AGENDA

| Time	Topic
10:00 - 10:10	Welcome and opening remarks
10:10 – 12:30	Walkthrough of EDAM revised straw proposal
12:30 - 1:00	Lunch
1:00 – 4:50	Walkthrough of EDAM revised straw proposal
4:50 - 5:00	Next steps and closing remarks

EDAM Stakeholder Process and Timeline

Milos Bosanac, *Regional Markets Sector Manager, Market and Infrastructure Policy*

California ISO

Policy Initiative Stakeholder Process
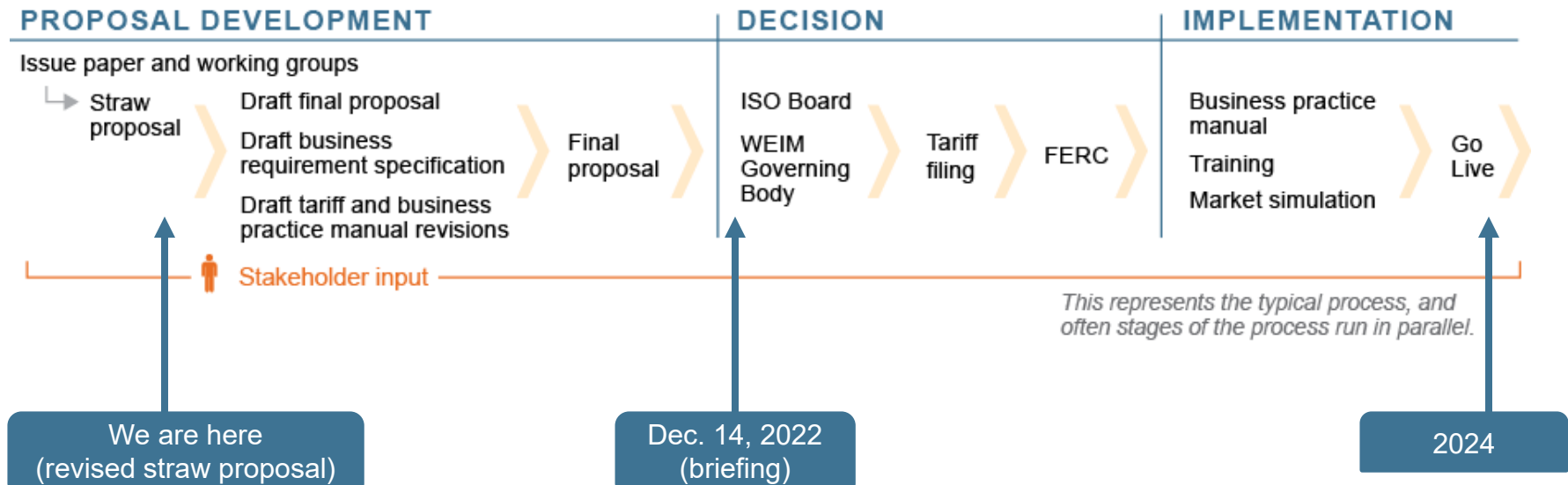
EDAM milestones

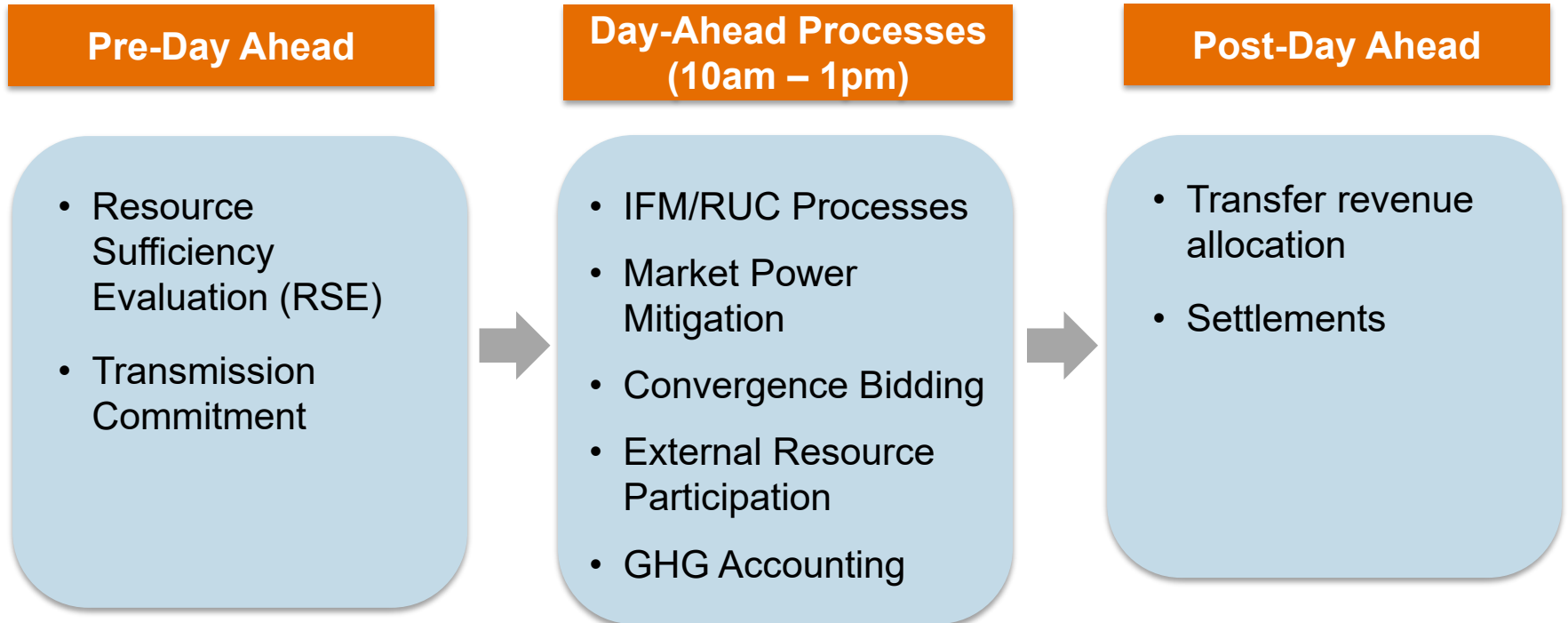| Q2	• April 28 EDAM straw proposal published • May 25-26 EDAM stakeholder meeting (in-person and virtual) • June 16 Straw proposal comments due
Q3	• July 11-27 EDAM technical workshops • August 16 Publication of revised straw proposal • August 29 Virtual stakeholder meeting ← We are here • September 7-8 In-person stakeholder meeting • September 15 Publish tariff framework outline • September 20 Revised straw proposal comments due
Q4	• October 26 Publication of draft final proposal • November 2-3 Stakeholder meeting • November 7 Publish tariff framework • November 18 Draft final proposal stakeholder comments due • November 28 Tariff framework comments due • December 7 Publish final proposal • December 14 Briefing to ISO Board and WEIM GB
2023	**Draft tariff publication (Q1), FERC filing (Q2), Implementation Activities (Fall)**
2024	**EDAM Go-Live**

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EDAM Straw Proposal Walkthrough – Processes and Activities

Milos Bosanac, *Regional Markets Sector Manager, Market and Infrastructure Policy*

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EDAM design components – an overview

Pre-Day Ahead

- Resource Sufficiency Evaluation (RSE)
- Transmission Commitment

Day-Ahead Processes (10am – 1pm)

- IFM/RUC Processes
- Market Power Mitigation
- Convergence Bidding
- External Resource Participation
- GHG Accounting

Post-Day Ahead

- Transfer revenue allocation
- Settlements

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Participation Framework

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Participation Framework in EDAM

- WEIM entities (BAA) can voluntarily elect to extend participation to the EDAM.

- WEIM participation is a pre-requisite for participation in EDAM.

- Proposal to align the WEIM exit provisions with EDAM
  - 6-month exit notice period (allows for WEIM and EDAM simultaneous exit)
  - No fees for exiting the EDAM (nor WEIM)

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Transitional Measures

- WEIM today has transitional measures that protect against unexpected reliability or market outcomes that arise during participation.

- Proposal extends WEIM transitional protection measures to the EDAM.

- Onboarding measures:
  - *Implementation date change* – ability to move date due to lack of readiness.

  - *Temporary suspension of EDAM participation* – 60-days of onboarding can suspend participation due to market or operational issues.

  - *Extended price correction authority* – substituting last economic bid for what otherwise would have been parameter price.
    - ISO seeks feedback on need for this measure during EDAM onboarding.

