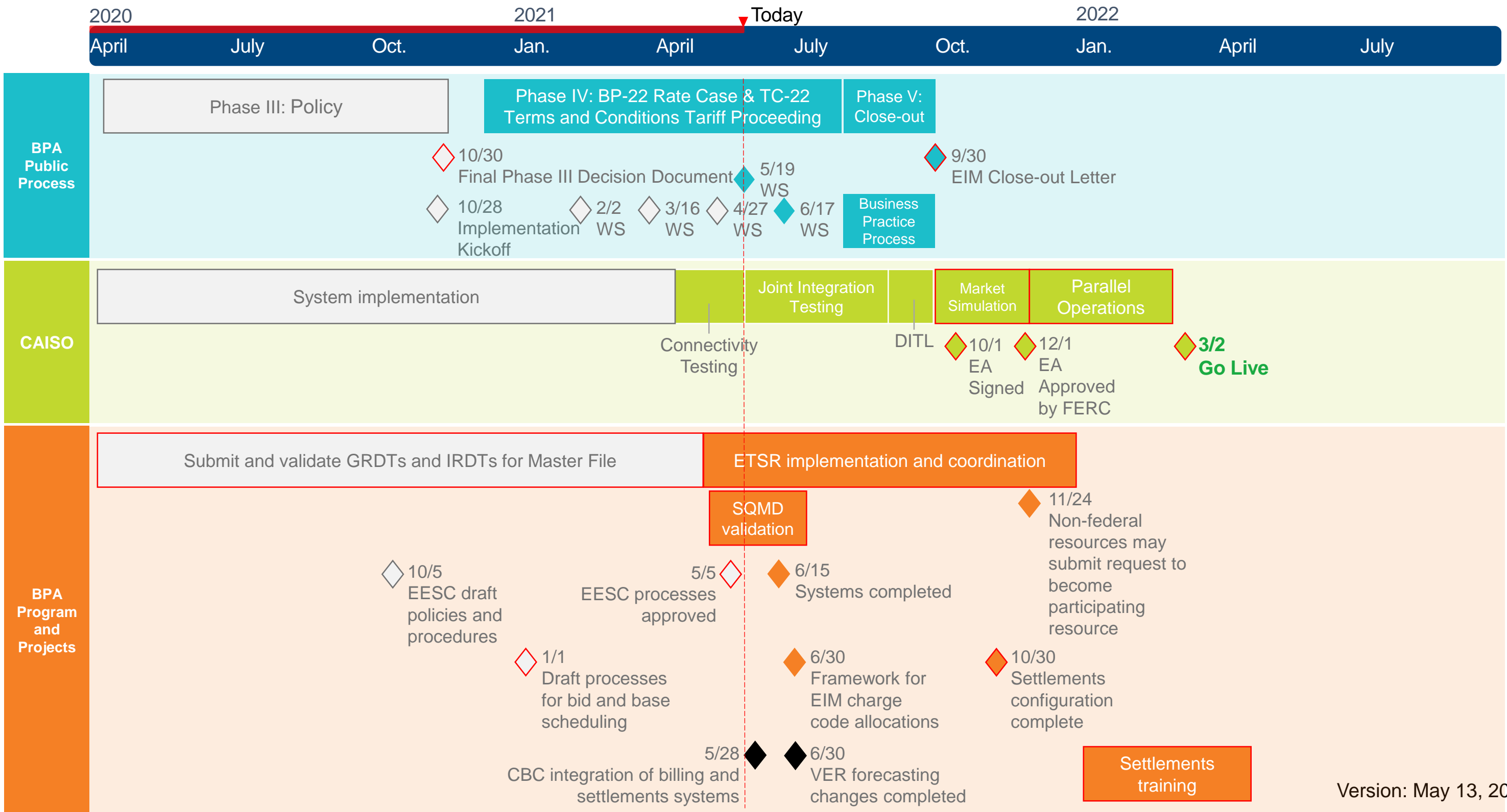
- 1 Bonneville's participation is consistent with its statutory, regulatory and contractual obligations.
- 2 Bonneville will maintain reliable delivery of power and transmission to its customers.
- 3 Bonneville's participation is discretionary and Bonneville retains its ability to effectively exit the market in the event participation is no longer consistent with these principles.
- 4 Bonneville's participation is consistent with a sound business rationale.
- 5 Bonneville's participation is consistent with the objectives of Bonneville's Strategic Plan.
- 6 Bonneville's evaluation of EIM participation includes transparent consideration of the commercial and operational impacts on its products and services.

# MILESTONES KEY

	<b>Critical path activity or milestone</b>	These activities have a marginal room for error and delay and have the highest risk of impacting the go-live date.
	<b>Partial EIM project milestones</b>	These milestones represent a cross-project coordination point that is critical to the EIM program.
	<b>Completed activity or milestone</b>	These activities have been completed.

