



# Day-Ahead Market Enhancements

**Phase 1: 15-minute scheduling**

**Phase 2: flexible ramping product**

Stakeholder Meeting

March 7, 2019

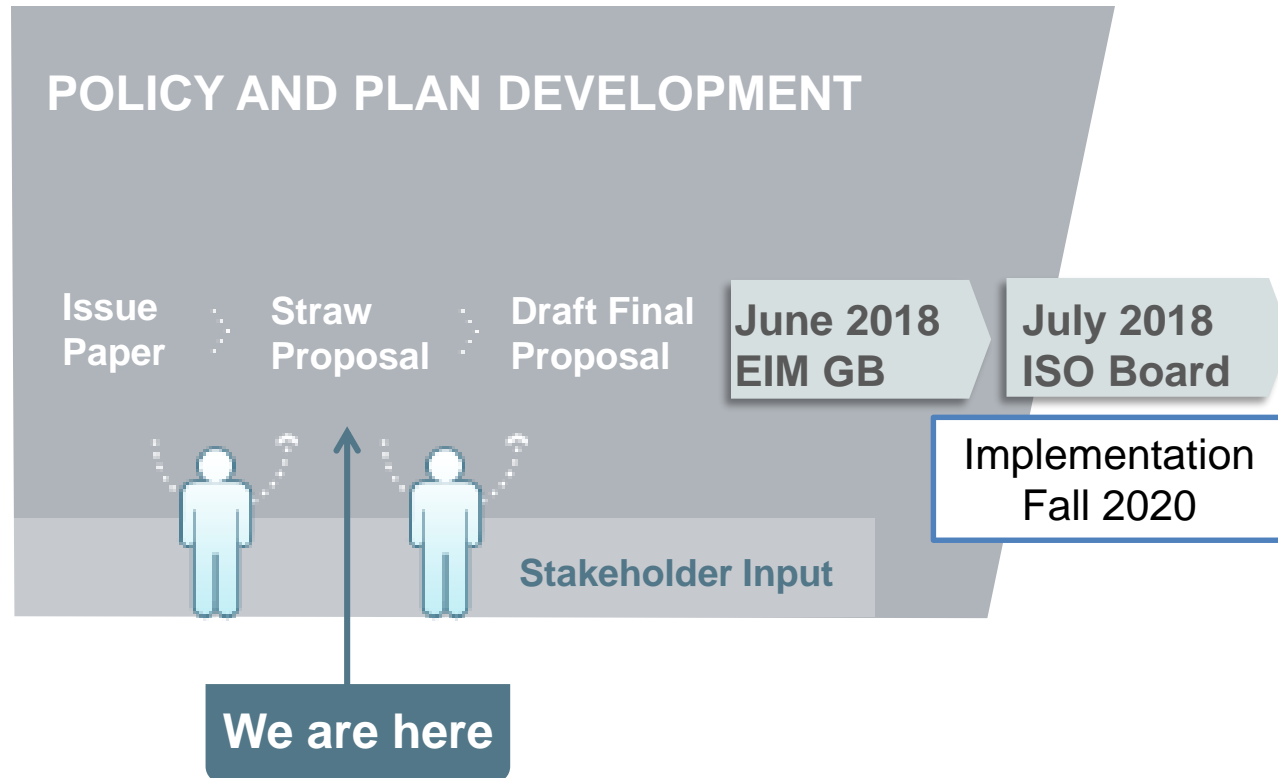
# Agenda

Time	Topic	Presenter
10:00 – 10:10	Welcome and Introductions	Kristina Osborne
10:10 – 12:00	Phase 1: 15-Minute Granularity	Megan Poage
12:00 – 1:00	Lunch	
1:00 – 3:20	Phase 2: Flexible Ramping Product and Market Formulation	Elliott Nethercutt & George Angelidis
3:20 – 3:30	Next Steps	Kristina Osborne

# DAME initiative has been split into in two phases for policy development and implementation

- Phase 1: 15-Minute Granularity
  - 15-minute scheduling
  - 15-minute bidding
- Phase 2: Day-Ahead Flexible Ramping Product (FRP)
  - Day-ahead market formulation
  - Introduction of day-ahead flexible ramping product
  - Improve deliverability of FRP and ancillary services (AS)
  - Re-optimization of AS in real-time 15-minute market