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Transitional Measures

- Ongoing measures (beyond onboarding period):
  - *Disruption and interruption of participation in the market* – may be triggered if operational circumstances have or are likely to cause abnormal conditions that require immediate action to maintain system reliability.
    - Example: transmission outage that isolates a BAA from rest of footprint.

- The ISO will conduct an expedited process for addressing either policy design or adverse impacts that may arise.
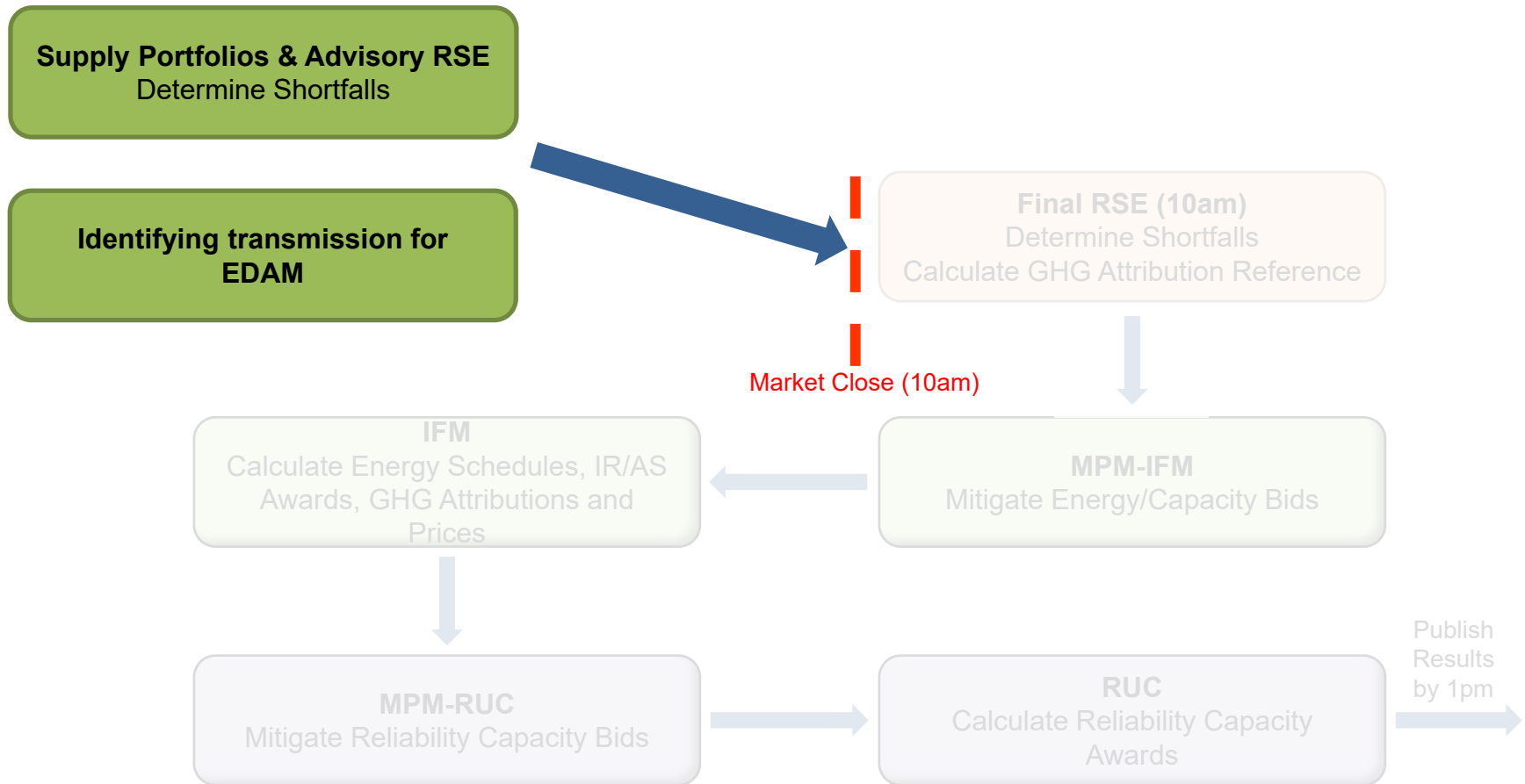
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Resource participation in EDAM

- In EDAM, all resources participate in the market.

- Resources will submit economic bids or self-schedules into the market and be settled through the market.

- Resources would be represented by a scheduling coordinator in the market (could be the EDAM entity) or a different scheduling coordinator.

- An entity can self schedule their supply into the market and exercise their existing transmission rights.
    - Derives a similar result to "base scheduling" in WEIM
    - Settled through the market

EDAM

Pre-Day Ahead Market Activities

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Pre-Day Ahead Market Close Processes

Supply Portfolios & Advisory RSE
Determine Shortfalls

Identifying transmission for EDAM

Final RSE (10am)
Determine Shortfalls
Calculate GHG Attribution Reference

Market Close (10am)

IFM
Calculate Energy Schedules, IR/AS Awards, GHG Attributions and Prices

MPM-IFM
Mitigate Energy/Capacity Bids

MPM-RUC
Mitigate Reliability Capacity Bids

RUC
Calculate Reliability Capacity Awards

Publish Results by 1pm

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ISO Public

EDAM

Pre-Day Ahead Market Activities:

Resource Sufficiency Evaluation (RSE)

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The EDAM RSE will be conducted through an application that optimally determines if a feasible BAA specific day-ahead operating plan exists

- The application is on-demand and has pre-set advisory runs that start at 6:00 and 9:00 AM

- Utilizes the resource bids made available by each BAA
  - Uses ISO market optimization and existing resources models

- Evaluates bid-in supply against demand forecast and uncertainty requirements
  - Demand forecast can be provided by ISO or an EDAM BAA
  - Uncertainty requirements will be calculated by the ISO

- Does not consider transmission constraints
  - ISO will monitor and report on infeasible RUC results as compared to EDAM RSE showings. The comparison will identify if undeliverable supply is being shown for purposes of passing the EDAM RSE

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Propose to account for all different supply types used by EDAM BAAs in a manner that instills confidence

- The proposal is consistent with the principle to count supply that western LSEs rely upon to meet their resource adequacy and resource planning programs

- For supply resources to count, bids will be required

- There will be additional rules for and discussion of the following supply types:
  - Non-source specific – WSPP
  - Non-source specific – CAISO BAA intertie bids
  - Highlight treatment of gas resources
  - Demand response

California ISO

Proposing to account for non-resource specific supply contracts (WSPP Schedule C)

- All supply contracts will be required to identify the source BAA prior to running the EDAM
  - Increases efficiency and accuracy of EDAM market results
- If the source BAA is within the EDAM footprint, the ISO will assume supply is being sourced from within the specified BAA
  - Will model as a bucket 1 transfer from source to sink BAA
  - Market results and potential prices in source BAA may be impacted due to this modeling assumption
  - Modeling as a bucket 1 transfer will consume transmission capacity
- If the source BAA is external to the EDAM footprint, the ISO will model the scheduled MW to DGAP for the purpose of running the market

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Proposing to require day-ahead e-tags no more then 3-hours after publication of the EDAM market results for non-resource specific supply

- The day ahead e-tags increase confidence in the non-resource specific supply contracts used in the EDAM

- Non-tagged schedules will be required to submit e-tags, or otherwise cure shortfall, by the start of the STUC horizon for the hour in which the failure occurred

  – Failure to meet these requirements results in the removal from WEIM pooled RSE. Effectively, this increases the burden of passing the WEIM RSE for the deficient BAA through limiting access to imbalance reserves that were procured assuming a diversity benefit

- Propose reporting on an EDAM BAA failures to submit e-tags

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Propose to count bids made at the CAISO BAA border that meet the following criteria in the EDAM RSE

- Intertie bids associated with a resource adequacy contract
- Intertie bids associated with a forward contract, but not otherwise shown as part of a resource adequacy supply plan
- Intertie bids originating from resources that are pseudo-tied with the ISO BAA
- Intertie bids originating from dynamically scheduled resources into the ISO BAA
- Intertie bids originating from a *non-dynamic resource –specific system resource*

The objective is to provide equivalent treatment between EDAM BAAs and the CAISO BAA by only counting supply that has a contractual relationship with sink BAA

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Proposing that EDAM account for demand response programs that can participate in the market as well as demand response programs that are not able to be dispatched by the market

- Demand response can participate in the market through the existing proxy demand response (PDR) and reliability demand response (RDRR) models

- Demand response can indirectly participate in the EDAM and be used to pass the EDAM RSE through load modifications