ACRONYMS IN THE ROADMAP	
CBC	Customer Billing Center Replacement
DITL	Day in The Life (CAISO)
EA	EIM Entity Agreement
EESC	EIM Entity Scheduling Coordinator
ETSR	Energy Transfer System Resource
GRDT	Generator Resource Data Template
IRDT	Intertie Resource Data Template
PR	Participating Resource
SQMD	Settlement Quality Meter Data
VER	Variable Energy Resources
WS	Workshop
Additional resource: <a href="#">CAISO's Glossary</a>	

# BPA EIM INTEGRATED PROGRAM ROADMAP





# COMMENT REVIEW

Rachel Dibble, *Director of Market Initiatives*



# COMMENTS

Topic	Comment Summary	BPA Response
EIM Phase V	<ul style="list-style-type: none"> <li>Request to start Phase V and business practice process before Phase IV concludes.</li> <li>By end of Phase V, BPA should have developed a clear plan for passing on the benefits of Power Services' participation in the EIM to preference customers and also have identified strategies for mitigating preference customers' market risk exposure</li> <li>Request BPA provide adequate time for Phase V discussions</li> </ul>	<ul style="list-style-type: none"> <li>In the EIM Policy ROD, BPA stated, "If Bonneville decides to join the EIM, Bonneville will write a letter stating that proposed decision and setting out how that decision is consistent with Bonneville's principles for joining the EIM that were established in Phase II." Phase V will start when the letter is released.</li> <li>Final decisions from the rates and tariff proceedings are required in order to finalize the proposed business practices for public comment.</li> <li>BPA believes benefit allocation is covered in the BP-22 proceeding and if BPA joins EIM, the future discussions would take place in future rate proceedings.</li> <li>BPA plans to hold one more workshop in June and the agenda has been posted. Please provide feedback any additional topics you would like to discuss along with preferred timing.</li> </ul>

# COMMENTS

Topic	Comment Summary	BPA Response
GHG Accounting	<ul style="list-style-type: none"> <li>Request that BPA provide opportunities to discuss emissions impacts with customer as carbon legislation evolves.</li> </ul>	<ul style="list-style-type: none"> <li>BPA will provide more opportunities to discuss emissions impacts as more information is available on programs.</li> </ul>
Market separation	<ul style="list-style-type: none"> <li>Request to provide more information on when BPA would separate from the EIM and what criteria is in place to make that decision.</li> </ul>	<ul style="list-style-type: none"> <li>BPA will address criteria it will evaluate for exiting the market at the June 17 workshop when it addresses the EIM Real Time Operations project.</li> </ul>
Settlements	<ul style="list-style-type: none"> <li>Request to provide settlements information on a faster timeline than outlined.</li> </ul>	<ul style="list-style-type: none"> <li>BPA will maintain its original settlements timeline. An update will be provided at the June 17 workshop.</li> </ul>

# RESPONSES

Topic	Comment Summary	BPA Response
EIM Governance	What is the timeline to implement the EIM governance changes?	To implement the EIM governance changes, the CAISO will prepare and publicly post proposed revisions to its current EIM governance documents that reflect the approved changes. The revised documents will then be subject to EIM Governing Body advisory review followed by Board approval. The CAISO plans to complete this process this summer.
EIM	Based on the presentation, the value for the intentional deviation penalty determinant is the T-70 forecast and is to be tagged at T-57. Yet it also sounded like the integrated after-the-fact value would be in the indicative number for the IDP calculation. Can you confirm that the net MW value produced at T-20 is the true IDP measurement, or is it in fact, the tag produced at T-57? If it is at T-57, can you also confirm that the tag needs to be fully implemented to qualify?	The customer's after-the-fact tag will be compared to the T-70 forecast for IDP. This is to allow for 15-min scheduling and the WECC tag deadline of T-20 for each 15-min interval. Any changes from the T-57 value submitted to base schedule aggregation portal will result in imbalance assessed by the EIM as instructed or uninstructed imbalance energy. Pending tags will be used at T-57 for the BSAP submittal.
EIM	If an e-tag is created at T-58 and not implemented by T-57, will this qualify for the financially binding deadline of T-57 or has the window been missed?	Pending tags will be used at T-57 for the BSAP submittal.

# RESPONSES

Topic	Comment Summary	BPA Response
EIM	An existing e-tag is adjusted to reflect the T-70 forecast. The e-tag is adjusted at T-58 and is not implemented by T-57. Does the old value still hold for the financially binding window of T-57, or will the adjusted, non-implemented value supersede?	Pending tags will be used at T-57 for the BSAP submittal.
EIM	You create a new e-tag or adjust an existing e-tag to reflect the T-70 forecast. Either action occurs at T-58. There is a tagging error and the new e-tag or adjustment is withdrawn at T-55. A replacement e-tag or adjustment is then initiated. Does the value of the non-implemented, but erroneous primary e-tag or adjustment qualify for the financially binding deadline or have you missed the window for the accurate T-70 forecast value?	Pending tags will be used at T-57 for the BSAP submittal.
EIM	There is an interim period from Nov. 24, 2021, through Feb. 28, 2022, where VERs are mandated to have a final e-tag at T-57 for parallel operations. What will the financial implications be if you missed the window as this pre-dates live EIM operations. Is this a logistical requirement but not a financially binding requirement?	BPA recognizes that this is an issue and will work to develop a solution.