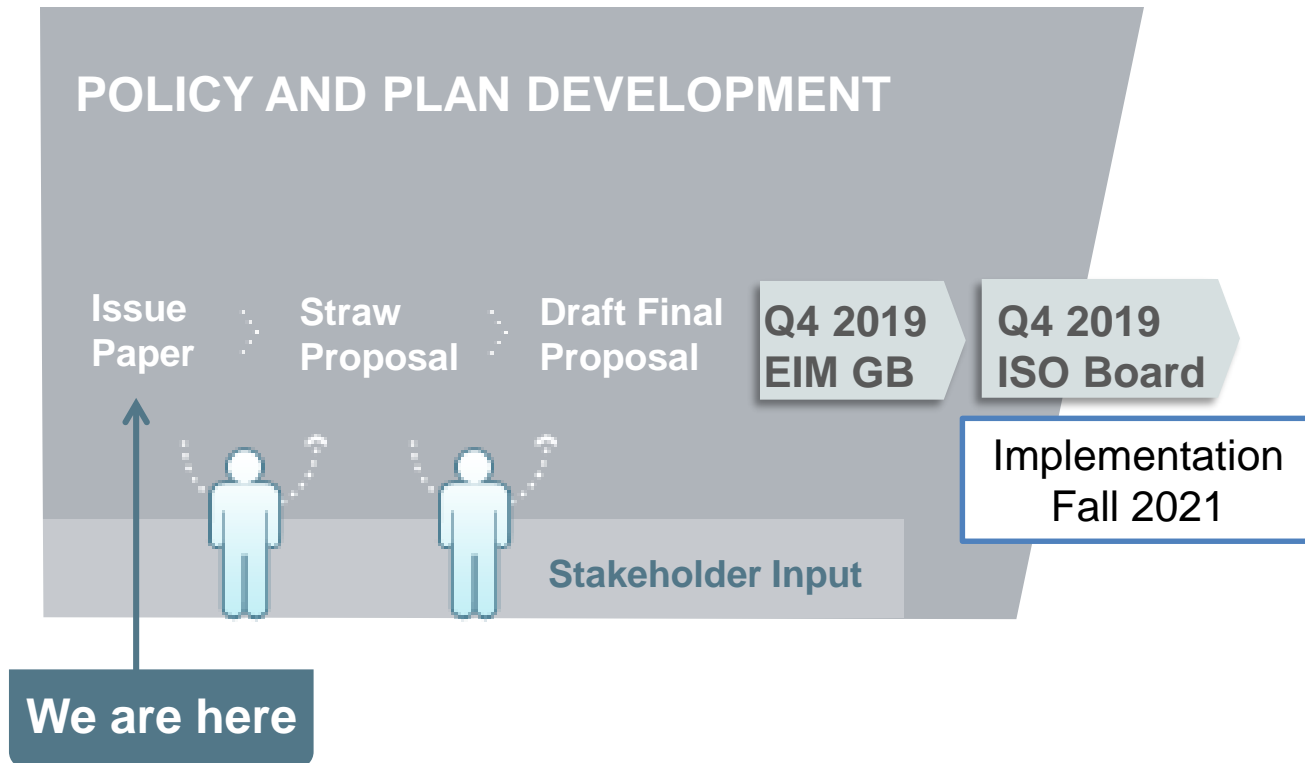
# ISO Policy Initiative Stakeholder Process for DAME Phase 1



# DAME Phase 1 schedule

- Third Revised Straw Proposal – March 2019
- Draft Final Proposal – April 2019
- EIM Governing Body – June 2019
- ISO Board of Governors – July 2019
- Implementation – Fall 2020

# ISO Policy Initiative Stakeholder Process for DAME Phase 2



## DAME Phase 2 schedule

- Issue Paper/Straw Proposal – March 2019
- Revised Straw Proposal – Summer 2019
- Draft Final Proposal – Fall 2019
- EIM GB and BOG decision – Q4 2019
- Implementation – Fall 2021

