

# ISSUE #1: EIM CHARGE CODE ALLOCATION

Step 3: Data and/or analysis that supports the issue

Step 4: Discussions on possible alternatives to solve the issue

# Objective

- Address charge code allocation policy issues to determine the approach Bonneville should adopt to recover its costs (or distribute credits) for charge codes it receives as an EIM Entity.
- Policy direction will be set as the starting point for development of the BP-22 Initial Proposal
  - Charge code allocation policy issues will not be finalized until the BP-22 Record of Decision

*Note: Settlement mechanics (e.g. frequency or type of BPA customer billing) will be addressed separately in future workshops, if there is a sub-allocation methodology adopted.*

# Customer Feedback Themes

- Customers expressed interest in phasing in changes for the EIM and considering a partial insulation approach, which BPA has considered in developing alternatives
- Working towards a methodology that considers cost causation and market implications was expressed, consistent with the charge code allocation principles BPA developed
- Requests for additional charge code education were received and further discussion occurred at a customer-led workshop. Today's workshop will work to provide further information, in context of the alternatives and the relationships to BPA's existing structure
  - Magnitude of charges/credits was requested, but there is not comparative information available, given the complexities and size of BPA's BAA compared to other EIM entities

# Charge Code Allocation Approach

*Phase One:  
Approach Development*

*Step 1:  
Introduction & Education*

*Step 2:  
Description of the Issue*

*December 12  
Workshop*

**Phase Two:  
Evaluation**

**Step 3:  
Analyze the Issue**

**Step 4:  
Discuss Alternatives**

**Today's  
Workshop**

**Phase Three:  
Proposal Development**

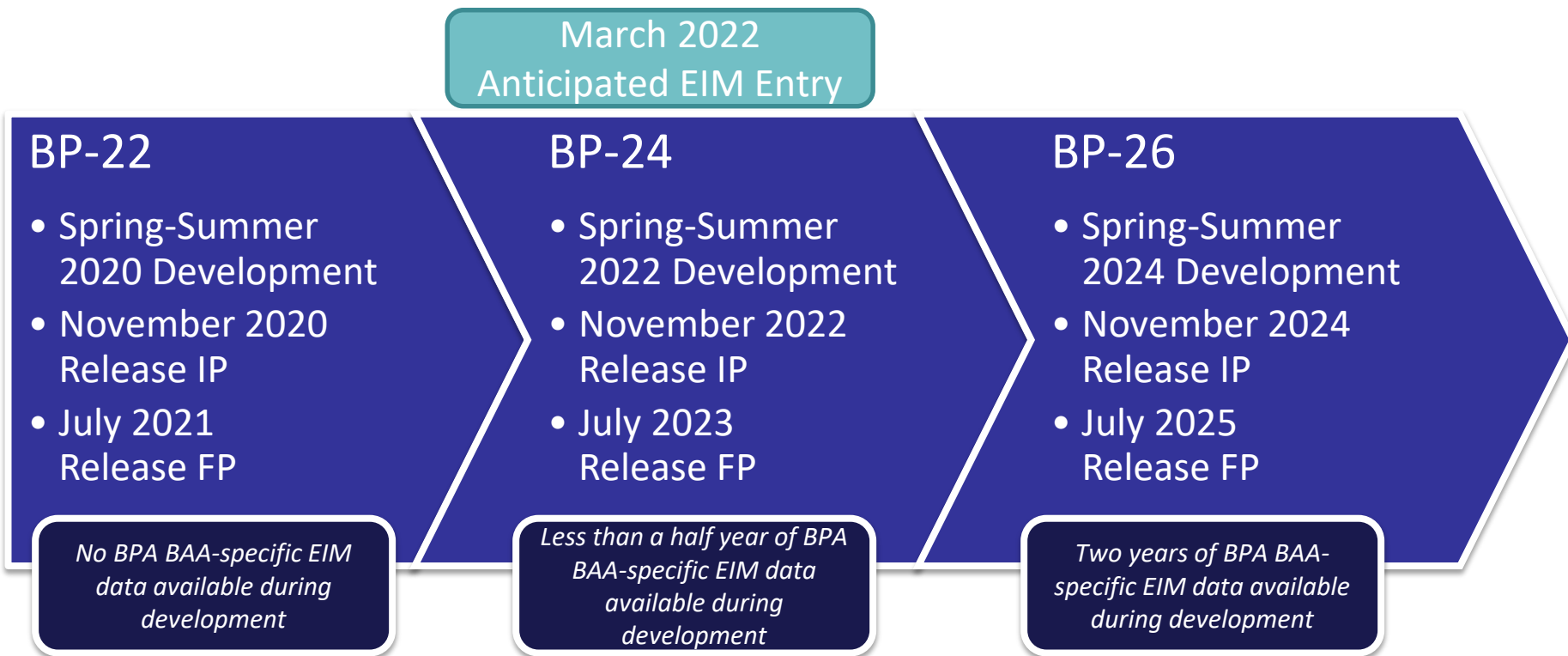
**Step 5:  
Discuss Customer  
Feedback**