# RESPONSES

Topic	Comment Summary	BPA Response
VERS	<p>An organization today has off-take contracts with wind generators and these contracts are negotiated in accordance with the “committed scheduling” paradigm. Presently, the finer the scheduling timeframe, the greater the cost savings that goes to the wind generator. The new EIM scheduling timeframe presumably eliminates any defined cost savings to wind generators and in its place there is the combination of the VERBS rates and the elimination of the generator imbalance. Is this the correct way to view the new world or are there scheduling practices or rates that may have been missed?</p>	<p>If BPA’s proposal in the BP-20 Rate Case is adopted, all customers should schedule to BPA’s variable energy resource forecast. IDP charges may apply if customers schedule to a different value. Customers will still be subject to generation imbalance, there will just be different rates that will apply if BPA joins the EIM.</p>

# RESPONSES

Topic	Comment Summary	BPA Response
EI/GI Settlements	What happens for behind the meter resources in the EIM? What happens if BPA steps out of the EIM for these settlement periods?	<p>All resources modeled in the EIM are subject to settlement of GI in the EIM, including behind the meter resources. BPA will allocate GI for behind-the-meter (BTM) generation to the same entity that is responsible for that imbalance today. As a result, BTM resources that do not receive GI settlements today will not receive GI settlements in the EIM either.</p> <p>For Load Following customers, the imbalance associated with any BTM resources that are serving load will be allocated to Power Services. For all other customers (Slice/Block, Block, and DSI), BPA will allocate the generation imbalance associated with a customer’s BTM resource to the load. For periods when BPA steps out of the market, the imbalance of BTM resources will continue to net with load.</p>
EI/GI Settlements	If BPA steps out of the EIM, what price would energy imbalance/generation imbalance be settled at since locational marginal price would not apply?	EI/GI for periods when BPA steps out of the market will be charged at the index rate as set forth in the pre-EIM rate calculation provisions.

# RESPONSES

Topic	Comment Summary	BPA Response
VERS	Can BPA clarify how it will bill imbalance for parallel operations? Assuming EIM prices would not apply yet but changes required to meet EIM timelines.	Imbalance during the Parallel Operations period will be charged in the same manner and on the same basis as the pre-EIM rate calculation provisions.
Non-federal resources	Is there another way for resources (instead of using the summation of tags), specifically wind generators, to enter schedules in BSAP on a DA basis vs. submitting a Draft @ 10am or T-77? In current practice, we submit tags Day-Ahead with a 0MW profile for energy and transmission. Then use BPA's API to update the tag once the committed schedule is received. Requiring a draft tag might be problematic for entities that schedule wind on BPA's system as they may not have a sink or enough sinks to schedule to the day-ahead forecast.	No, e-tags are the communication method for all resources to communicate the DA expected output of the resource to BPA. The schedules for the DA time periods are expected to represent what you know at that time and are expected to be revised and change throughout the scheduling time periods. Schedule changes made prior to the T-57 deadline will be used to establish the base schedule for market imbalance settlement purposes.



# RESPONSES

Topic	Comment Summary	BPA Response
Non-federal resources	If a wind farm elects NOT to be a participating resource (PR), does their need to submit a day-ahead draft tag by 10 a.m. or T-85 go away since bids would not be required and only a base schedule?	No, we need e-tags (or CDE generation estimates for behind-the-meter resources) for the planned generation to establish the resource's base schedule to the market regardless of whether the resource is a Participating Resource (PR) or a Non-participating Resource (NPR). For a PR, that base schedule should represent the planned generation level excluding the INC or DEC capacity bid separately in to the market.
VERs	Does parallel operations start at midnight Dec. 1, 2021? However, we really need to start following the VER scheduling time lines on Nov. 24, 2021?	Parallel Operations is scheduled to begin at midnight on 12/1/21. The EIM has a requirement to begin scheduling practices 7 days prior to Go Live to the EIM standards, and recommends strongly to begin 7 days prior to Parallel Operations to get the most accuracy and benefits out of Parallel Operations.
EI/GI	When parallel operations starts, how will EI and GI be settled? Still on the current bandwidth methodology or EIM pNode pricing? Requesting clarification since BPA would not go live in the EIM until March 2, 2022.	Imbalance during the Parallel Operations period will be settled using the pre-EIM rate calculation provisions .

# RESPONSES

Topic	Comment Summary	BPA Response
Exit notification	In the event BPA has to move in or out of EIM for any reason due to an event, etc. and then reconnect, how will that be communicated to market participants? An OASIS notice/email, similar to how BPA notifies market participants of loss waivers?	If BPA steps entirely out of the market, we will provide notice to customers via an OASIS posting. Similarly we will provide notice via OASIS when we rejoin the market.
Settlements	In regards to settlement timelines and looking at meter data needs for a customer's meter validation, I am looking at clarification on settlement timelines. Will GI be billed at a LMP on a five-minute basis and EI will be billed at a LAP on an hourly basis?	Generation IIE and UIE will be settled at the LMP on a five-minute basis and Load UIE will be billed at the ELAP on an hourly basis.
Non-federal resources	Request more discussion on what happens prior to go-live or if EIM separates from the market for non-participating, non-federal resources.	For NPR resource, during times where BPA separates from the markets, they would continue to schedule energy to load on the same timelines as in the EIM and imbalance would be calculated using index costs under the pre-EIM rate calculation provisions.

# RESPONSES

Topic	Comment Summary	BPA Response
Non-federal resources	<p>Snohomish would prefer that BPA retain the current business practice of netting for imbalance settlement of behind-the-meter non-participating resources even if BPA joins the EIM. Eliminating netting will add customer administrative burden in the form of additional meter values to check, additional settlement data to validate, and additional points of exposure to monitor for potential persistent deviation that may not truly be individually meaningful.</p>	<p>Netting under today’s business practice is not possible in the EIM because all loads and resources are subject to settlement, including behind the meter resources. Further, different billing factors for EI and GI (Load Aggregation Price (LAP) for calculating EI and Locational Marginal Price (LMP) for calculating GI) are used.</p> <p>BPA will allocate the GI charges for behind the meter resources to the entity responsible for the imbalance today. As a result, BTM resources that do not receive GI settlements today will not receive GI settlements in the EIM either.</p>
Non-federal resources	<p>Snohomish also requests clarification as to BPA’s proposal on the treatment of behind-the-meter resources during periods that BPA is out of the EIM.</p>	<p>During times when BPA separates from the EIM, all Non-Participating behind the meter resources would continue to net with load.</p>