Day-Ahead Market Enhancements

Third Revised Straw Proposal

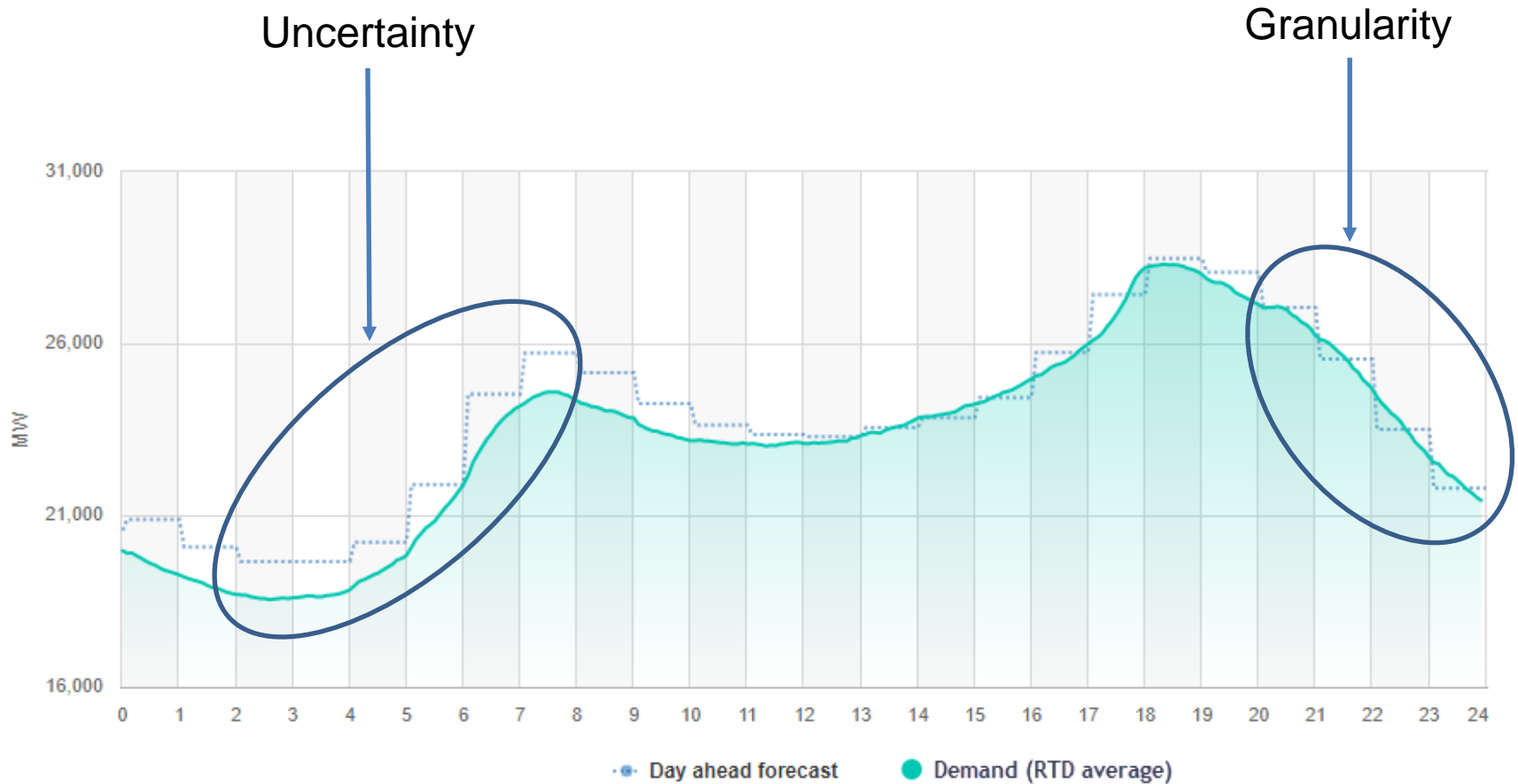
# **15-MINUTE GRANULARITY**

Megan Poage

Sr. Market Design Policy Developer



# Day-ahead market enhancements position the fleet to better respond to real-time imbalances.



# 15-minute scheduling in the day-ahead market positions the fleet to better respond to real-time imbalances (Phase 1).

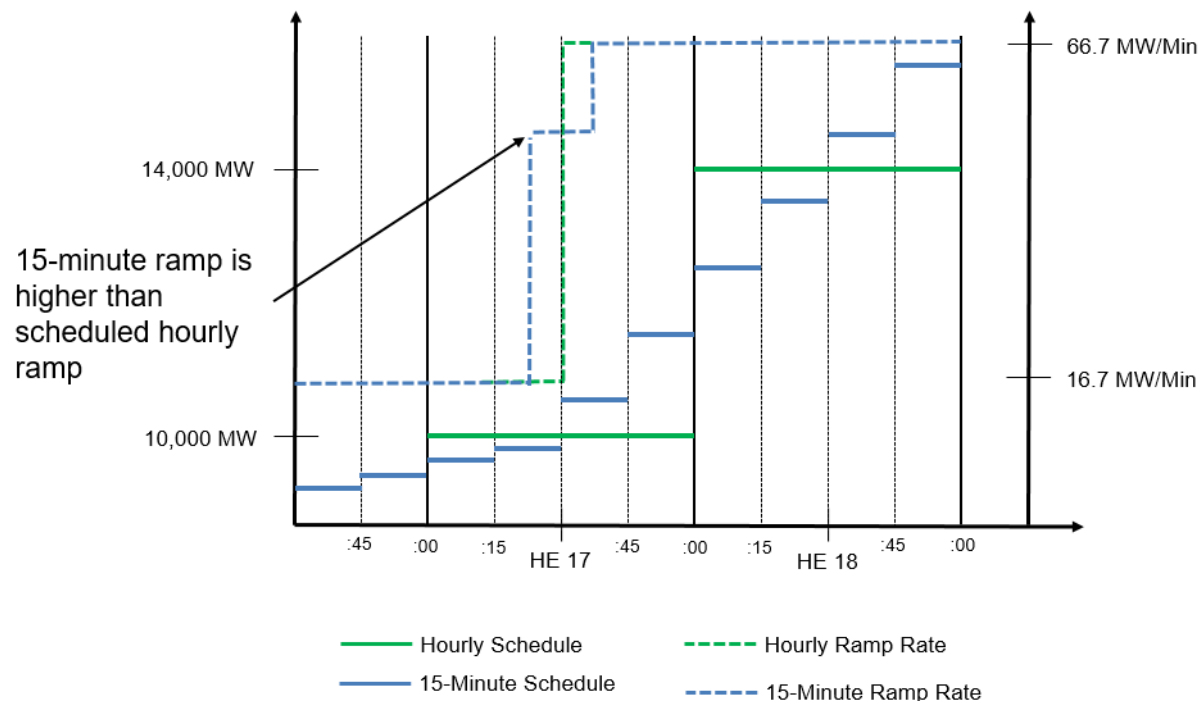
- Operational benefits
  - Pacific Northwest hydro resources can provide 15-minute schedules in day-ahead, but not real-time
  - Improves variable energy resource scheduling in day-ahead
  - Day-ahead flexible ramping product only needs to cover uncertainty
  - Commits resources to more closely match steep net-load ramps and sharp changes in ramp within the hour
- Technical challenges
  - Market optimization to solve for 96 intervals vs. 24
  - Solving market within current market timelines
  - Settlement updates to nearly all charge codes

# 15-minute scheduling design features discussed in this presentation include:

1. Fifteen-minute scheduling
2. Fifteen-minute bidding
3. Hourly unit commitment process
4. Fifteen-minute residual unit commitment (RUC)
5. Intertie bidding and scheduling options
6. Fifteen-minute scheduling coordinator trades
7. Load meter submission options
8. Fifteen-minute ancillary service bidding and scheduling
9. Fifteen-minute market power mitigation
10. Ramping energy calculation modifications
11. Demand response
12. Additional design features
13. EIM changes

# Design Feature 1: 15-minute scheduling

- Move day-ahead scheduling granularity from hourly to 15-minute intervals
  - Provides significant benefits to address granularity differences within the hour



## Design Feature 2: 15-minute bidding

- Applies to all market participants: load, imports, exports, generation, virtual supply/demand
- Eliminates need to use forecasts to shape hourly bids
  - VERs reflect forecast changes by changing the upper economic limit for each 15-minute bid
  - Load can shape their demand by submitting different 15-minute interval bids
  - Proxy Demand Response (PDR) resources can reflect changes in underlying load by 15-minute interval