  - Load modifications should be made based on expected real-time use

  - Proposing load bidding / RUC forecast rules to ensure the EDAM does not clear transfers that circumvent the need to utilize demand response that allowed a BAA to pass the EDAM RSE

California ISO

Propose to make the D+2 market results available to relevant parties to address the misalignment between the EDAM and day-ahead gas nomination timelines

- EDAM BAAs may have to make assumptions regarding expected dispatch of gas resources prior to running the EDAM market
  - Partially mitigated by intra-day gas markets
  - Partially mitigated by gas storage
- The ISO believes the D+2 market run may provide a reasonable estimate of day-ahead gas nomination requirements
  - The ISO will work with market participants to increase bid quality and forecast accuracy to enhance D+2 market results

Propose that EDAM BAAs that fail the EDAM RSE are cured through the EDAM market through an administrative surcharge

- Surcharge set at:

$$\max(PV, Mid - C\ (\ hub\ price)) * 16 - hours * maximum\ hourly\ deficiency$$

- As proposed the surcharge approximates day-ahead bilateral prices
  - The objective is to ensure that the EDAM is not able to be utilized to avoid day-ahead procurement

- Propose to avoid a double charge by refunding administrative surcharges for failure hours that are settled through the market

- Revenue derived from the surcharge would be allocated pro-rata to net EDAM exporting BAAs

California ISO

Propose that if an EDAM BAA remains deficient following the completion of the EDAM process:

- The deficient BAA will be excluded from the WEIM pooled RSE

  – This proposal effectively raises the burden for the deficient BAA to pass the WEIM RSE

- EDAM transfers to the deficient BAA would have lower manual priority in real-time

  – If the real-time market is unable to fully solve, EDAM export transfers to the deficient BAA could be manually curtailed prior to EDAM BAA load

- Propose to monitor to determine if administrative surcharge is set correctly to prevent misuse

- The ISO requests feedback on if proposed surcharge should vary based on size of failure

The EDAM and WEIM RSE designs need to be coordinated to ensure the correct incentives

- The proposal automatically attempts to cure deficiency through the EDAM
  - Does not allow a BAA to intentionally avoid forward/day-ahead procurement in day-ahead blocks to cure at hourly consequence in the WEIM

- WEIM RSEE Phase 2 is currently in process
  - Initiative looks to create assistance energy product to cure deficiencies in the WEIM real-time market
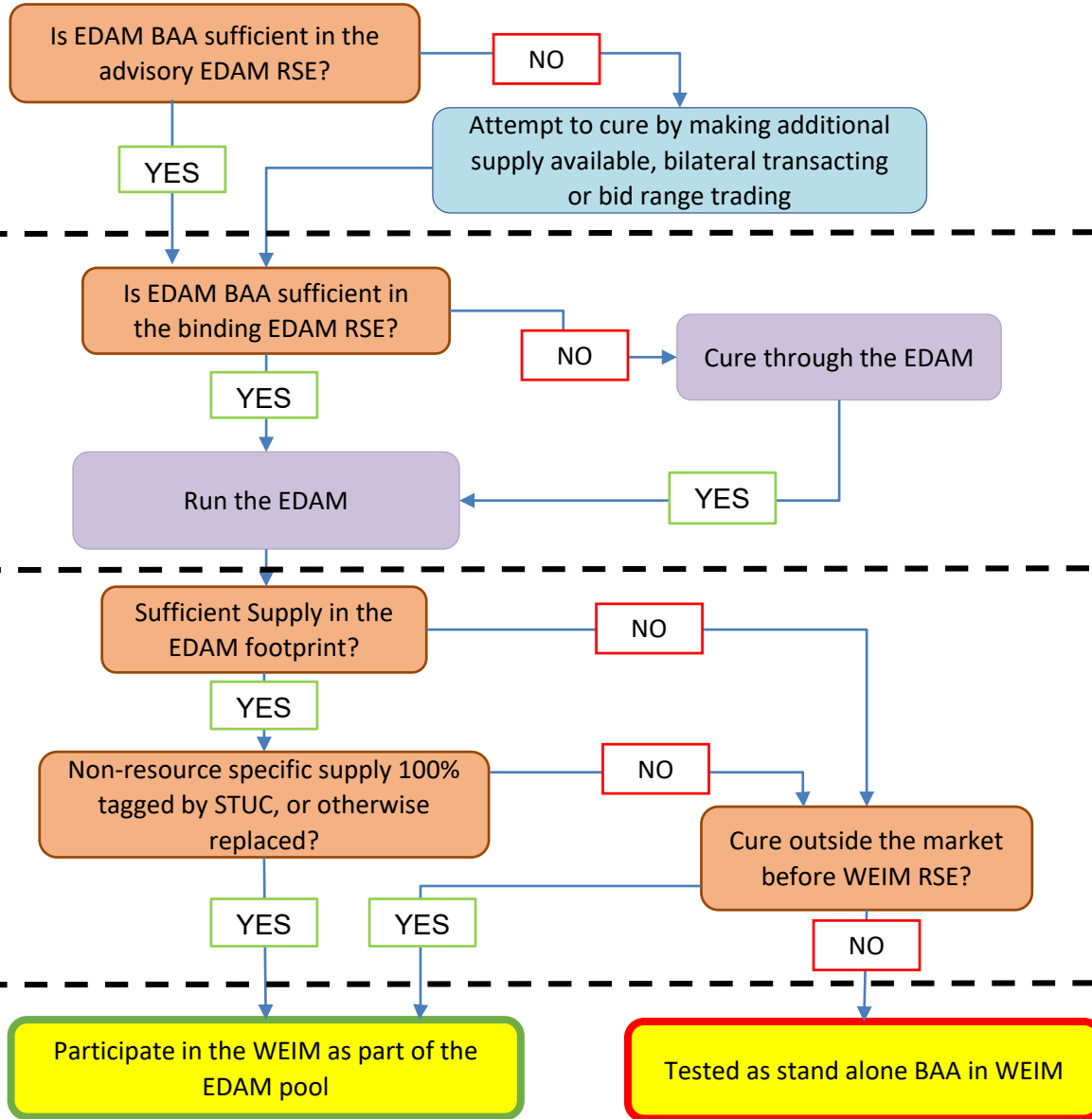
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EDAM – to – WEIM RSE

Pre Day-Ahead

Is EDAM BAA sufficient in the advisory EDAM RSE?

NO → Attempt to cure by making additional supply available, bilateral transacting or bid range trading

YES

EDAM Process

Is EDAM BAA sufficient in the binding EDAM RSE?

NO → Cure through the EDAM

YES

Run the EDAM ← YES

Intra-day

Sufficient Supply in the EDAM footprint?

NO

YES

Non-resource specific supply 100% tagged by STUC, or otherwise replaced?

NO

Cure outside the market before WEIM RSE?

YES   YES   NO

WEIM

Participate in the WEIM as part of the EDAM pool

Tested as stand alone BAA in WEIM

California ISO

ISO Public

Page 29

Proposing to stand up a bid-range trading platform

- Allows EDAM BAA's to work together to make residual supply and transmission available to facilitate offsetting requirements in the EDAM RSE prior to running the market
  - Benefits the source BAA through allocation of 100% of the transaction revenue as compared to curing through the EDAM market

	BAA 1	BAA 2	BAA 3
BAA IRU Up Requirement	1000	150	400
BAA1 – BAA 2 Trade	-50	50	-
BAA1 – BAA 3 Trade	-200	-	200
BAA2 – BAA 3 Trade	-	-	-
Final IRU Requirements	750	200	600

Allocation of the EDAM deficiency surcharge will be at the discretion of each EDAM BAA

- The CAISO BAA will utilize a two tiered allocation that adheres to cost causation principles
  - Compare EDAM RSE supply offers against RA requirements to determine if the shortfall was caused by a specific LSE's failure to meet its RA obligations; allocate surcharge to deficient LSE if justified
  - If the market bids meet RA requirements in full, propose to allocate surcharge pro-rata based on metered demand
- This design may impinge on the existing RA rules that incentive and penalize LSE failures to meet their RA obligations

Proposing all EDAM BAAs that pass the EDAM RSE are tested in the WEIM RSE together as a pool

- The diversity benefit is created by offsetting uncertainty requirements due to a larger, more diverse, geographic footprint
    - Results in less imbalance reserve procurement for each BAA if the WEIM RSE tests each BAA in a stand alone manner

- Participation in the pooled WEIM RSE creates incentives for EDAM BAA's to participate with, and submit e-tags on, real supply

Full Diversity Benefit Example

	Imbalance Requirement	Diversity Benefit	New Requirement
BAA 1	1000	400	600
BAA 2	2000	800	1200
BAA 3	750	300	450
Footprint	3750	1500	2250