# RESPONSES

Topic	Comment Summary	BPA Response
Non-federal resources	<p>Snohomish suggests BPA revise the business practice along the lines of the following:</p> <ul style="list-style-type: none"> <li>• In the period between the start of the rate period in October 2021 and when BPA joins the EIM, the current netting policy should remain in place</li> <li>• After BPA has joined the EIM, during any periods when BPA is temporarily out of the market for a period less than one month, BPA should not revert back to netting because the administrative burden of changing back and forth may be greater than the burden avoided through netting for a short period.</li> <li>• However, if BPA exits the market permanently or expects to be out for longer than one month, BPA should revert back to the netting policy.</li> </ul>	BPA plans to continue netting GI from BTM resources with load prior to joining the EIM, and during periods when BPA separates from the EIM.
Non-federal resources	Snohomish requests that customers be able to participate in parallel operations by submitting draft schedules but retaining ability to update schedules up until current T-20 deadline. (More details and justification provided in comments).	Customers will retain the ability to schedule up to T-20 during parallel operations.

# RESPONSES

Topic	Comment Summary	BPA Response
VERs	<p>Can BPA clarify whether a particular vintage forecast would no longer be available after the next update? If so, Snohomish would recommend retaining at least the T-70 vintage forecast for an extended period of time.</p>	<p>Current design is to pass through the forecasts as they come into BPA from BPA's VER forecast vendor, which would make the forecast vintage unavailable to customers after the posting period has lapsed. Large changes in the forecast between T-70 and T-65/T-60 are not anticipated, but the current plan is to not have the T-70 forecast available after the T-65 update. This is similar to the persistence scheduling posting window used by BPA for 30-minute persistence scheduling in the past, though the current practice is to post for 15-minutes. The process used by VER customers of retrieving the forecast should be an automated process, where availability of the data for 5 minutes versus 15 minutes should not cause problems.</p>

# RESPONSES

Topic	Comment Summary	BPA Response
VERs	<p>Snohomish requests BPA provide clarity on these two points (ID/PD and if applies to just VERs or all resources), perhaps as part of a broader discussion on BPA’s operational and settlement-related plans during the Parallel Operations period.</p>	<p>Per the draft rate schedules posted in the BP-22 rate proceeding, ID will apply to all “Intentional Deviation Penalty Charge applies to Variable Energy Resources taking service at the ACS-22 Variable Energy Resources Balancing Service (VERBS) rate” and PD applies to both “Dispatchable Energy Resources taking DERBS pursuant to ACS III.F” and “customers taking Energy Imbalance Service pursuant to ACS II.D and IV.A.1”. Both ID and PD apply for the entirety of the rate period (in or out of the EIM, including Parallel Operations).</p> <p>In the revised chart on Slide 23, we have included the changes in red, including the identification of when the Intentional Deviation Measurement Value will shift to the T-70 forecast on the chart.</p>

# REVISED VER CHART

VER <b>Financial Binding</b> Scheduling Time Lines				
<b>First Scheduling Day</b>	VER Forecast Produced @			
	DA - 9:35AM	T-85	T-70	T-45
Start of BP-22 10/1/2021	N/A	Draft @ T-77	Draft @ T-57	Final @ T-20*
7 Days prior to Parallel Ops 11/24/2021	Draft @ 10 AM	Draft @ T-77	<b>Draft @ T-57*</b> <b>Final @ T-20</b>	N/A
7 Days prior to Go Live 2/23/2022	Draft @ 10 AM	Draft @ T-77	Final @ T-57*	N/A
	Requested	Required		
<b>*Intentional Deviation Measurement Value shifts to T-70 Forecast on 11/24/21</b>				

*Note: Provides an update to slide 36 from the [April workshop](#). Changes are noted in red.*

# EIM CUSTOMER IMPACT SUMMARY

Roger Bentz, *EIM Program Manager*

Eric King, *Electrical Engineer*

Todd Kochheiser, *Electrical Engineer*





# EIM CUSTOMER IMPACT SUMMARY POSTED

- The *EIM Customer Impact Summary* documents what is and is not changing for customers. It also provides whether a final decision has been made and where that decision has been or will be made.
- This document will continue to be updated as information is available and decisions are finalized.
- At workshops, specific items from the summary will be discussed with an opportunity for questions.

# ENERGY IMBALANCE FOR LOAD

**Objective:** The EIM settles imbalance for each specific load point and BPA needs to establish mechanisms to sub-allocate load imbalance for times when the BPA BAA is participating in the EIM.

**Analysis:** During the Phase III workshops, BPA staff developed proposals for sub-allocating EIM charges for loads that are consistent with other regional EIM entities.

**Customer Impact:**

Under current proposal, a transmission customer would be charged or paid for energy imbalance service - measured as the deviation of the transmission customer's metered load compared to the load component of the transmission customer's base schedule.

This imbalance would be settled as uninstructed imbalance energy for the period of the deviation at the applicable load aggregation point price, where the load is located as calculated by the market operator.

Prior to joining the EIM (and during times when the BPA BAA is not participating in the EIM), traditional EI settlement for loads would apply.