# Design Feature 2: 15-minute bidding

- **Day-Ahead Market**
  - Submission deadline moved from 10:00 AM to 9:30 AM to allow for additional processing time
    - Day-ahead market will publish at ~1:30 PM (13:30)
  - SC can submit a unique bid curve for all 96 15-minute intervals for the operating day
- **Real-Time Market**
  - Submission deadline remains unchanged at 75 minutes prior to the operating hour
  - SC can submit a unique bid curve for all four 15-minute intervals of the operating hour

## Design Feature 3: Unit commitment decisions

- CAISO technology team has been running simulations to determine market solvability. The following options have been considered:
  - ~~1. Full fifteen-minute unit commitment~~
  - ~~2. Fifteen-minute unit commitment for resources with a start-up time less than one hour. Hourly commitment for resources with a start-up time greater than one hour.~~
  3. Hourly unit commitment for all resources, including MSG transitions.
- Unit commitment decisions and transitions will remain hourly due to complexities that arise by quadrupling the number of binary variables

## Design Feature 4: 15-minute residual unit commitment (RUC) process

- RUC will be performed after IFM to clear physical supply compared to the ISO's 15-minute load forecast
- Intermittent adjustment process will evaluate under-scheduled VER supply in 15-minute granularity
- RUC will only commit additional supply
- DAME Phase 2 will evaluate changes in RUC beyond moving to 15-minute granularity



## Design Feature 5: Intertie scheduling

- Import and export interties can be scheduled in the day-ahead market in fifteen-minute or hourly-block granularity
- Can elect the **hourly block** or **15-minute** bidding option
  - Cannot change designation between DA and RT
  - If a 15-minute intertie resource cannot be scheduled in the real-time market, it can self-schedule its day-ahead award in RT
  - If an SC wants an hourly day-ahead schedule and also be 15-minute dispatchable in RT, the intertie resource can be self-scheduled into the DA market to ensure the same MW award in each 15-minute interval

## Design Feature 6: Inter-SC trades

- Currently scheduling coordinators submit a single hourly inter-SC trade 45 min before the hour
- Propose to perform inter-SC trades on a 15-minute interval basis
  - Day-ahead:
    - No change to timeline, but introduce 15-minute trades
  - Real-time:
    - Allow RT inter-SC trades to be submitted 45 minutes prior to each FMM interval
    - Will enable VERs to use a 15-minute forecast closer to actual flow to create inter-SC trade
    - Inter-SC GMC = \$1.00 charge, divided by 4 for a new rate of \$0.25 per trade

# Design Feature 7: Load submission

- Load submission can be in fifteen-minute or hourly granularity based on underlying meters
- If meters are mixed, hourly submission will be shaped by the CAISO for settlement purposes

	HE 10				HE 11				HE 12			
Hourly Meter (MWh)	1000				1200				1400			
	HE 10				HE 11				HE 12			
	Int 1	Int 2	Int 3	Int 4	Int 1	Int 2	Int 3	Int 4	Int 1	Int 2	Int 3	Int 4
15-Minute Shaped (MW)	-	-	1025	1075	1125	1175	1225	1275	1325	1375	-	-
15-Minute Shaped (MWh)	-	-	256	269	281	294	306	319	331	344	-	-

- Use linear interpolation between hourly meter data to create 15-minute meter data
- $200\text{MW} \text{ ramp} / 60 \text{ minutes} = 3.33 \text{ MW/Min}$
- $\text{HE10 interval 3} = 1000\text{MW} + 3.33 \text{ MW/Min} * 7.5 \text{ Min} = 1025\text{MW}$

## Design Feature 8: Ancillary services

- Propose to procure ancillary services for every 15-minute interval in both the day-ahead and real-time markets
- Appendix K requires spin/non-spin to sustain output for 30 minutes
  - Applies even if no AS schedule in subsequent 15-minute interval
- NGR regulation awards must be supported by state of charge supporting 30 minutes of dispatch and 15 minutes of charging
- AS on interties can only be procured from 15-minute dispatchable resources

## Design Feature 8: Ancillary services (cont.)

- Award AS using single dynamic ramp rate, limited by certified AS capacity
- Regulation ramp rate used in AGC can be lower than dynamic ramp rate
- If contingency event, spin/non-spin will be dispatched using dynamic ramp
- When in contingency, regulation resources use dynamic ramp rate

## Design Feature 8: Ancillary services (cont.)

- The CAISO proposes to eliminate the AS self-provision qualification process, but will continue to support self-provision of AS
  - The self-provision qualification process currently uses a multi-step pre-process before the market optimization utilizing legacy code that is not co-optimized in the market
- Maintain scheduling priority through penalty prices, but allow co-optimization with other products

## Design Feature 9: Market power mitigation

- Market power mitigation will be evaluated every 15-minutes to align with fifteen-minute scheduling in the day-ahead market
- Local market power mitigation enhancements (LMPME) will provide more accurate local MPM in the real-time market
  - Eliminates balance of the hour mitigation

## Design Feature 10: Modification to expected energy calculation

- Currently, standard ramping energy (SRE), ramping energy deviation (RED), and residual imbalance energy (RIE) are calculated for all resources to address hourly schedule changes
  - SRE is settled at a \$0.00 price
  - RED is settled at RTD LMP
  - RIE is settled at the reference interval bid, or the RTD LMP if the reference interval bid is not available
- Propose to only calculate SRE and RED for resources that self-schedule into the real-time market
  - Hourly block self-schedule will assume a 20 minute ramp
  - 15-minute self-schedule will assume a 10 minute ramp