* 1500 MW Diversity benefit allocation

	EDAM Schedules*	EDAM Imbalance Reserve Schedules*	WEIM Forecast	Pooled WEIM RSE Forecast	Pooled WEIM RSE Schedules	Pooled WEIM RSE
BAA1	10000	600	10200	28950	29250	Passed
BAA2	8000	1200	9000	28950	29250	Passed
BAA3	9000	450	9750	28950	29250	Passed

**The allocation of a diversity benefit reduces BAA 3's imbalance reserve procurement from 750 to 450 MW. Absent a pooled approach they would failed the WEIM RSE due to a lower procurement of upward imbalance reserves. With a pooled approach they utilize the excess 600 MW of imbalance reserves of BAA 1 and 2, resulting in the entire footprint passing

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Proposing to allocate a partial diversity benefit. This then allows for the procurement of additional imbalance reserves for the use of the EDAM footprint

- Addresses a stakeholder concern that imbalance reserves are only being procured to 97.5% upward uncertainty level

- Creates additional incentive to pass the EDAM RSE and submit e-tags on day-ahead non-resource specific supply

- Configurable parameter. Propose to start with higher procurement across the EDAM footprint with the ability reduce shared IRU procurement in coordination with EDAM BAAs as entities gain experience with EDAM operation

Partially withheld diversity benefit example

	Imbalance Requirement	Partial Diversity Benefit	MSSC Holdback	EDAM IRU Procurement
BAA 1	1000	390	-195	805
BAA 2	2000	810	-405	1595
BAA 3	750	300	-150	600
Footprint	3750	1500	-750	3000
* Diversity Benefit 1500 MW; **Withheld quantity is 750 MW				

	EDAM Schedules*	EDAM Imbalance Reserve Schedules*	WEIM Forecast	Pooled WEIM RSE Forecast	Pooled WEIM RSE Schedules	Pooled WEIM RSE
BAA1	9300	805	10200	29700	29300 + 750	Passed
BAA2	8000	1595	9000	29700	29300 + 750	Passed
BAA3	9000	600	10500	29700	29300 + 750	Passed

**An outlier event combined with a generation outage between day-ahead and real-time that was not able to be replaced is cured through the sharing of residual imbalance reserves and access to holdback capacity

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The proposal posits two options for the pooled EDAM footprint following a potential failure of the WEIM RSE

Option 1: Treat the pool under the existing rules in the WEIM

- Limit incremental transfers in the direction of failure and potentially cure through assistance energy if necessary. If unable to cure, the market would relax the power balance constraint in deficient BAA. System operator actions to resolve shortfall would commence

Option 2: Test EDAM BAA's individually in the WEIM

- Isolates the BAA or BAAs whose deficiency caused the failure
- Potential for spurious failures due to lower quantities of imbalance reserves procured due to the diversity benefit

- Leaning towards option 1 due to imbalance reserve procurement being done for the footprint in the EDAM

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Consideration of Additional Mechanisms to Manage Supply in Excess of RSE and net Export Transfer Limits

- The revised straw proposal introduced consideration of additional mechanisms for EDAM BAAs to manage how their supply is utilized by the market.

- Driven by desire of some stakeholders to have the ability to manage how their supply was utilized in the EDAM.

- Mechanism 1 – Managing supply in excess of RSE.

- Mechanism 2 – a net EDAM transfer export limit.

- The mechanisms, functionality, could be made available to all EDAM BAAs.

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Managing supply in excess of RSE requirement

- EDAM entities have the discretion to retain excess supply, above what is needed to pass the RSE, for availability during stressed reliability conditions.
  - Incentive to offer excess supply into market, but have ability to retain excess supply.

- CAISO LSEs under the RA program have a must offer obligation into the market for RA supply, limiting ability to reserve excess supply for dispatch during stressed system conditions.

- The proposal considers a mechanism under which excess CAISO RA supply can be reserved for further responding to stressed conditions where uncertainty materializes between day ahead and real-time.

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Reserving Supply in Excess of RSE Requirements

- The mechanism would permit CAISO LSEs the ability to indicate whether, if the offered RA supply is in excess of the RSE needs, the supply should be reserved for reliability needs.

- LSEs would continue to fully bid and offer their supply into the market, but would have ability to indicate in bid whether to reserve the supply if it is in excess of RSE.
  - The bid would not be carried into the IFM.

- The reserved supply would be available for exceptional dispatch between day ahead and real time.

- If the excess reserved supply is ultimately not exceptionally dispatched (conditions did not materialize), the supply reverts to the LSE to offer into the real-time market.

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Net EDAM Export Transfer Limit

- The net EDAM export transfer limit is a potential constraint that would allow EDAM BAAs to limit net export transfers out of its BAA as a further reliability tool.
  - Allows EDAM entity to manage volume of export transfers supported by internal supply.

- The limit would be based on the difference between RSE countable capacity and the RSE requirement for the EDAM BAA.

- The limit is responsive to system conditions.
  - In normal conditions the net export transfer limit would likely be high.
  - In stressed conditions, the net export transfer limit would likely be lower as all supply is needed for RSE.

- The EDAM entity would have the discretion when to trigger the limit and to set a limit beyond the minimum threshold.

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EDAM

Pre-Day Ahead Market Activities:

Transmission Availability to EDAM

California ISO

EDAM Transmission Framework

Bucket 1 Transmission
- Firm or Conditional Firm transmission rights
- Supports delivery of supply across EDAM interfaces for RSE purposes
- Made available by Transmission Customer by 9 a.m. (day-ahead)
- Receives transfer revenue

Bucket 2 Transmission
- Firm or Conditional Firm transmission rights
- In excess of transmission needed to support RSE
- Made available by Transmission Customer by 10 a.m. (day-ahead)
- Receives transfer revenue

Bucket 3 Transmission
- Unsold Firm ATC
- Made available by Transmission Provider by 10 a.m. (day-ahead)
- Cost recovery through historical TRR recovery in EDAM
- Receives transfer revenue

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Transmission Rights Respected in EDAM

- The EDAM will support exercise of OATT transmission rights in the day ahead market held by transmission customers.
    - To the extent transmission rights are not exercised, those would be made available to the market (but could be exercised in real-time).
    - These could also be released to the market ahead of the day ahead market (pathway 2 discussed later).

- Legacy transmission contracts (pre-OATT) can continue to be exercised under the terms of the agreement.
    - Coordination between transmission provider and contract holder.
    - Depending on terms of agreement, these could potentially be made available to the market.

Bucket 2 – Customers' Transmission Rights

- Transmission customer use of transmission rights:

  - *Pathway 1* – can utilize transmission rights by 10am, day ahead.
    - Receive day ahead transfer revenue through EDAM entity.

  - *Pathway 2* – can release the transmission rights to EDAM by 6am.
    - Receive transfer revenue from ISO directly.
    - Can continue to self schedule or economically bid in real-time (but not associated with use of transmission rights)
    - Limited to long term rights

  - *Pathway 3* – unscheduled transmission (by 10am) is made available to EDAM.
    - Can exercise previously unscheduled rights between day ahead and real time.
    - Accommodate exercise of rights if feasible (i.e., derates, market infeasibility).
    - Day ahead transfer revenue (associated with unscheduled transmission) settled with EDAM entity who may net out uplifts associated with exercise of rights.

- Legacy transmission contracts (pre-OATT) can continue to be exercised under the terms of the agreement.
  - Pathway 2 may be available based on terms of agreement.
  - Pathway 3 may not be applicable and unscheduled rights would not be in market.

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Bucket 3 - Transmission Cost Recovery without Hurdles in Optimization

- Bucket 3 transmission will be available to the EDAM hurdle free.

  - Eliminating the hurdle rate will increase market efficiency and the overall benefits.

  - Foregone revenues with bucket 3 transmission, including short term firm ATC, would be eligible for cost recovery within the calculation.

- Bucket 3 transmission would also receive transfer revenue associated with the transmission made available.

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Transmission Cost Recovery

EDAM Straw Proposal allows for the recovery of an EDAM recoverable TRR that consists of:

1. Revenues associated with the short-term firm and non-firm point-to-point products for OATT Customers

– Foregone reduction in wheeling access charge (WAC) revenues in the ISO

2. Revenues on approved new transmission builds that increase transfer capability between EDAM BAAs

3. Revenues for wheeling-through volumes for EDAM BAAs that exceed the total imports/exports from the EDAM entity BAA.

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Transmission Recovery Component 1: Calculating the EDAM Recoverable TRR

- For EDAM entities operating under the OATT, the EDAM recoverable TRR is the historical transmission revenue requirement for short-term firm point to point and non-firm point to point transmission

- For the ISO, the EDAM recoverable TRR is the total historical WAC revenues associated with third parties.