## Source

9/29/20 Phase III workshop, draft tariff

## Status of decision

Pending BP-22, TC-22

# EI FOR GENERATION – DEVIATION FROM SCHEDULE

**Objective:** Bonneville needs to develop mechanisms to settle for each generator’s deviations from its schedule that cover both periods when the balancing authority area is participating in the EIM and for periods when the BAA is not participating in the EIM.

**Analysis:** For times when the BPA BAA is participating in the EIM, imbalance energy is provided by the market at 5- and 15-minute dispatches, so the EIM settlements of generation imbalance should be sub-allocated to transmission customers. And for times when the BPA BAA is not participating in the market, BPA is providing for the imbalance, so traditional GI settlement with BPA (Schedule 9) should occur.

## Customer Impact:

Imbalance energy due to generation deviations would be sub-allocated to transmission customers for times when the BPA BAA is participating in the EIM.

Traditional GI settlements would apply for times when the BPA BAA is not participating in the EIM.

## Source

9/29/20 Phase III workshop, draft tariff

## Status of decision

Pending BP-22, TC-22

# EI FOR GENERATION – NO SCHEDULE CHANGES

**Objective:** The EIM settlement of imbalance for schedule changes after the T-57 base schedule deadline is treated differently than for metered deviations from the T-57 base schedules.

**Analysis:** During the Phase III workshops, BPA staff developed proposals for sub-allocating EIM charges for changes in generation. For times when no schedule changes are made after the base scheduling deadline, the imbalance would be settled as UIE. UIE affects resource sufficiency, over/under scheduling penalties and the potential for Operational Controls for Balancing Reserves.

**Customer Impact:**

Imbalance for generators when no schedule changes occur for the resource after T-57 measured as the deviation of the transmission customer's metered generation compared to the resource component of the transmission customer's base schedule.

Deviations would be settled as UIE at the nodal real-time dispatch price as calculated by the market operator.

**Source**

9/29/20 Phase III workshop, draft tariff

**Status of decision**

Pending BP-22, TC-22

# EI FOR GENERATION – SCHEDULE CHANGES

**Objective:** The EIM settlement of imbalance for schedule changes after the T-57 base schedule deadline is treated differently than for metered deviations from the T-57 base schedules.

**Analysis:** During the Phase III workshops, BPA staff developed proposals for sub-allocating EIM charges for changes in generation. Imbalance for generators when schedule changes occur for the resource after T-57 via manual dispatch, available balancing capacity dispatch or schedule revisions would be settled as instructed imbalance energy.

**Customer Impact:**

Differences between the resource component of the transmission customer’s base schedule and the manual dispatch/available balancing capacity/ revised schedule would be settled as IIE.

Differences between the metered generation and manual dispatch/available balancing capacity/ revised schedule would be settled as UIE.

**Source**

9/29/20 Phase III workshop, draft tariff

**Status of decision**

Pending BP-22, TC-22

# OVER/UNDER SCHEDULING CHARGE CODE – ALLOCATION

**Objective:** The over/under scheduling penalty is designed to discourage EIM entities from leaning on the market.

**Analysis:** The CAISO applies the over/under scheduling penalty consistently for all EIM entities - when the following two conditions are not met:

- The BAA scheduled within 1% of the CAISO’s area load forecast.
- The BAA scheduled within 5% of its actual area load.

During Phase III workshops, BPA proposed to sub-allocate the penalty in a manner consistent with other regional EIM entities.

## Customer Impact:

Consistent with the methods used by other EIM entities, BPA proposed that over scheduling and under scheduling charges for schedules that deviate from metered amounts be allocated proportionately to schedules that deviate in the direction that the BAA as a whole deviates from the CAISO BAA load forecast.

## Source

7/28/20 Phase III workshop

## Status of decision

Pending BP-22

# OVER/UNDER SCHEDULING CHARGE CODE – DISTRIBUTION OF CREDITS

**Objective:** The over/under scheduling penalty is designed to discourage EIM entities from leaning on the market to serve load.

**Analysis:** This penalty gets allocated to infracting entities. Credits for the over/under scheduling penalty are paid by the market operator to the EIM entity. BPA proposed to distribute the credits to customers whose base scheduling is within the expected ranges on the basis of metered demand.

## Customer Impact:

Payments to the BPA EIM Entity for over/under scheduling credits are proposed to be distributed to transmission customers on the basis of metered demand - whose daily average absolute imbalance is less than 5% or 2 MW (whichever is greater) of its daily average schedule.

## Source

7/28/20 Phase III workshop

## Status of decision

Pending BP-22

# INTERCHANGE IMBALANCE

**Objective:** Imbalance in EIM is not only attributed to load and generation. Interchange transactions can cause imbalance supplied by the EIM and should be clarified in BPA’s EIM market definition and settlements model.

**Analysis:** Interchange imbalance calculates deviations between the interchange portion of a transmission customer’s base schedule at T-57 and the schedule at the time of the market run and is assessed as IIE at the fifteen minute market locational marginal price or real-time dispatch LMP (or both).

## Customer Impact:

Transmission customers with interchange imbalance are proposed to be assessed IIE at the FMM and/or RTD LMP.

## Source

9/29/20 Phase III workshop, draft tariff

## Status of decision

Pending BP-22, TC-22



# INTRACHANGE IMBALANCE

**Objective:** Imbalance in EIM is not only attributed to load and generation. Intrachange transactions can cause imbalance supplied by the EIM market and should be clarified in BPA’s EIM market definition and settlements model.