**Step 6:  
Staff Proposal**

**April 28  
Workshop**

*The charge code allocation policy proposal will provide the framework for rate design, then rate design will be developed later.*

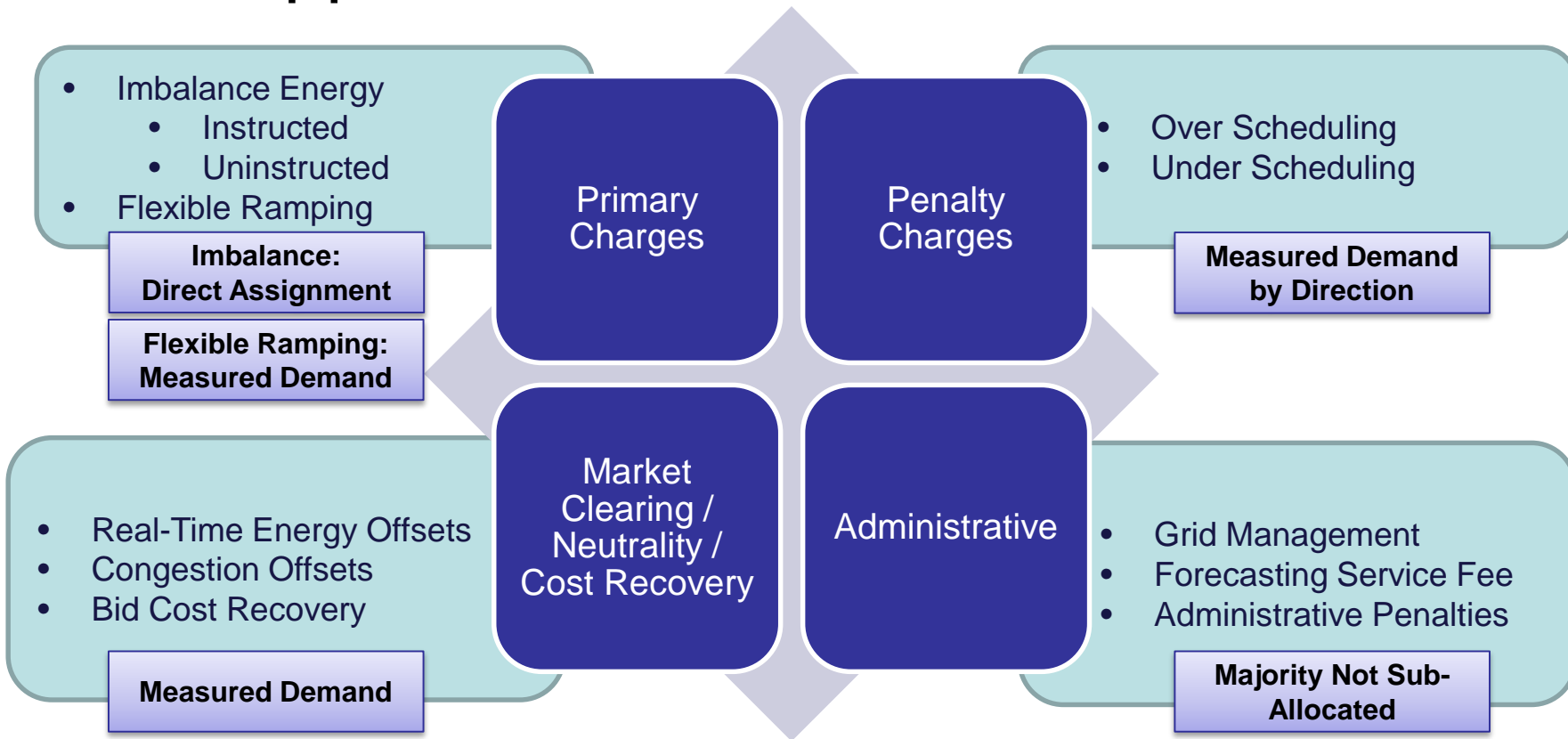
# Timing Context for Rate Development and EIM Information Availability