## Feature 11: Demand response

- Demand response models can participate in the fifteen-minute day-ahead market
  - Must select appropriate model in Master File based on necessary notification time needed for response
  - Hourly block option will only be scheduled if economic over the four 15-minute intervals of the hour
- Baseline calculation will be modified to align with the scheduling/bidding granularity of the demand response resource

## Feature 12: Additional changes (1 of 3)

- Administrative pricing rules
  - Use relevant 15-minute day ahead price if FMM and RTD prices are unavailable
- Make-whole payments
  - Only applies to load and hourly block exports
  - 15-minute exports eligible for bid cost recovery
- 15-minute real-time load aggregation point price
  - Weighted average of FMM + 3 RTD intervals

## Feature 12: Additional changes (2 of 3)

- CRR clawback evaluated each 15-minute interval
  - CRRs are settled for each 15-minute day-ahead interval
  - Cleared convergence bids are awarded by 15-minute interval and settled at 15-minute LMP
  - Convergence bids are automatically reversed at the FMM price for the corresponding real-time 15-minute interval
- HASP reversal rule evaluated each 15-minute interval
  - 15-minute resource that doesn't tag could have different schedule for each 15-minute interval
- Market power mitigation performed for each 15-minute interval

## Feature 12: Additional changes (3 of 3)

- Resource adequacy must offer obligation (RA MOO) bid insertion
  - Insert bid for each 15-minute interval in of the operating hour
- Existing transmission contract calculator
  - All different transmission limits for 15-minute interval based upon 15-minute ETC use
- In general, all hourly rules will move to 15-minute granularity
  - Please include in stakeholder comments if a rule isn't addressed and the general rule may not apply

## Feature 13: EIM changes – resource sufficiency evaluation

- Base schedules will now be submitted with 15-minute granularity to enable 15-minute resource sufficiency evaluation
  - Under/over scheduling penalties calculated in the **balance test** will be evaluated by 15-minute interval
  - Under/over scheduling histogram used in the **capacity test** will be calculated by 15-minute interval
- 15-minute evaluation of the **capacity test** and **flexible ramping test** have been addressed in the EIM Enhancements project
  - Will be implemented on April 15, 2019

Aligns ISO day-ahead schedule & EIM base schedule

## Feature 13: EIM changes - settlement of regulation energy in the EIM (1 of 2)

- Currently, EIM entity uses a manual dispatch after the operating hour to identify AGC energy
  - Manual dispatch changes the classification of the regulation energy from uninstructed imbalance energy (UIE) to instructed imbalance energy (IIE)
  - This is important because uninstructed imbalance energy determines the amount of uplift costs that can be shifted between BAAs
- Regulation up and down can be specified in the resource plan to identify regulation capacity
  - Will differentiate between ABC and regulation as indicated on the resource plan at a later date

## Feature 13: EIM changes - settlement of regulation energy in the EIM (2 of 2)

- Currently, if the EIM entity fails to submit a manual dispatch, the energy is settled as uninstructed imbalance energy
- The CAISO proposes to settle the uninstructed response to AGC as regulation energy, which is instructed imbalance energy
  - This eliminates the need for a manual dispatch to have the energy deviations classified as instructed imbalance energy

Will be implemented separately from DAME Phase 1  
in the Fall of 2019

In summary, 15-minute scheduling provides significant operational benefits and integrates more renewables

- Pacific Northwest hydro resources can provide 15-minute schedules in day-ahead, but not real-time
- Improves variable energy resource scheduling in day-ahead
- Day-ahead flexible ramping product only needs to cover uncertainty
- Commits resources to more closely match steep net-load ramps and sharp changes in ramp within the hour



# Proposed EIM Governing Body Classification

- DAME Phase 1: Hybrid non-EIM driven
  - 15-minute scheduling/bidding: Advisory
  - 15-minute base scheduling: Primary (non-severable)
- Stakeholders encouraged to submit responses to the EIM classification within written comments

# DAME Phase 1 schedule

Item	Date
<b>Post Third Revised Straw Proposal for DAME Phase 1</b>	February 28, 2019
Stakeholder Conference Call	March 7, 2019
Stakeholder Comments Due	March 21, 2019
<b>Post Draft Final Proposal for DAME Phase 1</b>	April 9, 2019
Stakeholder Conference Call	April 16, 2019
Stakeholder Comments Due	April 30, 2019
<b>EIM Governing Body Meeting (hybrid non-EIM specific)</b>	June 27, 2019
<b>CAISO Board of Governors Meeting</b>	July 24, 2019
<b>Implementation</b>	Fall 2020

Day-Ahead Market Enhancements

Issue Paper/Straw Proposal

# **FLEXIBLE RAMPING PRODUCT**

Elliott Nethercutt

Sr. Market Design Policy Developer

# Identified Issues to be addressed by DAME Phase 2

- **Uncertainty from Day-Ahead to Fifteen-Minute Market**
  - Changes to the net load forecast may arise, necessitating the re-dispatch of energy in the real-time market (*i.e.*, Uncertainty)
- **Undeliverable and Inefficient Procurement of Ancillary Services**
  - When conditions change between the day-ahead and real-time markets, the market is currently unable to re-optimize ancillary services with real-time energy