- Two key questions regarding calculation of the EDAM recoverable TRR:
    - (a) across what time period is the gross at risk TRR derived?
        - Three years historical data
    - (b) how often is the gross at risk TRR value updated?
        - Updated after 2 years

	Total TRR	Non-Firm TRR (3rd party)	Short-term Firm TRR (3rd parties)	EDAM Recoverable TRR (for EDAM)	Ratio (EDAM recoverable TRR / Total TRR)
EDAM Entity (OATT)	$100 Million	$3 million	$4 million	$7 million	7%

Bound to Gross TRR

- Seek feedback of a bound to the gross TRR recoverable through the EDAM based upon the EDAM transfer flows.
  - Goal: a bound would avoid shifting of costs to the EDAM disproportionately compared to the use of the EDAM entity system to support EDAM transfers.

- Limit the EDAM recoverable TRR by comparing EDAM transfer exports (energy transferred) out of the EDAM BAA and total exports (energy exported to EDAM and non-EDAM BAAs).

$$TRR\ Bound = \frac{EDAM\ Transfer\ Use\ (MWh)}{Total\ Exports\ (MWh)} \times EDAM\ Recoverable\ TRR$$

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Netting Transmission Sales

- The total revenues recoverable through the EDAM consist of the difference between the EDAM recoverable TRR, which is based on historical values and the actual transmission revenues collected through transmission sales of the products eligible for recovery.

- Formula below illustrates further the example of the TRR shortfall recoverable through the EDAM.

$$TRR\ Shortfall = EDAM\ Recoverable\ TRR\ (historical) - Actual\ transmission\ revenues$$

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Component 2: Percentage of New Transmission Build Revenue Requirement

- New transmission builds raise the potential of foregone transmission revenues associated with non-firm and short-term firm transmission sales.

- recoverable to the EDAM is limited to the ratio of the non-firm and short-term firm point to point revenue requirement.

- If the upgrade adds $50 million to the total TRR, and the historical percentage of sales was 7%, then the amount recoverable through the EDAM is 7% of that amount, a total of $3.5 million.

	Total TRR	Non-Firm TRR (3rd party)	Short-term Firm TRR (3rd parties)	EDAM Recoverable TRR (for EDAM)	Ratio (EDAM recoverable TRR / Total TRR)
EDAM Entity (OATT)	$100 Million	$3 million	$4 million	$7 million	7%

California ISO

Component 3: Recovery of Transmission Costs Associated With Significant EDAM Wheeling Through

- The proposal is that in those limited periods where this net difference occurs, the EDAM entity be compensated for the excess transmission use supporting net wheels through its system.

- The wheels through the EDAM entity system created benefits for other EDAM BAAs but not for that entity.

- The volume of net wheels through the EDAM entity transmission system, net of EDAM transfer imports/exports, would be compensated at the EDAM entity's filed and approved non-firm hourly point to point transmission rate.

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Transmission Cost Assignment

- Two Options to apply the uplift rate:
    1. to gross load across the footprint or
    2. to demand plus supply across the footprint.

- In allocating this uplift charge, the proposal is not to allocate an EDAM entity its own TRR revenue shortfall so its metered demand does not have to pay for its TRR cost recovery.

CAISO BA Transmission in EDAM – RSE

Entities relying on resources wheeled through or export from the ISO to meet the EDAM RSE would have the following pathways:

1. Wheeling through the ISO system – entities would demonstrate establishment of a wheeling through priority across the ISO system and bring Bucket 1 transmission to the EDAM across the interface

2. Exports from the ISO system – entities would demonstrate establishment of high priority export status to export non-resource adequacy supply

- The WAC charges would be assessed for the period that the high priority export is being shown for the RSE.

CAISO BA Transmission – Other Buckets

- Bucket 2 transmission on the ISO system is primarily associated with legacy contracts
  - could be made available to the market based upon the terms of the agreement

- Bucket 3 consists of the remaining transmission on the ISO system, which is unreserved and unsold
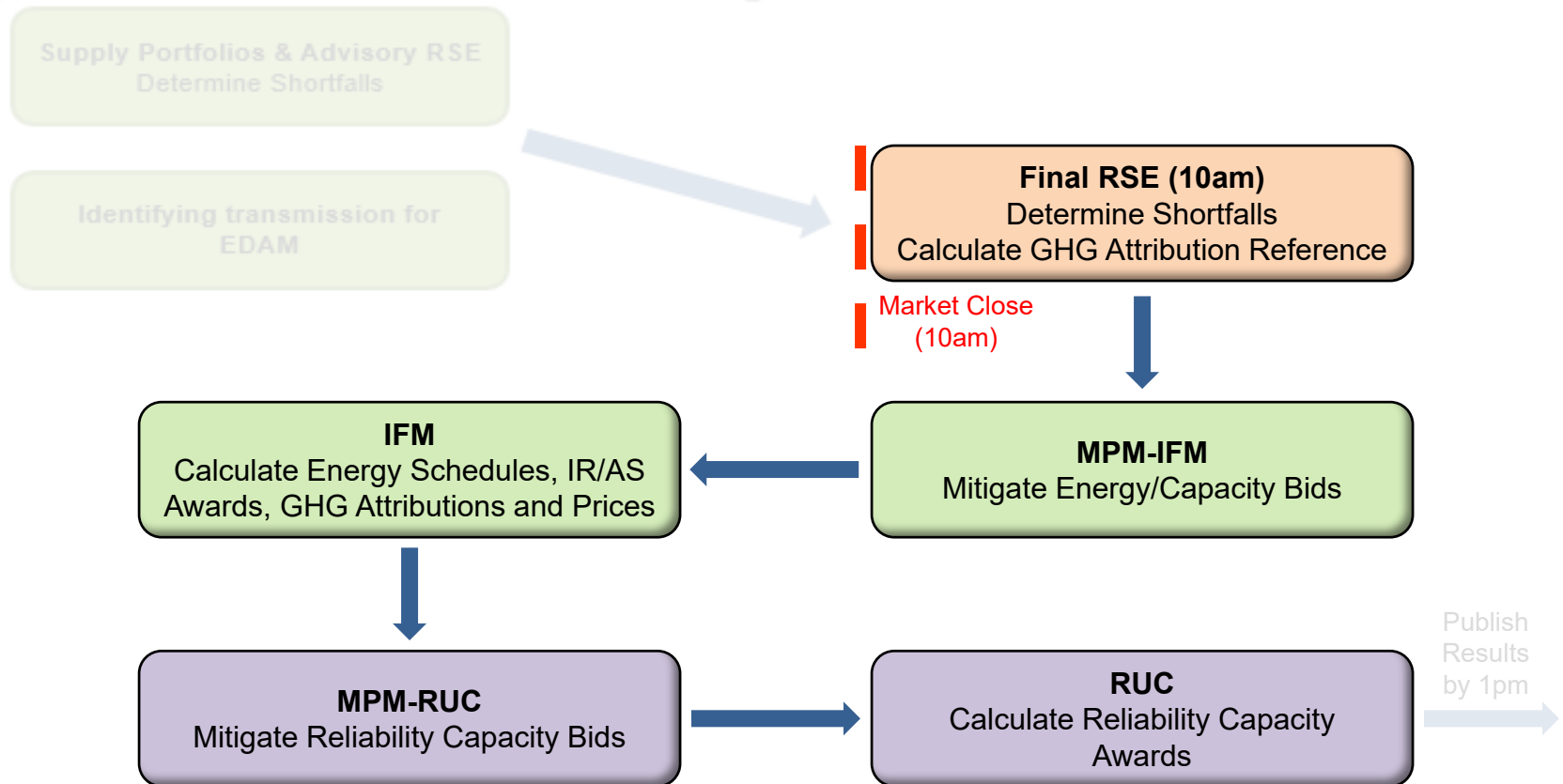 - TRR recovery proposal allows for the recovery of the shortfall associated with historical WAC revenues

California ISO

EDAM

Day Ahead Market Processes

Milos Bosanac, *Regional Markets Sector Manager, Market and Infrastructure Policy*

California ISO

DA Market Activities (10am -1pm)

Supply Portfolios & Advisory RSE
Determine Shortfalls

Identifying transmission for EDAM

Final RSE (10am)
Determine Shortfalls
Calculate GHG Attribution Reference

Market Close
(10am)

IFM
Calculate Energy Schedules, IR/AS Awards, GHG Attributions and Prices

MPM-IFM
Mitigate Energy/Capacity Bids

MPM-RUC
Mitigate Reliability Capacity Bids

RUC
Calculate Reliability Capacity Awards

Publish Results by 1pm

IFM Role and Function

- The IFM balances supply and demand, produces hourly unit commitment and energy schedules, procures ancillary services, and will procure imbalance reserves.
  - Note: ancillary services will not be co-optimized with energy across the footprint.