# Sub-Allocation Focuses on EESC

- Sub-allocation considerations included in today's workshop are focused on the EESC approach
- Allocation of Bonneville Power's costs and benefits as the PRSC is a Power product issue that will be discussed in a future workshop

# FERC Approved Allocation Method Overview



## Sub-Allocation Methods Defined

- **Direct Assignment:** Costs assigned to a customer through a rate or direct pass through that can be linked to a specific action taken by the customer.
- **Measured Demand:** A cost shared among all customers regardless of participation or actions taken.
- **Measured Demand by Direction:** Costs assigned to customers based on contribution to the charge.

## **Primary Charge Exceptions: Not Sub-Allocated**

- *Real Time Unaccounted for Energy (64740)*
- *Daily Flex Ramp Up Uncertainty Capacity (7071)*
- *Daily Flex Ramp Down Uncertainty Capacity (7081)*

## **Administrative Exceptions**

- *GMC (4564 & 4575): Measured Demand*
- *Forecasting Service Fee (701): Direct Assignment*
- *Enforcement Protocol Penalty Allocation (1592): Direct Assignment*

# CAISO to BPA Comparisons

## Imbalance Energy (IIE & UIE)

**Similar to BPA's Energy Imbalance (EI) and Generation Imbalance (GI)**

- Intent is to settle for generation and load imbalances
- UIE is most similar to the EI/GI of today
- IIE also settles Interchange imbalances, which is different from today

## Over & Under Scheduling

**Similar to BPA's Intentional Deviation (ID) and Persistent Deviation (PD)**

- Over/Under Scheduling (applied to load) is meant to prevent entities from leaning on the market
- ID (applied to variable generators) and PD (applied to load and dispatchable generators) are meant to prevent leaning on the BAA

## Flexible Ramping

**Similar to BPA's DERBS, VERBS, & RFR**

- Intent is to ensure there is enough uncertainty capacity to meet unexpected load and generation changes (or load forecast error)
- DERBS and VERBS is capacity to meet unexpected generation changes
- RFR is capacity to meet load



# Criteria for Evaluation

## Feasibility of Implementation

### Customer Perspective

- Resource Costs
- Training Costs  
(scaled to EIM experience)

### BPA Perspective

- Resource Costs to Implement Design
- Recognition of Uncertainties in Forecasting Costs and Revenues