# Day-Ahead Market Structure and Flexible Ramping Product

# Proposed Day-Ahead Market Structure

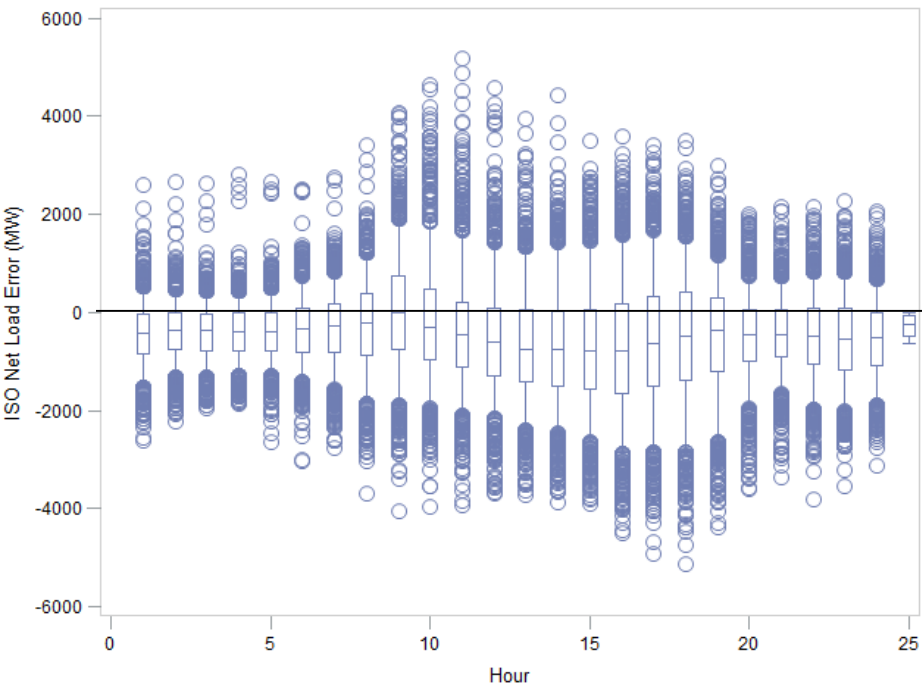
- Integrated forward market (IFM) that co-optimizes:
  - Energy
  - Ancillary Services
  - Day-Ahead Flexible Ramping Product (DA FRP) **\*new\***
    - System-wide requirements and regional deliverability
- Reliability and deliverability assessment (RDA)
  - Repurpose existing RUC process and move outside the market
  - Uses load forecast and inputs from integrated forward market including energy schedules and flexible ramping product awards
  - Will identify resources that may need to be exceptionally dispatched by the operator
  - Utilize RDA for next day engineering studies

# Day-ahead flexible ramping product introduction

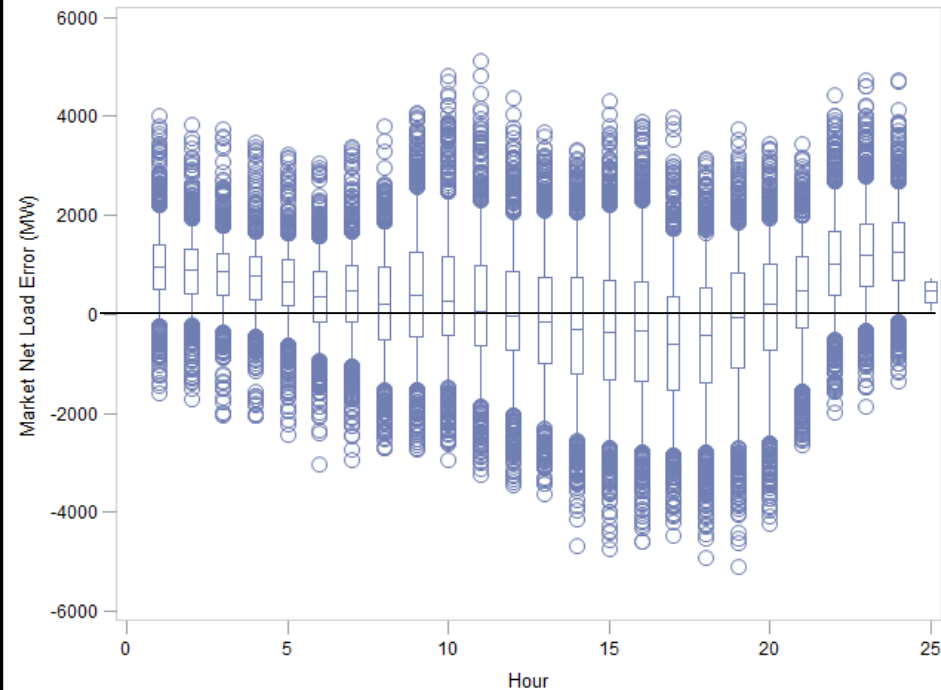
- After observing one year of hourly data, CAISO proposes basing the FRP requirement around the market's forecast error
- Day-ahead FRP is a biddable product
- Market net load error will adequately capture potential uncertainty and ensure adequate procurement of day-ahead FRP (in both upward and downward directions) to cover potential deviations between the IFM and the FMM

# Range of uncertainty that materializes between day-ahead and real-time: CAISO load forecast vs. market

*CAISO Hourly Distribution of Forecasted Net Load Error*



*Hourly Distribution of Market Net Load Error (IFM to fifteen-minute market)*





## Regional requirements will ensure deliverability for day-ahead FRP

- Regional requirements to distribute a portion of the overall requirement across each balancing authority area
  - Similar to ancillary services, this approach will provide sufficient confidence that FRP can be dispatched in subsequent intervals
- Establish upward and downward constraints for each region to insure that day-ahead AS and FRP are deliverable
  - Includes consideration for import/export simultaneous regional transfer capability