- WEIM has no demand bids; in EDAM, entities can self-schedule or economically bid demand into the day-ahead market
  - If bid-in demand clears less than the BAAs load forecast, RUC will secure "reliability capacity up" to the forecast.

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Imbalance Reserves

- An imbalance reserve product will procure 15-minute ramping capability to cover forecast uncertainty and provide intra-hour ramp capability.

  - Topic further discussed in DAME initiative.

- Imbalance reserves enhance benefits of EDAM:

  - Diversity benefit reduces each BAAs individual uncertainty requirements.
  - Builds confidence that solution coordinates capacity to address unrealized uncertainty.
  - Allows more optimal scheduling of energy and transfers by accounting for uncertainty/ramping needs.
  - Allows BAAs to meet uncertainty needs from resources across the EDAM footprint.
  - Establishes a consistent metric and treatment of uncertainty for the EDAM RSE.
  - Provides revenue opportunities for EDAM BAAs with flexible resources.

RUC Role and Function

- RUC process procures incremental and decremental capacity (reliability capacity up/down) based on the amount of physical energy that clears the IFM in relation to the BAA load forecast.

- Based on how load and virtual bids clear the IFM, absent RUC awards there may be a shortfall in meeting the forecasted demand with physical resources.

- Suppliers submit reliability capacity up/down bids and the RUC produces hourly reliability capacity awards, transfers, and prices.

California ISO

RUC Proposals

- Continue to propose that RUC remains an integral component of the EDAM.

- Continue to proposal also that all resources must submit reliability capacity bids at the same quantity as their energy bid plus ancillary service self-provision. This ensures all resources shown in the EDAM RSE are fully available for use in RUC.

  - The requirement to bid in RUC only extends to capacity shown in the RSE (and by extension to IFM) and not to all resources in the EDAM BAA.

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EDAM

Day Ahead Market Processes:

Market Power Mitigation (MPM)

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The ISO will apply the same approach used in WEIM for MPM to the EDAM

- The ISO uses market power mitigation to help guard against the potential exercise of market power mitigation.

- The ISO applies a 3-pivotal supplier methodology to determine if supply could potentially exercise market power in the WEIM market.

- If a 3-pivotal supplier test fails, the ISO will insert default energy bids for storage resources that offer relief to the binding constraint.

California ISO

The ISO is exploring changes to market power mitigation in price formation enhancements

- The ISO may think about improvements to grouping balancing authority areas while performing the three pivotal supplier test
  - Multiple areas that impact the same constraint should be considered together
  - This could reduce the instances that market power mitigation is triggered

- May apply market power mitigation to resources outside of the balancing area where a constraint is binding
  - Today market power mitigation does not do this

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EDAM

Day Ahead Market Processes:

Convergence Bidding

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Convergence bidding

- Convergence bids are purely financial bids that do not represent physical supply and demand.

- Convergence bids can only be submitted in the day ahead market.
  - Virtual supply (demand) is paid (charged) the day-ahead locational energy price and charged (paid) the 15-minute locational energy price.

- Convergence bidding is intended to minimize systemic differences between day-ahead and real-time prices.
  - Has several market benefits, notably market power protection.

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Convergence bidding transition period

- Proposing a transition period to convergence bidding in the EDAM footprint.

  - EDAM Year 1: transitional year, no convergence bidding in non-CAISO BAAs.

  - EDAM Year 2 and beyond:

    - An EDAM entity will have the option to enable convergence bidding right away or choose a 1-year transition period.

  - Convergence bidding would continue in the CAISO BAA

- Propose to monitor impact of optional convergence bidding across BAAs (as compared to footprint-wide).

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Convergence bidding transition period

- A transition period permits EDAM entities to gain experience in the market before enabling convergence bidding.

- Modeling and other implementation issues could create arbitrage opportunities.

- Lack of familiarity with convergence bidding could lead to unintended financial impacts.

- For EDAM BAAs without convergence bidding, the RSE will consider variable energy resources (e.g., wind and solar) (VERs) at their energy bids and not at their energy forecast.
  - Entities without convergence bidding cannot rely on virtual supply to make up the shortfall in VER energy bids compared to their forecasted output.

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External Resource Participation

- External resource participation refers to the ability of supply located outside of the EDAM footprint to participate in the day ahead market.

- In WEIM today, the following external resources can participate in the real-time market at the WEIM interties:
  - Pseudo tied – economically bid or self scheduled
  - Dynamically scheduled – economically bid or self scheduled
  - Otherwise contracted resources – self scheduled

California ISO

External Resource Participation in EDAM

- Propose to extend the current WEIM framework to external resource participation into the EDAM.
  - Evaluate enabling broader external resource participation structure as EDAM evolves.

- Mitigates WEIM entity reliability concerns of economic bidding of non-source specific supply at its interties.
  - Displacement of internal generation, and risk of non-performance
  - Creation of operational uncertainty

- Full external resource participation (intertie bidding) would continue to be enabled at the ISO interties with non-EDAM BAAs.
  - As is done in WEIM today.

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Confidence in Market Transfers

- Establishing confidence in market transfers is a critical design component of the overall EDAM design.

- EDAM entities make generation and transmission available to the market for optimized commitment to reliably and dependably serve load.

- Each EDAM BAA continues to maintain their role and function of managing reliability in the BAA.
  - Continue to manage different operational tools, maintain operational coordination.

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EDAM Design Elements Building Confidence in Transfers

- *Robust day-ahead resource sufficiency evaluation*
  - Diverse supply pool offered in the market helps respond to changes in conditions in footprint.
  - Failure consequences incentivize sufficiency through forward procurement.

- *Market optimization through IFM and RUC*
  - Schedules and transfers emerging out of market are feasible.
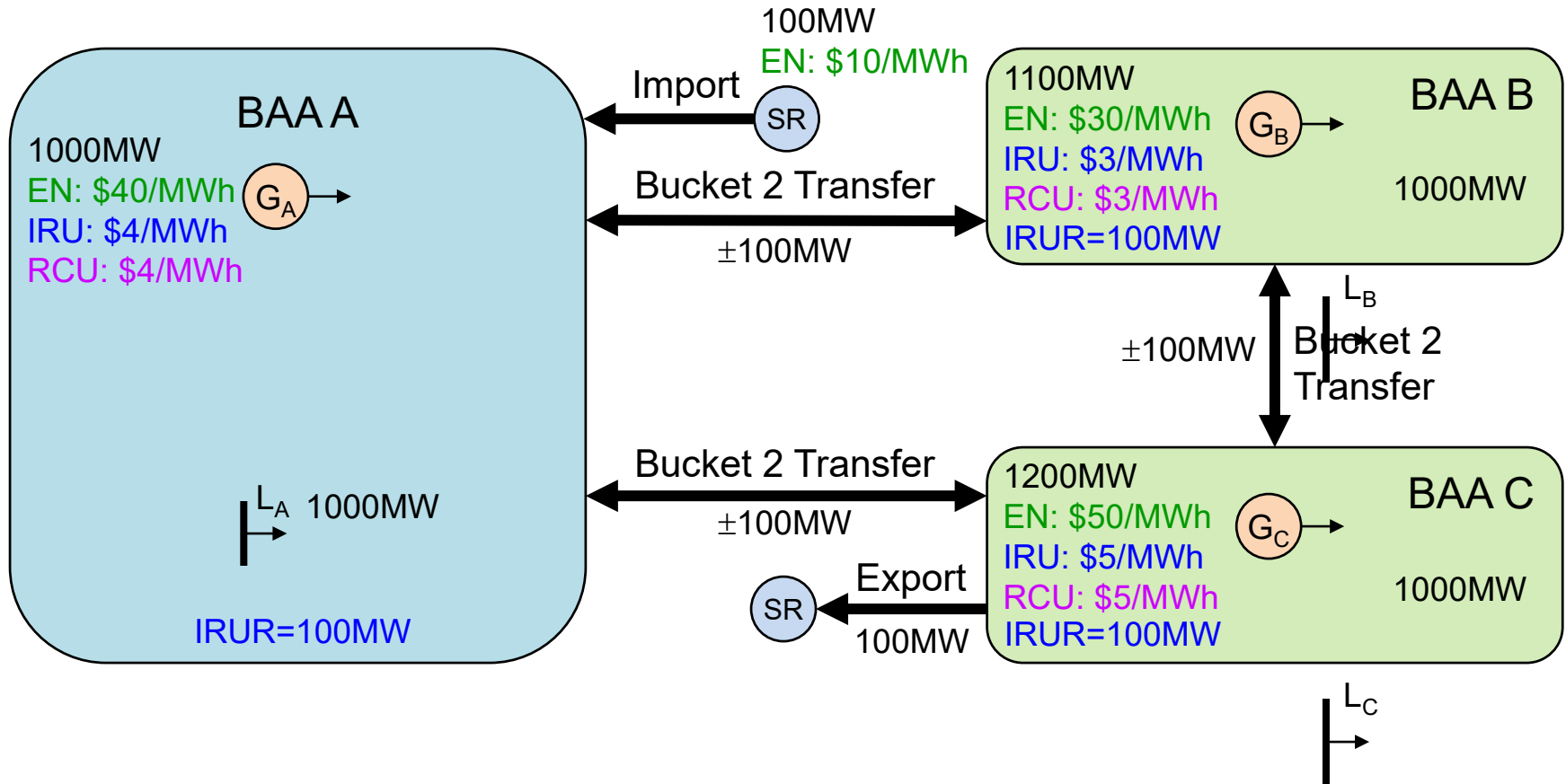 - Market will schedule transfers out of EDAM BAA only if load and uncertainty can be feasibly met.