## Administrative Burden

### Customer Perspective

- Cost of Administering
- Volume of Supporting Billing Data

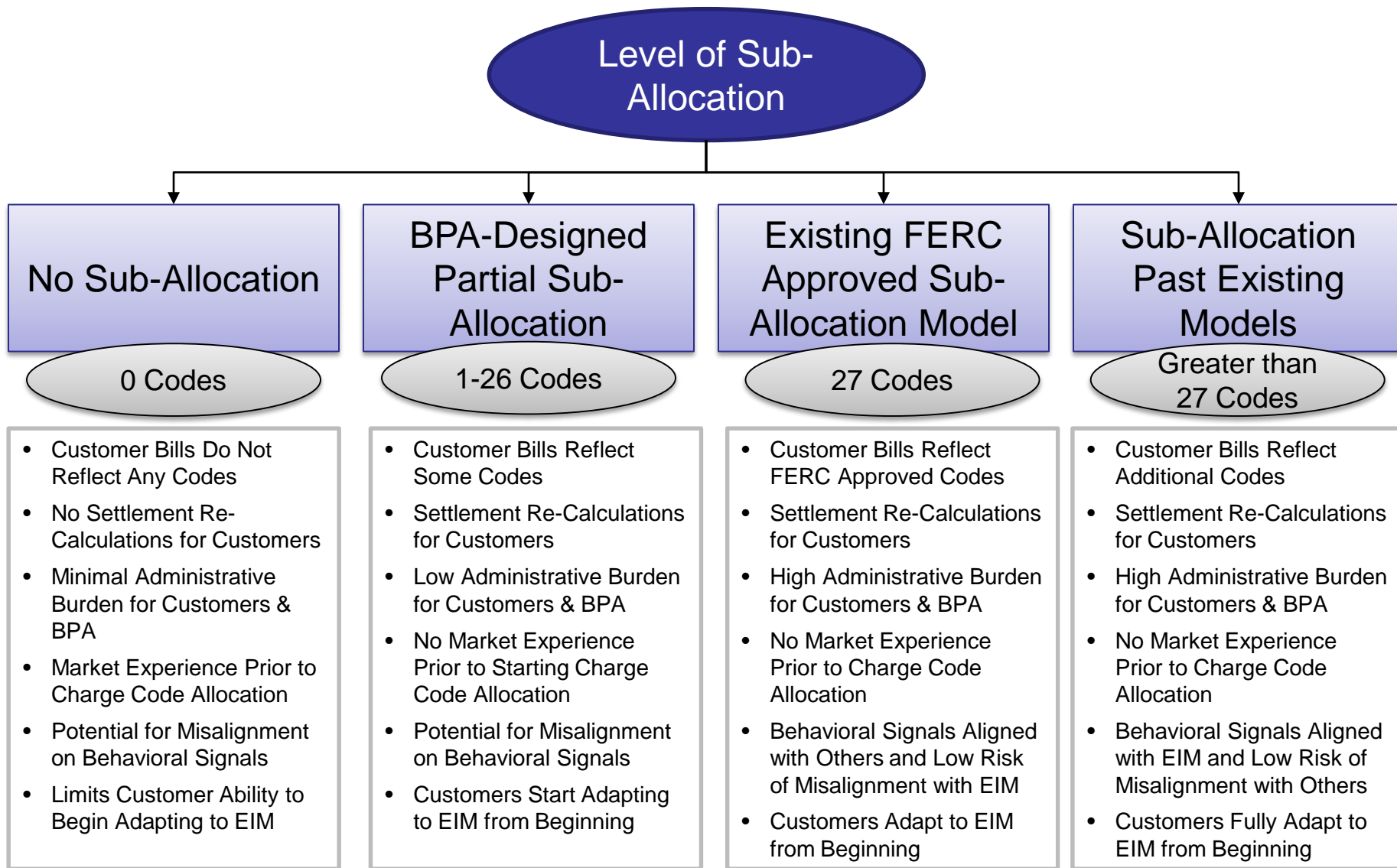
### BPA Perspective

- Cost of Administering Billing and Settlements
- Level of Service based on Complexity of Billing
- Design Limitations based on System Capabilities

## Cost Recovery Design

- Full and Timely Cost Recovery
- Cost Allocation Consistent with Cost Causation
- Incentivize Appropriate Market Behaviors
- Understandable and Transparent Methodology
- Flexibility in Design to Develop with Market Experience
- Minimize Settlement Seams Issues
- Design with Consideration of Risk Mitigation

# Decision-Tree Based Alternatives



# No Sub-Allocation Alternative

No Sub-Allocation

0 Codes

- Customer Bills Do Not Reflect Any Codes
- No Settlement Re-Calculations for Customers
- Minimal Administrative Burden for Customers & BPA
- Market Experience Prior to Charge Code Allocation
- Potential for Misalignment on Behavioral Signals
- Limits Customer Ability to Begin Adapting to EIM

Define Cost Recovery Mechanism

*While cost recovery mechanisms would be developed later, options for cost recovery under any of the alternatives may include:*

- 1) *Rate Design Mechanisms*
- 2) *Planned Risk Mechanisms*
- 3) *Status Quo (utilize existing risk mechanisms only)*

**Criteria Considerations:**

- Feasible to Implement
- Postpones settlement process development, but will require cost recovery mechanisms*
- Administrative Burden
- Minimal administrative burden for customers, thereby limiting BPA administrative burden*
- Cost Recovery Design
- Delays alignment with EIM signals, but there is flexibility for future allocation development*

# BPA-Designed Partial Sub-Allocation Alternative

**BPA-Designed Partial Sub-Allocation**

1-26 Codes

- Customer Bills Reflect Some Codes
- Settlement Re-Calculations for Customers
- Low Administrative Burden for Customers & BPA
- No Market Experience Prior to Starting Charge Code Allocation
- Potential for Misalignment on Behavioral Signals
- Customers Start Adapting to EIM from Beginning

Behavior Driven or Distribution Approach

Define Code Scope

Define Sub-Allocation Mechanics for In-Scope Codes

Define Cost Recovery Mechanism for Out of Scope Codes

**Criteria Considerations:**

- Feasible to Implement
- Starts settlement process and will require some cost recovery mechanisms
- Administrative Burden
- Some administrative burden for customers, thereby adding to BPA administrative burden
- Cost Recovery Design
- Starts alignment with EIM signals, but there is flexibility for future allocation development