**Analysis:** Intrachange imbalance calculates deviations between the intrachange portion of a transmission customer’s base schedule at T-57 and the schedule at the time of the applicable market run and is assessed as IIE at the FMM LMP or RTD LMP (or both). Unless requested to be assigned by Power Services or a transmission customer, consistent with BPA’s EIM business practice, intrachange imbalance would be assigned to resources as IIE and to load as UIE – and offsetting charges/credits will be applied to the source resources.

## Customer Impact:

Transmission customers with intrachange imbalance are proposed to be assessed IIE at the FMM and/or RTD LMP.

The source resource responsible for an intrachange are proposed to be charged/credited an amount that exactly offsets the assigned amount.

## Source

9/29/20 Phase III workshop, draft Tariff

## Status of decision

Pending BP-22, TC-22

# ETSRS – APPROACH FOR GOVERNING EIM FLOWS

**Objective:** In the EIM, energy transfer system resources are the mechanism for managing the capacity of interchange that is made available to support within hour EIM imbalance energy transfers between adjacent EIM BAAs.

**Analysis:** For all EIM transfer paths, each BAA needs to identify the interchange transfer capacity that will be made available to support imbalance energy transfers between BAAs for the RTD market awards. This is done via definition of common transfer interchanges (dynamic ETSRs) and the BAA populating them with available MWs for the coming hour. For interchange paths with limited dynamic interchange availability, a comparable interchange (static ETSR) is defined and populated with the MWs reflecting the non-dynamic limit for the coming hour and used as a limit for FMM market awards.

## Customer Impact:

BPA will establish dynamic ETSRs for all EIM transfer paths for use in the RTD and static ETSRs for FMM on the Northwest AC Intertie, Pacific Direct Current Intertie and potentially the Montana interchange paths.

## Source

ETSR Workshops

## Status of decision

Final

# ETSRS – EXISTING ETSRS

**Objective:** BPA has enabled EIM transfers between existing EIM parties and clarity is needed to understand how those would be affected by BPA joining the EIM market.

**Analysis:** For existing EIM entities, BPA has required the scheduling party to have available transfer capability available on BPA’s transmission paths. For new EIM transfers across BPA EIM transfer paths, BPA is requiring the donation of reserved transmission capacity. Analysis of how these two models can fit together with minimal impact on the existing EIM parties concluded that these existing EIM transfers would not be required to donate transmission capacity and could continue to use their existing methods.

**Customer Impact:**  
Existing EIM transfers will continue to be supported without any changes.

## Source

ETSRS Workshops

## Status of decision

Final

# TOPICS COVERED IN WORKSHOPS TO DATE

- ✓ Metering Requirements
- ✓ Settlements Processes
- ✓ Settlement Sub-allocation
- ✓ Losses for EIM transfers
- ✓ VER Scheduling
- ✓ Scheduling Timing
- ✓ Intentional Deviation
- ✓ Persistent Deviation
- ✓ Participating Resources
- ✓ Generators in EIM
- ✓ Resource Sufficiency
- ✓ Transfer Service Costs
- ✓ EI for Load
- ✓ EI for Generation
- ✓ Over/Under Scheduling Charges
- ✓ Interchange/Intrachange Imbalance
- ✓ Energy Transfer Resource Schedules
  - Transmission Donation

# EIM BUSINESS PRACTICE


Mary Willey, *Policy Specialist*



# EIM BUSINESS PRACTICE

- BPA will have one primary EIM business practice.
- Additional updates anticipated to 20 existing business practices to ensure they point to the primary EIM business practice as needed.

# EIM BUSINESS PRACTICE TIMELINE



**Spring 2021:**  
Start drafting  
business practice

**Late August:**  
Post business  
practice for review  
and comment

**Early November:**  
Finalize EIM  
business practice  
and publish

**Nov. 24, 2021:**  
EIM business  
practice effective  
(seven days prior  
to the start of  
parallel  
operations)

# POST GO LIVE EIM REPORTING

Sarah Burczak, *Stakeholder Engagement Lead*





# BACKGROUND

- Requests in comments for BPA to commit to post go live reporting if BPA joins the EIM.
  - *In addition to the future topics already identified, PPC reiterates its request made during the TC/BP/EIM workshops that BPA develop a plan for regular reporting on its EIM participation to customers once it goes-live. In our previous comments, we have suggested that these reviews should be conducted quarterly to help BPA and customers understand the impacts of the agency's EIM participation, to ensure there are not unintended consequences, and to identify any areas where potential policy changes may be needed.*
  - *BPA's plans for post go-live reporting. We expect that customers will have an opportunity to help shape what will be included in this reporting, so more than one workshop session may be required on this topic.*

# PROPOSED QUARTERLY REPORTING

- Add EIM reporting as a topic at the Quarterly Business Review Technical Workshop similar to the current grid modernization update. Report would include:
  - CAISO quarterly benefit metric.
  - Qualitative market updates on BPA's participation.

# QUARTERLY METRICS

- CAISO Quarterly Benefit Report
  - Provides quarterly benefit for all EIM participants.
  - Report provides additional participation metrics which could be included over time.
- As participation matures, BPA would be open to exploring additional metrics to track participation.