California ISO

EDAM Design Elements Building Confidence in Transfers

- *Transmission availability in EDAM*
  - Transmission capability supporting EDAM transfers remains available in WEIM.
  - This enables transfers and counterflows when uncertainty actually materializes.

- *Imbalance reserves*
  - IFM efficiency procures imbalance reserves to cover uncertainty that may materialize in real-time.
  - This capacity is available for optimal dispatch in real-time to respond to changing conditions, uncertainty that materializes.

- *Constraint preventing propagation of BAA shortfalls*
  - The constraint will not allow simultaneously the relaxation of the power balance constraint and a net energy export transfer above what can be exported on bucket 1 energy transfers.
  - Similar constraints for imbalance reserves and reliability capacity.
  - No net export above bucket 1 if the power balance constraint is relaxed.

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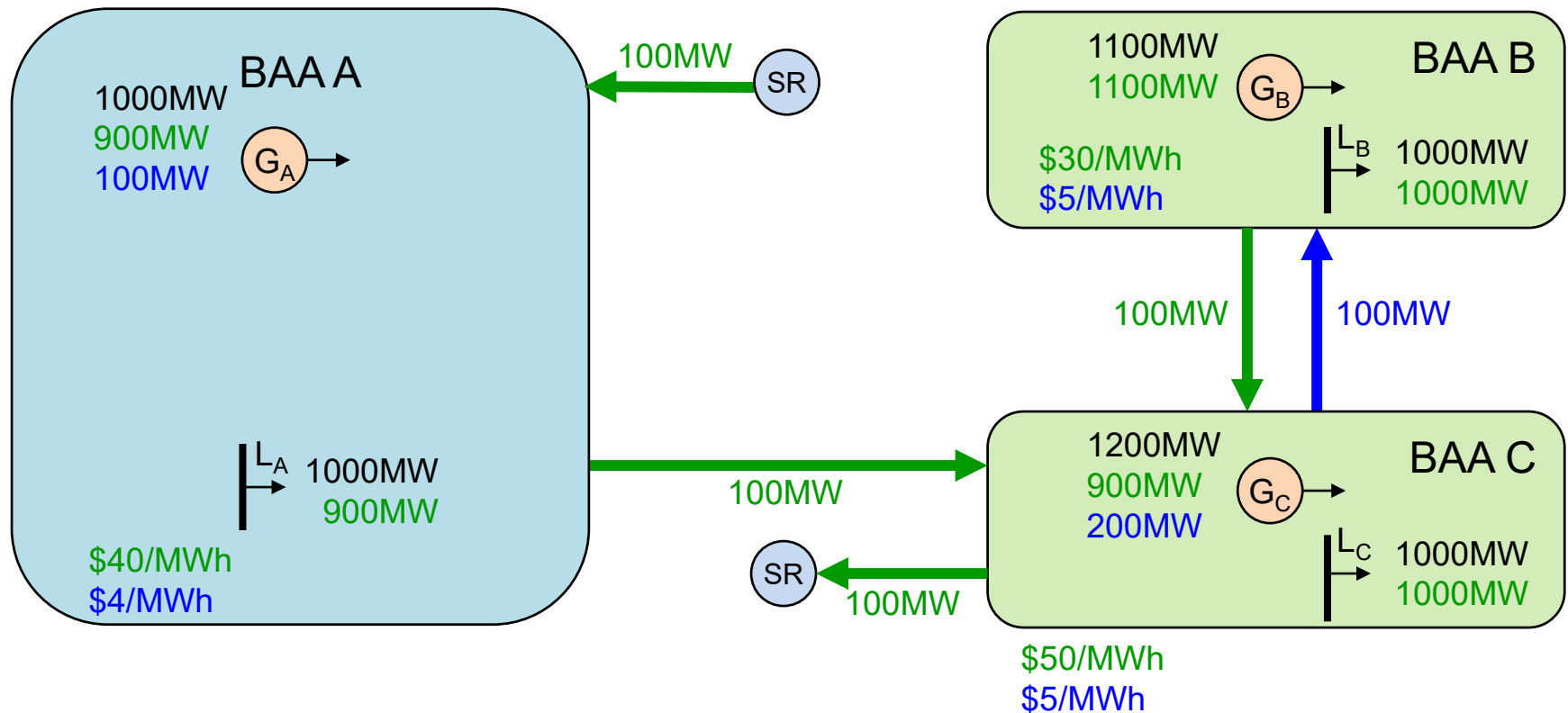# Effectuating Confidence in Transfers – Operational Timeframe

- Market design features will be able to effectively respond to changes in conditions to avoid or limit emergency conditions in a BAA.

- In limited instances, edge cases, where the market has exhausted its tool-set but a reliability condition persists, each BAA will rely on its operational tools for reliability.
  - Excess supply not in market
  - Emergency assistance, reserve sharing
  - Curtailment of lower priority transactions
  - Emergency backup supply, demand response

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EDAM Transfer Example Setup
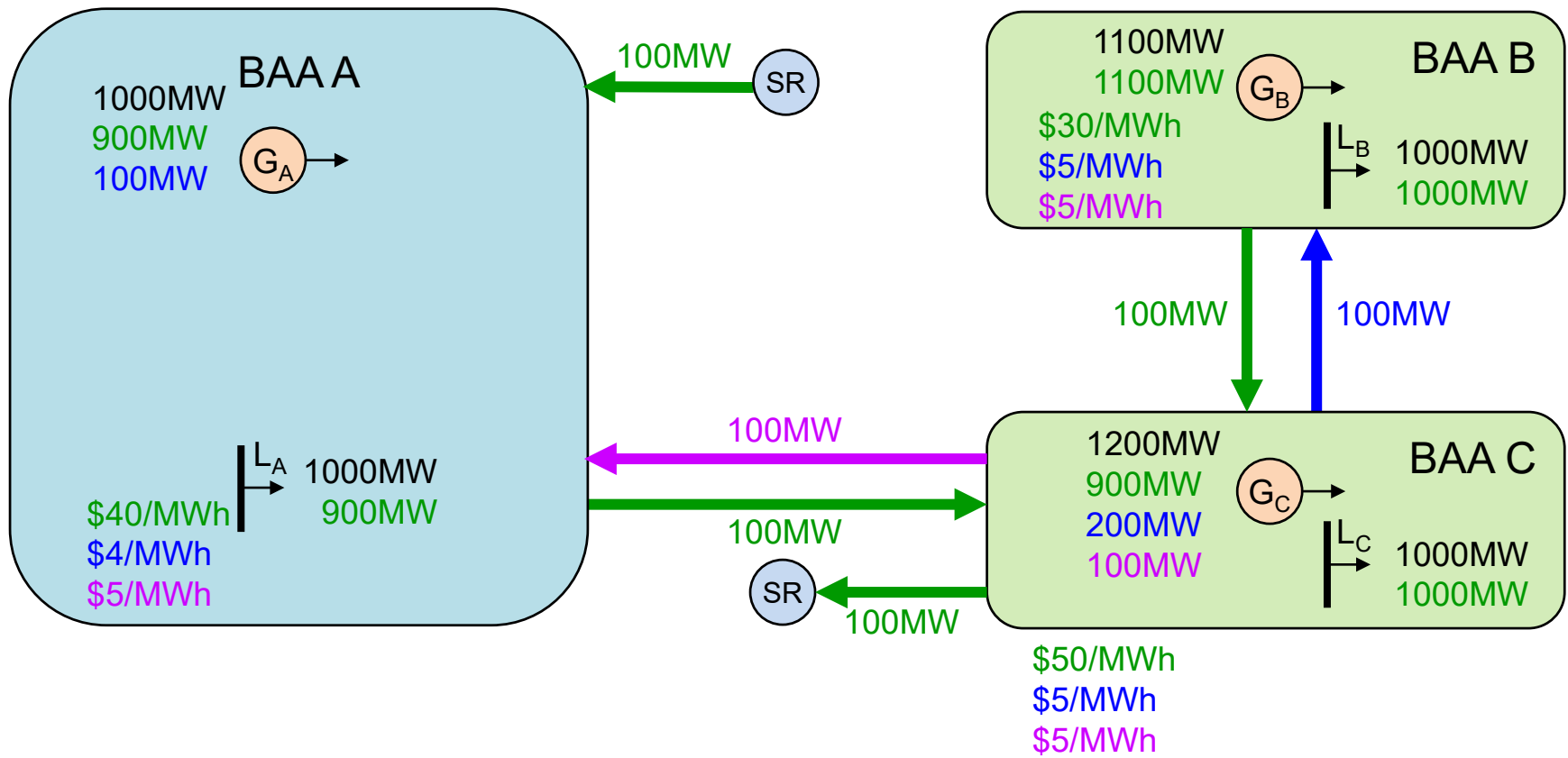## (Removing Virtual Supply from the RSP Example)