# BPA-Defined Partial Sub-Allocation

## Base Code Option

Code Number	Description	FERC Allocation Method	Rationale for Allocation
<b>64750</b>	Uninstructed Imbalance Energy (Schedule 4 and Schedule 9)	Direct Assignment	Customer submits a schedule to BPA based on customer forecast
<b>64600</b>	FMM Instructed Imbalance Energy (Energy Imbalance)	Direct Assignment	Customer has the ability to change schedule in real-time "EIM Market"
<b>64700</b>	Real-Time Instructed Imbalance Energy (Energy Imbalance)	Direct Assignment	Customer has the ability to change schedule in real-time "EIM Market"

Codes in **bold** are included in FERC-Approved sub-allocation.

- Approach captures all energy imbalance calculations and real-time schedule changes.
- Sub-allocating this set of codes on its own ignores the neutrality charges and credits passed on by the CAISO to EIM entities.
- Today's EI and GI bands may be further evaluated given the potential EIM entry.

# BPA-Defined Partial Sub-Allocation

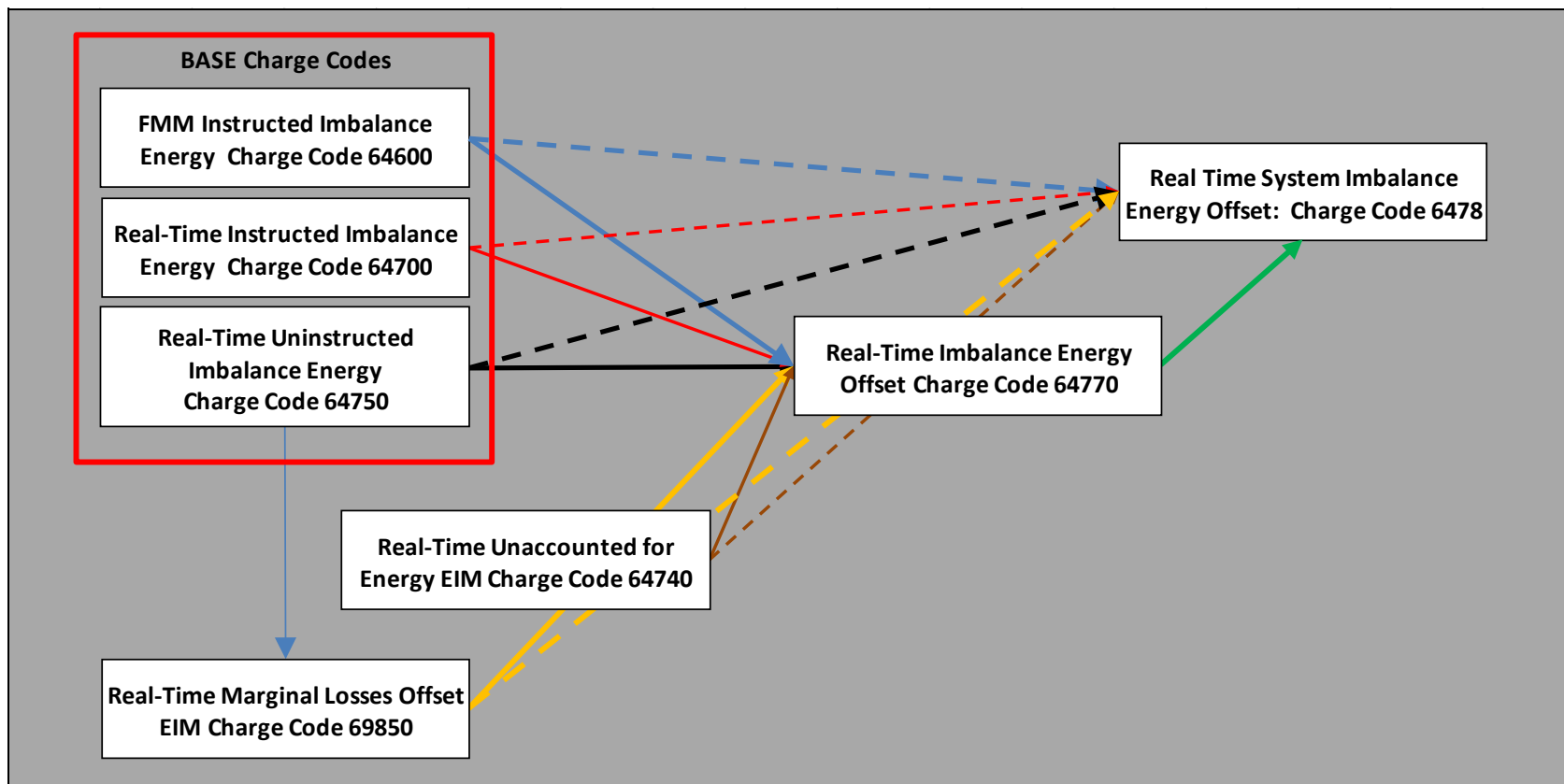
## Base + Neutrality Code Option

Code Number	Description	FERC Allocation Method	Rationale for Allocation
<b>64770</b>	<b>Real Time Imbalance Energy Offset EIM</b>	<b>Measured Demand</b> <i>(BPA May Consider Alternative Methods – such as Pro-Rata Shares of Code Components)</i>	<b>Compensation or charges used to achieve revenue neutrality within each BAA when the market settles.</b>
64740	Real Time Unaccounted for EIM Energy Settlement	Measured Demand <i>(BPA-Proposed Method)</i>	Is presumed to be caused by losses not calculated by the CAISO.
<b>69850</b>	<b>Real Time Marginal Losses Offset EIM</b>	<b>Measured Demand</b>	<b>Associated with a change in losses due to RT generation dispatches.</b>
<b>6478</b>	<b>Real Time Imbalance Energy Offset</b>	<b>Measured Demand</b>	<b>Last allocation to achieve revenue neutrality within CAISO after 64770 settles.</b>

Codes in **bold** are included in FERC-Approved sub-allocation.

- Neutrality Codes could be sub-allocated in addition to the Base Codes.
- While 64740 is not currently part of the FERC-approved sub-allocation, this code is part of the neutrality codes that settle the market.
- See next slide for mapping between the Base and Neutrality codes.