# QUALITATIVE MARKET UPDATES

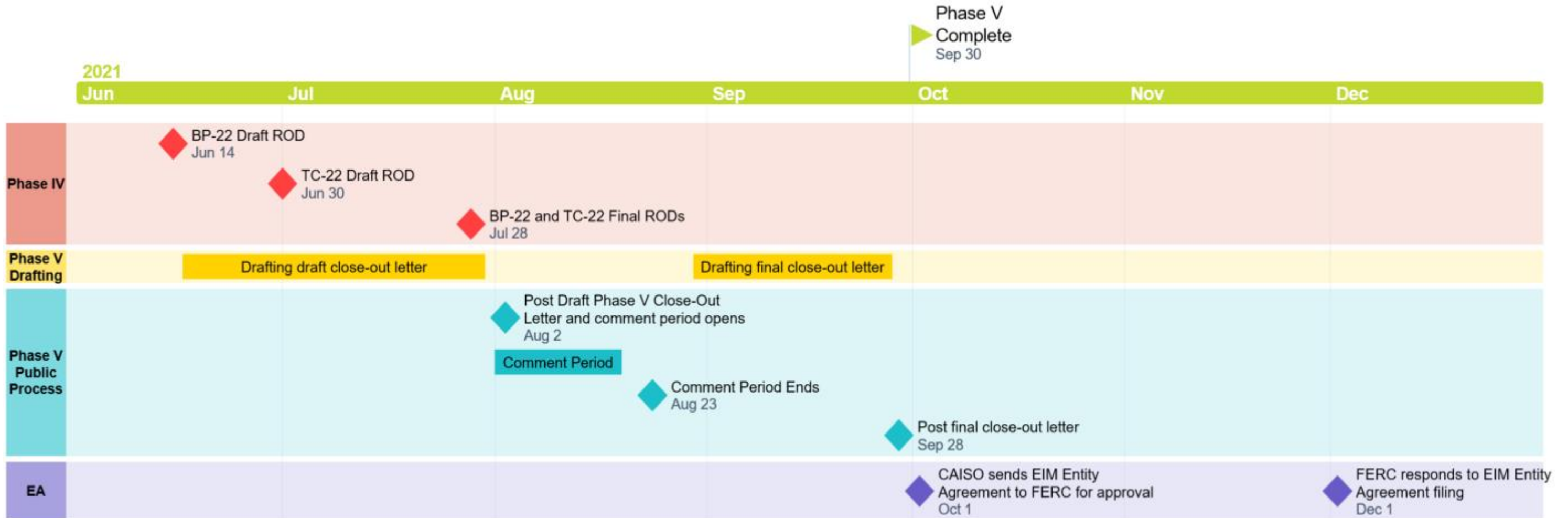
- Provide quarterly updates on BPA's market participation and experience. Updates could include:
  - Updates on EIM projects after go-live.
  - How groups are adapting to EIM participation and highlight successes/challenges of processes and tools.
  - How a new market change or proposed initiative may impact EIM participation.

# PHASE V UPDATE

Rachel Dibble, *Director of Market Initiatives*



# PHASE V TIMELINE



# PHASE V EIM CLOSE-OUT LETTER

- Introduction.
- Purpose and scope of close-out letter.
- EIM overview/background.
- Bonneville's EIM decision process.
  - Description of each phase.
  - Statement of decisions made in each phase.

# ASSESSMENT OF CHANGES SINCE 2019 ROD

- Notable changes:
  - CAISO summer 2020 load shedding event and 2021 Summer Readiness Stakeholder Process.
  - Governance developments.
  - Greenhouse gas issues.
  - Update on hydro default energy bid.
  - Pandemic.
  - BP-22 Rate Case decisions.
  - TC-22 Terms and Conditions Tariff Proceeding decisions.
- Positive market changes:
  - Tariff amendment to avoid unaccounted for energy charge.
  - Low-side metering model.
  - New operational automated program interfaces.



# EIM PARTICIPATION AGREEMENTS

- EIM Entity Agreements:
  - EIM Entity Agreement.
  - EIM Entity Scheduling Coordinator Agreement.
  - EIM Entity Meter Services Agreement.
- Participating Resource Agreements:
  - Participating Resource Agreement.
  - Participating Resource Scheduling Coordinator Agreement.
  - Participating Resource Meter Services Agreement.

# DECISION

- Assessment of EIM participation principles.
- NEPA analysis.
- Conclusion/final decision whether to join the EIM.

# BUSINESS CASE UPDATE

Steve Gaube, *Bulk Marketing Analyst*



# BUSINESS CASE – AVAILABLE SPIN CAPABILITY

## Mean Spin Capability

	INC	DEC
<b>2016</b>	1072	-845
<b>2017</b>	928	-703
<b>2018</b>	1065	-830
<b>2019</b>	1129	-862
<b>2020</b>	1184	-867

- Available Spin Capability:
  - INC
    - 2016-2018 average ~ 1022 MW.
    - 2016-2020 average ~ 1076 MW.
  - DEC
    - 2016-2018 average ~ 793 MW.
    - 2016-2020 average ~ 822 MW.

# BUSINESS CASE – MARKET PRICES

## RTPD Annual Standard Deviation

	PACW	PGE	Puget
<b>2016</b>	18.9	N/A	N/A
<b>2017</b>	37.9	N/A	27.5
<b>2018</b>	19.1	24.8	28.2
<b>2019</b>	24.0	22.5	25.1
<b>2020</b>	17.5	20.2	22.4

- Annual real-time pre-dispatch standard deviation:
  - 2016-2018 average ~ \$26.
  - 2016-2020 average ~ \$24.

## RTD Annual Standard Deviation

	PACW	PGE	Puget
<b>2016</b>	31.3	N/A	N/A
<b>2017</b>	43.2	N/A	42.9
<b>2018</b>	33.3	33.4	38.5
<b>2019</b>	40.4	42.2	41.6
<b>2020</b>	23.5	30.5	28.8

- Annual real-time dispatch standard deviation:
  - 2016-2018 average ~ \$37.10.
  - 2016-2020 average ~ \$35.80.