# Day-Ahead market formulation and procurement of flexible ramping product ensures deliverability

- Integrated forward market will co-optimize procurement of energy, AS and FRP
- Constraints modeled to ensure deliverability between regions
- Minimizes costs associated with procurement of FRP

# Flexible Ramping Procurement Constraints

- System-wide FRU/FRD procurement

$$\left. \begin{array}{l} \sum_i FRU_{i,t} \geq FRUR_t \\ \sum_i FRD_{i,t} \geq FRDR_t \end{array} \right\}, t = 1, 2, \dots, T_D$$

- Subject to regional deliverability constraints

# Regional Deliverability Constraints

$$\left. \begin{aligned}
 & \max \left( 0, \sum_{i \in S_r} (EN_{i,t} - L_{i,t}) + \sum_{j \in S_r} (EN_{j,t} - L_{j,t}) - LOSS_{r,t} \right) + \\
 & \max \left( 0, \sum_{i \in S_r} (FRU_{i,t}) - FRUR_{r,t} \right) + \max \left( 0, FRDR_{r,t} - \sum_{i \in S_r} (FRD_{i,t}) \right) \leq NEL_{r,t} \\
 & \max \left( 0, \sum_{i \in S_r} (L_{i,t} - EN_{i,t}) + \sum_{j \in S_r} (L_{j,t} - EN_{j,t}) + LOSS_{r,t} \right) + \\
 & \max \left( 0, \sum_{i \in S_r} (FRD_{i,t}) - FRDR_{r,t} \right) + \max \left( 0, FRUR_{r,t} - \sum_{i \in S_r} (FRU_{i,t}) \right) \leq NIL_{r,t}
 \end{aligned} \right\},$$

$\forall r > 0 \wedge t = 1, \dots, T_D$

- Reserve capacity on regional transmission interface for Energy/AS/FRP import/export

The following market design considerations for the day-ahead flexible ramping product are introduced in this presentation:

- Requirements
- Resource eligibility
- Bidding
- Settlement of imbalances
- Cost allocation
- Additional design considerations

# Day-Ahead Flexible Ramping Product: Requirements

- Day-ahead flexible ramping product requirement can be met using a single product in upward and downward directions:
  - Fifteen-minute resources: static inerties and slow demand response
  - Five-minute resources: internal supply and dynamic inerties
- Requirement will be scalable based upon CAISO forecast of load, solar, and wind

# Day-Ahead Flexible Ramping Product: Requirements

- The CAISO is considering two approaches for the requirement:
  - **Combined FRP Requirement:** Procure day-ahead FRP requirement *plus* a portion of the real-time FRP requirement during the day-ahead timeframe
  - **Separate FRP Requirement:** Procure the day-ahead FRP requirement to cover IFM to FMM uncertainty in the day-ahead time frame. *Then* procure the real-time FRP requirement to cover FMM to RTD uncertainty in real-time.

# Day-Ahead Flexible Ramping Product: Requirements

- The CAISO is considering two approaches for the FRP penalty price:
  - Set equal to the real-time FRP penalty price, or
  - Tiered approach
    - Small shortage: lower penalty price
    - Large shortage: higher penalty price
- Unlike in real-time, do not use a ten-segment demand curve
  - This allows us to repurpose RUC



# Day-Ahead Flexible Ramping Product: Resource Eligibility

- Operational characteristics will determine resource eligibility for receiving FRP awards in either direction
  - Leverage existing shared ramping models, which considers awards for both energy and AS.

Status	Maximum MW Quantity	Award Eligibility
<b>Online</b>	Dynamic Ramp Rate over 15-minutes from energy schedule	<ul style="list-style-type: none"> <li>Eligible for <u>up</u> award to min(Pmax, maximum quantity)</li> <li>Eligible for <u>down</u> award of min (IFM energy – Pmin, maximum quantity), but Pmin can be included if the resource can shut down</li> </ul>
<b>Offline short-start unit (start-up time less than 15 minutes)</b>	Maximum MW Quantity = LOL + Dynamic Ramp Rate over (15 minutes – SUT) from LOL	<ul style="list-style-type: none"> <li>Eligible for <u>up</u> award to min (Pmax, maximum quantity)</li> <li>Not eligible for <u>down</u> award</li> </ul>

# Day-Ahead Flexible Ramping Product: Resource Eligibility

- Hourly system resources (MF registration) and hourly intertie transactions are not eligible for FRP awards
- Fifteen-minute system resources (MF registration) must be fifteen-minute dispatchable in the real-time market to be eligible for FRP awards
- Fifteen-minute dispatchable intertie transactions are always eligible for FRP awards and subject to RT MOO
- Hourly PDR/RDRR are not eligible for FRP awards
- Fifteen-minute and five-minute PDR/RDRR are eligible for FRP awards

# Day-Ahead Flexible Ramping Product: Resource eligibility – E-Tagging for Intertie Resources

- Four possible approaches for intertie eligibility:
  1. Require E-Tag submission prior to the day-ahead market run
  2. Require E-Tag submission after the publication of the day-ahead market run
  3. Require E-Tag submission before the real-time market (at T-40)
  4. Only allow resource adequacy resources to provide FRP on interties

# Day-Ahead Flexible Ramping Product: Bidding

- Bids should reflect the cost of being available for re-dispatch in the real-time market; and consider:
  - Cost of procuring and/or disposing of gas in real-time
  - Cost to modify hydro systems from what was scheduled in the day-ahead market
  - Cost of preparation for demand response
  - Other examples?