# Base + Neutrality Codes Relationship



- Within the CAISO financial settlements, the Base and Neutrality charge codes are combined to complete the IIE and UIE transactions.
- The map above shows how the Base codes flow into the calculations for the Neutrality codes in order to financially settle the market.

# BPA-Defined Partial Sub-Allocation

## *Potential Adder: Scheduling Penalty Codes*

Code Number	Description	FERC Allocation Method	Rationale for Allocation
<b>6045</b>	Under/Over Schedule Load Charge	Measured Demand by Direction	Bonneville decides to hold customers responsible for over and under scheduling
<b>6046</b>	Under/Over Schedule Load Allocation	Measured Demand by Direction	Bonneville decides to hold customers responsible for over and under scheduling

Codes in **bold** are included in FERC-Approved sub-allocation.

- If the Base or Base + Neutrality options are selected, Scheduling Penalties could be a potential adder for sub-allocation.
- As described, Over/Under Scheduling prevents entities from leaning on the market, whereas ID and PD prevent entities from leaning on the BAA.



# BPA-Defined Partial Sub-Allocation

## *Potential Adder: EIM Dispatch Codes*

Code Number	Description	FERC Allocation Method	Rationale for Allocation
<b>66200</b>	RTM Bid Cost Recovery EIM Settlement	Measured Demand	Reimbursements where the commitment costs were not covered by the LMP.
<b>66780</b>	Real Time Bid Cost Recovery EIM Allocation	Measured Demand	Charges to EESC to reimburse generating resources for costs not recovered through the LMP.
<b>67740</b>	Real Time Congestion Offset EIM	Measured Demand	Recovers the difference between market forecasted congestion cost and resulting congestion cost based on EIM dispatches.

Codes in **bold** are included in FERC-Approved sub-allocation.

- If the Base or Base + Neutrality options are selected, EIM Dispatch Codes could be a potential adder for sub-allocation.

# BPA-Defined Partial Sub-Allocation

## *Potential Adder: Flexible Ramp Codes (Slide 1 of 2)*

Code Number	Description	FERC Allocation Method	Rationale for Allocation
<b>7076, 7077, 7078, 7087, and 7088</b>	Flexible Ramping <i>(Detail by Code on Next Slide)</i>	Measured Demand	Capacity held out to cover load forecast uncertainty.

Codes in **bold** are included in FERC-Approved sub-allocation.