# BUSINESS CASE – ONGOING COSTS

## Ongoing EIM Costs

<b>2019</b>	\$6,875,000
<b>2021</b>	\$7,072,000

- The latest estimate for ongoing costs is a 2.9% increase from the 2019 cost-benefit analysis.
- This is largely driven by higher than estimated IT O&M costs.

# BUSINESS CASE – CURRENT STAFF CONCLUSION

- Staff has not observed material changes to any key inputs.
- BPA does not anticipate it will update the business case.

# GHG ACCOUNTING UPDATE

Laura Trolese, *Senior Policy Analyst*

Alisa Kaseweter, *Climate Change Specialist*





# RECAP: BPA Considerations

- 1. Is there a reasonable business case to support BPA marketing power through the EIM into California?**
- 2. What are the potential impacts to BPA and its customers under other state carbon and greenhouse gas programs?**

# RECAP: CA Carbon Compliance Cost with EIM Sales to CA

	Emissions Factor
1. Original emissions factor	0.0122 MT CO <sub>2e</sub> /MWh
2. New emissions factor (BPA joins EIM: no direct sales to CA in EIM)	0.0261 MT CO <sub>2e</sub> /MWh
3. New emissions factor (BPA joins EIM: direct sales to CA in EIM)	0.0284 MT CO <sub>2e</sub> /MWh
4. Change in emissions factor (2-1)	0.0139 MT CO <sub>2e</sub> /MWh
5. Change in emissions factor (3-2)	0.0023 MT CO <sub>2e</sub> /MWh
6. Change in emissions factor (3-1)	0.0162 MT CO <sub>2e</sub> /MWh

- *BPA extra-regional sales to CA (outside the EIM) are ~ 4,000,000 MWh per year.*  
 $\sim 4,000,000 \text{ MWh} * 0.0162 \text{ MT CO}_{2e}/\text{MWh} * \$17/\text{MT CO}_{2e} = \underline{\sim \$1.1 \text{ million per year}}$
- *BPA sales increased by ~500,000 MWh per year when BPA sold to CA in the EIM.*  
 $\sim 500,000 \text{ MWh} * 0.0284 \text{ MT CO}_{2e}/\text{MWh} * \$17/\text{MT CO}_{2e} = \underline{\sim \$0.25 \text{ million per year}}$

# RECAP: Costs vs. Benefits of Direct Sales to California

	Emissions Factor (MT CO <sub>2e</sub> /MWh)	Carbon compliance cost for all sales to CA (~\$ million/yr)	Gross Benefits (~\$ million/yr)
Pre-EIM	0.0122 CO <sub>2e</sub> /MWh	\$0.8	
BPA joins EIM: no direct sales to CA	0.0261 CO <sub>2e</sub> /MWh	\$1.8	\$29
BPA joins EIM: with direct sales to CA	0.0284 CO <sub>2e</sub> /MWh	<b><u>\$2.2</u></b>	<b><u>\$33.6</u></b>

- The benefits of selling into California through the EIM outweigh the costs
- The carbon compliance costs for sales to CA into the EIM (~\$0.25 million/year) are mitigated through the EIM GHG bid adder

# State Policy Implications for Customers

- State policy determines how purchases in the EIM will be treated for state programs that some BPA customers may have to comply with. This is an evolving area, thus difficult to quantify.
- BPA recognizes that CAISO's EIM algorithm (which could artificially "deem" federal resources to have been delivered to California) may have implications for customers' compliance with other state GHG emission-reduction and clean energy policies, e.g. CETA.

# Potential Implications of WA Cap-and-Trade

- Under the recently passed cap-and-trade legislation, WA customers (or BPA if it opts to be the first jurisdictional deliverer) may have a compliance obligation for EIM purchases.
  - Treatment of EIM imports into WA is left to rulemaking
  - Any solution that requires CAISO implementation (e.g. “deeming” delivery to WA) would likely need to go through a CAISO stakeholder process
- WA Customers will receive an allocation of free allowances that theoretically would cover forecasted EIM purchases, largely offsetting these costs.

# Washington Clean Energy Transformation Act

- BPA's WA customers *may* need to mitigate for EIM purchases.
  - Unresolved issue revolving around state rulemaking decisions on whether CETA is a delivery or procurement standard and how utilities will demonstrate compliance based on BPA's single system mix.
- Customers will not need to mitigate for unspecified power/natural gas under CETA until 2030, providing time for further development of this issue.

# BPA Conclusions

- Business case indicates benefits of marketing power to California through EIM outweigh the costs.
  - BPA anticipates it will participate in the EIM in a manner that may include sales into CA
- BPA will monitor the following:
  - Impact to BPA's ACS emissions factor and accuracy of the ACS system mix report
  - Associated costs related to future BPA sales to California
- BPA will stay engaged in WA CETA and Cap-and-Trade rulemakings and development of other state's carbon reduction and clean energy programs.
  - Intend to closely collaborate with customers throughout rulemakings
  - As more information is available, will monitor impacts and revisit issue if necessary

# QUESTIONS?





# COMMENTS

Please send your feedback to [techforum@bpa.gov](mailto:techforum@bpa.gov) by Wednesday June 2.

Thank you for participating in today's workshop. For more information, visit [www.bpa.gov/goto/eim](http://www.bpa.gov/goto/eim).