# Day-Ahead Flexible Ramping Product: Bidding

- CAISO proposes to design the market such that eligible market participants can bid on the following products:
  - Flexible ramping product (upward and downward)
  - Corrective capacity (upward or downward)
- CAISO is considering whether the same bid can be used for both directions
- CAISO will not support self-provision of FRP or CC

# Day-Ahead Flexible Ramping Product: Bidding

- **Corrective Capacity Bids**
  - Same capacity cost for corrective capacity and day-ahead FRP
  - Corrective capacity is procured on a nodal-basis, which introduces the need for mitigation approaches.

# Day-Ahead Flexible Ramping Product: Bidding

- Resource Adequacy (RA) Resources
  - Initially required to bid \$0.00/MWh
  - Paid for any opportunity costs from not providing energy to meet the day-ahead FRP uncertainty requirement
- This is a transition period between now and EDAM
  - This is a transition to allow RA contract to reflect that this cost (to be available for re-dispatch) can be bid

## Day-Ahead Flexible Ramping Product: Settlement of imbalances will be finalized when we determine the requirement (1 of 2)

- **Combined FRP Requirement:** Settle day-ahead FRP awards at the marginal day-ahead price
  - Resources that meet system requirement: paid system marginal price
  - Resources that meet the regional requirement: paid regional marginal price (includes value of also meeting the system requirement)
- Any deviation between the IFM award and the FMM award will be settled at the FMM FRP price
- Any deviation between the FMM award and the real-time dispatch award will be settled at the real-time market FRP price



## Day-Ahead Flexible Ramping Product: Settlement of imbalances will be finalized when we determine the requirement (2 of 2)

- **Separate FRP Requirement:** Settle day-ahead FRP awards at the marginal day-ahead price
  - Resources that meet system requirement: paid system marginal price
  - Resources that meet the regional requirement: paid regional marginal price (includes value of also meeting the system requirement)
- FMM award paid the FMM price
- Any deviation between the FMM award and the real-time dispatch award will be settled at the real-time market FRP price

# Day-Ahead Flexible Ramping Product: Settlement of Imbalances

- No-Pay Provision Options

1. Resources with insufficient economic bids in real-time to cover FRP award will result in no-pay provisions to address shortfall, which will claw back payments made to the resource in the day-ahead market
2. Instead of proposing a disqualification process, determine a settlement mechanism to incentivize appropriate bidding behavior for the FRP must-offer obligation into the real-time market; the no-pay provision would require the clawback to be twice the day-ahead amount

## Day-Ahead Flexible Ramping Product: Cost Allocation is also dependent on requirement

- **Combined FRP Requirement:** utilize current FRP allocation methodology adding a cost bucket for virtuals
- **Separate FRP Requirement:**
  - Allocate day-ahead FRP (similar to RUC today)
  - Allocate real-time FRP with no changes

# Day-Ahead Flexible Ramping Product: Additional Design Considerations

- Application of Grid Management Charge
  - CAISO believes market efficiency could be improved if day-ahead costs can be captured in the capacity bid
  - In real-time, the capacity bid will be set equal to the market service charge

# Re-Optimization of Ancillary Services

# Re-optimization of Ancillary Services

- CAISO proposes no bidding in the real-time market for spinning and non-spinning reserves
- By submitting bids into the real-time market, there will be no marginal cost for making resources available to the real-time-market (*i.e.*, sunk cost)
- Energy opportunity cost will establish the price and bid costs will be set equal to the market services grid management charge (GMC)

# Re-optimization of Ancillary Services

- Regulation up and down will continue to submit bids in the real-time market, creating a potential need for an estimation of regulation energy settlement (estimation may need to be included in capacity bids)
- Allowance of mileage bids will continue in the real-time market and the self-provision quantity will be supported (as currently applies for AS)

# Re-optimization of Ancillary Services

- CAISO proposes retiring flag to allow market participants to select contingency-only option, with all awards categorized as contingency only-in the real-time dispatch
- Operators will...
  - Maintain ability to block a resource from being awarded AS to avoid awarding resources behind a constraint
  - Be able to lock the day-ahead AS awards in the real-time market, allowing confirmation of deliverability (prevent re-optimization from shifting AS from a deliverable resource to a non-deliverable resource); these cases will be logged and reported.



# EIM Governing Body Classification

- DAME Phase 2:
  - Entire initiative: Advisory
- Stakeholders encouraged to submit responses to the EIM classification within written comments

# DAME Phase 2 schedule

Item	Date
<b>Post Issue Paper/Straw Proposal for DAME Phase 2</b>	February 28, 2019
Stakeholder Conference Call	March 7, 2019
Stakeholder Comments Due	March 21, 2019
<b>Post Revised Straw Proposal &amp; Draft Final Proposal for DAME Phase 2</b>	TBD Summer & Fall 2019
Stakeholder Conference Call	TBD Summer & Fall 2019
Stakeholder Comments Due	TBD Summer & Fall 2019
<b>EIM Governing Body Meeting (advisory)</b>	TBD Q4 2019
<b>CAISO Board of Governors Meeting</b>	TBD Q4 2019
<b>Implementation</b>	Fall 2021

# Next Steps

- Stakeholders should submit separate comments for
  - DAME Phase 1: 3<sup>rd</sup> Revised Straw Proposal, and
  - DAME Phase 2: Issue Paper/Straw Proposal
- Submit comments using the template provided on the CAISO website
- Comments should be submitted to [InitiativeComments@caiso.com](mailto:InitiativeComments@caiso.com) by March 21, 2019