- If the Base or Base + Neutrality options are selected, Flexible Ramp Codes could be a potential adder for sub-allocation.
- Flexible Ramping Defined: Capacity on participating units capable of meeting a five minute ramping need used to address load uncertainty realized prior to Real-Time Dispatch (RTD).
- Today's DERBS, VERBS, and RFR are similar in working to meet unexpected generation and load changes.
  - FCRPS is the primary provider for the flexible ramping needed within BPA's BAA

# BPA-Defined Partial Sub-Allocation

## *Potential Adder: Flexible Ramp Codes (Slide 2 of 2)*

Code Number	Description	FERC Allocation Method	Rationale for Allocation
<b>7076</b>	Flexible Ramp Forecast Movement Allocation	Measured Demand	Capacity held out to cover load forecast uncertainty.
<b>7077</b>	Daily Flexible Ramp Up Uncertainty Award Allocation	Measured Demand	
<b>7078</b>	Monthly Flexible Ramp Up Uncertainty Award Allocation	Measured Demand	
<b>7087</b>	Daily Flexible Ramp Down Uncertainty Award Allocation	Measured Demand	
<b>7088</b>	Monthly Flexible Ramp Down Uncertainty Award Allocation	Measured Demand	

Codes in **bold** are included in FERC-Approved sub-allocation.

# Existing FERC Approved Sub-Allocation Model Alternative

Existing FERC Approved Sub-Allocation Model

27 Codes

- Customer Bills Reflect FERC Approved Codes
- Settlement Re-Calculations for Customers
- High Administrative Burden for Customers & BPA
- No Market Experience Prior to Charge Code Allocation
- Behavioral Signals Aligned with Others and Low Risk of Misalignment with EIM
- Customers Adapt to EIM from Beginning

Use FERC Model for Code Scope

Define Sub-Allocation Mechanics for In-Scope Codes

Define Cost Recovery Mechanism for Out of Scope Codes

*Approved sub-allocation methodologies are the result of other EIM entities filing tariffs with FERC.*

**Criteria Considerations:**

- Feasible to Implement
- Settlement process for majority of codes and will require cost recovery mechanisms
- Administrative Burden
- High administrative burden for customers and BPA
- Cost Recovery Design
- Aligns with EIM signals, with potential limitation on flexibility for future allocation development

# Detailed FERC Approved Sub-Allocation

## ***Sub-Allocated Codes (slide 1 of 4)***

Code Number	Description	FERC Allocation Method
4564	GMC EIM Transaction Charge (Schedule 1A NEVP)	Measured Demand
4575	GMC Scheduling Coordinator ID Charge	Measured Demand
4989	Daily Rounding Adjustment	Measured Demand
4999	Monthly Rounding Adjustment	Measured Demand
<b>6045</b>	<b>Under/Over Schedule Load Charge</b>	<b>Measured Demand by Direction</b>
<b>6046</b>	<b>Under/Over Schedule Load Allocation</b>	<b>Measured Demand by Direction</b>
<b>6478</b>	<b>Real Time Imbalance Energy Offset</b>	<b>Measured Demand</b>

Codes in **bold** are included as options for sub-allocation under the BPA-Defined Partial Sub-Allocation alternative.

- For codes not listed, there is not a sub-allocation method assigned (see Codes without FERC-Approved Sub-Allocation List on Slide 2)

For Further Charge Code Details, See CAISO Code Matrix: <http://www.caiso.com/Documents/ISOChargeCodesMatrix.xls>

# Detailed FERC Approved Sub-Allocation

## ***Sub-Allocated Codes*** (slide 2 of 4)

<b>Code Number</b>	<b>Description</b>	<b>FERC Allocation Method</b>
<b>64750</b>	Uninstructed Imbalance Energy (Schedule 4)	Direct Assignment
<b>64600</b>	FMM Instructed Imbalance Energy (Schedule 4, Bonneville Interpretation)	Direct Assignment
<b>64700</b>	Real-Time Instructed Imbalance Energy (Schedule 4, Bonneville Interpretation)	Direct Assignment
<b>64770</b>	Real Time Imbalance Energy Offset EIM	Measured Demand
<b>67740</b>	Real Time Congestion Offset EIM	Measured Demand
<b>66200</b>	RTM Bid Cost Recovery EIM Settlement	Measured Demand
<b>66780</b>	Real Time Bid Cost Recovery EIM Allocation	Measured Demand
<b>69850</b>	Real Time Marginal Losses Offset EIM	Measured Demand

Codes in **bold** are included as options for sub-allocation under the BPA-Defined Partial Sub-Allocation alternative.

# Detailed FERC Approved Sub-Allocation

## ***Sub-Allocated Codes (slide 3 of 4)***

Code Number	Description	FERC Allocation Method
7070	Flexible Ramp Forecast Movement Settlement	Measured Demand
7071	Daily Flexible Ramp Up Uncertainty Capacity Settlement	Measured Demand
<b>7076</b>	<b>Flexible Ramp Forecast Movement Allocation</b>	<b>Measured Demand</b>
<b>7077</b>	<b>Daily Flexible Ramp Up Uncertainty Award Allocation</b>	<b>Measured Demand</b>
<b>7078</b>	<b>Monthly Flexible Ramp Up Uncertainty Award Allocation</b>	<b>Measured Demand</b>
7081	Daily Flexible Ramp Down Uncertainty Capacity Settlement	Measured Demand
<b>7087</b>	<b>Daily Flexible Ramp Down Uncertainty Award Allocation</b>	<b>Measured Demand</b>
<b>7088</b>	<b>Monthly Flexible Ramp Down Uncertainty Award Allocation</b>	<b>Measured Demand</b>

Codes in **bold** are included as options for sub-allocation under the BPA-Defined Partial Sub-Allocation alternative.

# Detailed FERC Approved Sub-Allocation

## ***Sub-Allocated Codes (slide 4 of 4)***

<b>Code Number</b>	<b>Description</b>	<b>FERC Allocation Method</b>
8989	Daily Neutrality Adjustment	Measured Demand
8999	Monthly Neutrality Adjustment	Measured Demand
701	Forecasting Service Fee	Direct Assignment
1592	Enforcement Protocol (EP) Penalty Allocation Payment	Direct Assignment

Codes in **bold** are included as options for sub-allocation under the BPA-Defined Partial Sub-Allocation alternative.



# Sub-Allocation Past Existing Models

## Alternative

Sub-Allocation Past Existing Models

Greater than 27 Codes

- Customer Bills Reflect Additional Codes
- Settlement Re-Calculations for Customers
- High Administrative Burden for Customers & BPA
- No Market Experience Prior to Charge Code Allocation
- Behavioral Signals Aligned with EIM and Low Risk of Misalignment with Others
- Customers Fully Adapt to EIM from Beginning

Behavior Driven or Distribution Approach

Define Code Scope

Define Sub-Allocation Mechanics for In-Scope Codes

Define Cost Recovery Mechanism for Out of Scope Codes

**Criteria Considerations:**

- Feasible to Implement
- Settlement process for majority of codes and will require cost recovery mechanisms
- Administrative Burden
- Highest amount of administrative burden for customers and BPA
- Cost Recovery Design
- Aligns with EIM signals past other entities, with potential limitation on flexibility for future allocation development

# Additional Codes for Sub-Allocation

## *Codes Without FERC-Approved Sub-Allocation*

Code Number	Description
<b>64740</b>	<b>Real Time Unaccounted for EIM Energy Settlement</b>
2999	Default Invoice Interest Payment
3999	Default Invoice Interest Charge
5024	Invoice Late Payment Penalty
5025	Financial Security Posting Late Payment Penalty
5900	Shortfall Receipt Distribution

Code Number	Description
5901	Shortfall Allocation Reversal
5910	Shortfall Allocation
5912	Default Loss Allocation
7989	Invoice Deviation Interest Distribution
7999	Invoice Deviation Interest Allocation
8526	Generator Interconnection Process GIP Forfeited Deposit Allocation

Code in **bold** is included as an option for sub-allocation under the BPA-Defined Partial Sub-Allocation alternative.

- Allocation method on each of the additional codes would need to be defined, as currently there is not a FERC-approved method for sub-allocation.

*For Further Charge Code Details, See CAISO Code Matrix: <http://www.caiso.com/Documents/ISOChargeCodesMatrix.xls>*

# Alternative Trade-Offs

Level of sub-allocation requires alternative trade-offs, with considerations to the level of:

- **Precision** (behavior-driven cost causation)
- **Market Impacts** (understanding which behaviors drive majority of costs)
- **Administrative Complexity** (transparency and volume of data)
- **Data for Billing** (training needs and resources to interpret bills)
- **Service Needed to Support Design** (potential for increased costs to staff the support)

# Next Steps

- Feedback on alternatives under consideration
  - Please submit to [techforum@bpa.gov](mailto:techforum@bpa.gov) (with copy to your account executive) by Tuesday, March 10
- Next Charge Code Allocation Workshop: April 28
  - Step 5: Discuss Customer Feedback
  - Step 6: Staff Proposal