EDAM Transfer Example
# IFM Solution (L_A under-schedules by 100MW)

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EDAM Transfer Example
RUC Solution

BAA A

1000MW
900MW
100MW

G_A

L_A 1000MW
900MW

$40/MWh
$4/MWh
$5/MWh

100MW → SR

BAA B

1100MW
1100MW G_B
$30/MWh
$5/MWh
$5/MWh

L_B 1000MW
1000MW

100MW (green, down) · 100MW (blue, up)

BAA C

1200MW
900MW G_C
200MW
100MW

L_C 1000MW
1000MW

$50/MWh
$5/MWh
$5/MWh

100MW (magenta) · 100MW (green) · 100MW → SR

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WEIM Edge Case Solution – Uncertainty materialized beyond EDAM requirements and footprint is short
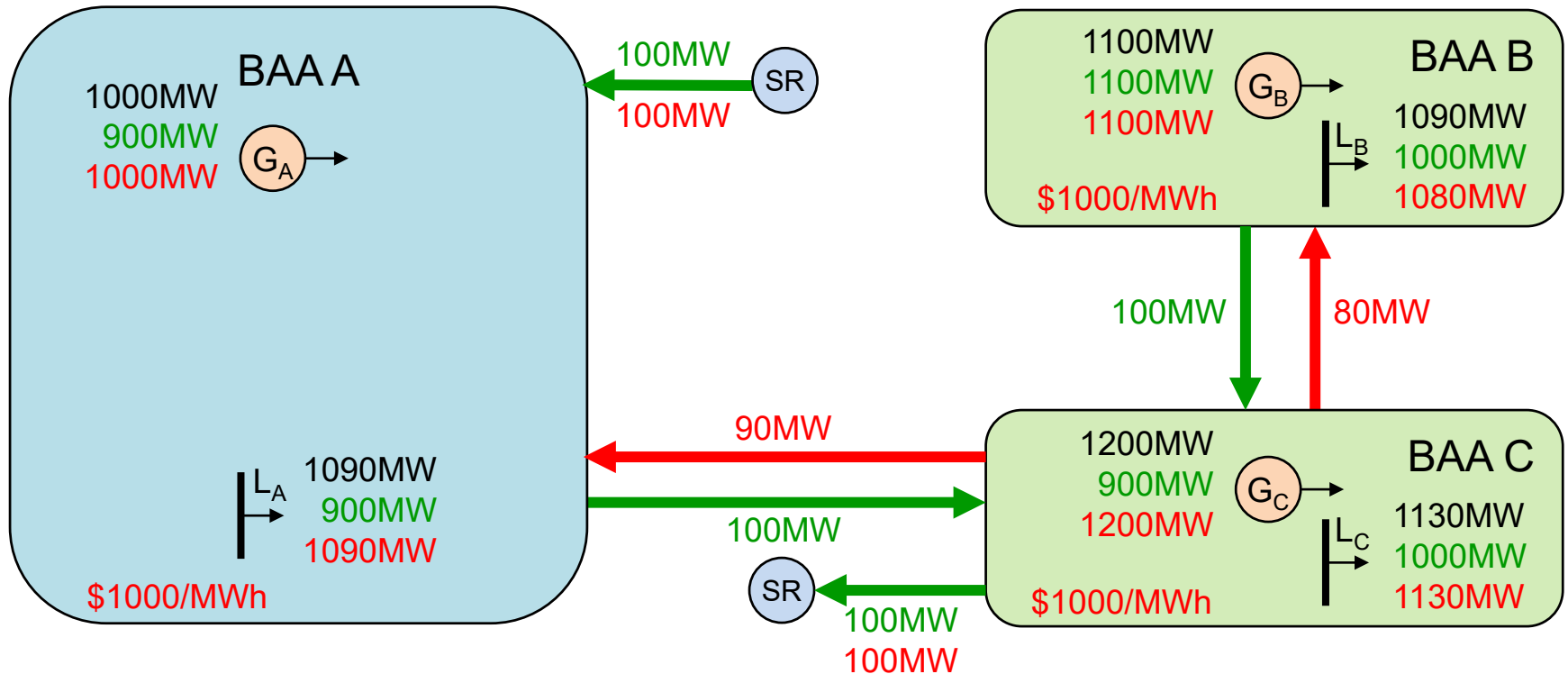
Observations on the WEIM Edge Case Example

- The EDAM optimal solution may result in energy transfer exports countered by imbalance reserve and/or reliability capacity transfer imports
  - This optimal outcome is not necessarily due to the presence of virtual schedules

- The transfer capacity for counter flow and imbalance reserve and reliability capacity awards are available in WEIM for optimal dispatch
  - In edge cases where uncertainty materializes beyond EDAM requirements, there may not be available capacity to counter flow DA energy transfers

- The PBC in BAA C will not be relaxed before dynamic transfer exports are reduced to zero

- Although the DA transfer export has equal priority with load in BAA B, it should not be cut pro rata because that would be ineffective due to a chain reduction of dynamic transfer import from BAA C

Effectuating Confidence – Equal Priority of Transfers and Load

- The proposal is that, in edge case scenarios, day-ahead market transfers be afforded <u>equal priority</u> to load.
  - Subject to operational discretion and coordination consistent with good utility practice.

- The EDAM entity effectuates equal priority through pro-rata, proportionate, curtailment of transfers and load shed in emergency, edge case, conditions.

- Operators have discretion in effectuating the priority through continued coordination with the EDAM BAA where the transfer sinks.
  - To the extent curtailment of transfer to sinking BAA would not cause reliability issues, have discretion to curtail transfer prior to load.

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Priority of Transfers to EDAM BAA Failing the RSE

- Day-Ahead transfers to an EDAM BAA that failed the day-ahead RSE could be afforded a lower priority in the operational timeframe.
    - Subject to operator discretion and good utility practice.

- In edge case conditions, an EDAM entity could curtail day-ahead transfers sinking in an EDAM BAA that fails the day ahead RSE ahead of load.

- If load shed is at risk, the operator could at its discretion curtail day-ahead transfers ahead of load through coordination with the sink BAA.

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GHG Accounting Approach at the Start of EDAM

- The proposal adopts the resource specific approach to GHG accounting at the start of EDAM.

- Stakeholders are familiar with the design as an extension of the WEIM, it is the most defined option, it requires the least amount of implementation changes, and it will require fewer regulatory changes compared to the other proposals.

- We will continue to evaluate alternate approaches for evolving the EDAM GHG accounting design in the future.

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Scalability and Adaptability

The GHG design will continue to evolve

- The resource-specific model implementation is foundational and allows for evolution to the zonal or LADWP approach, should state regulators move in that direction.

- The resource-specific model is also flexible enough to include additional constraints to reflect state climate goals that are not based on price.

  – These constraints could exclude resources with "x" emissions factor or certain resource types.

  – This would only apply to the resource specific and LADWP approaches.
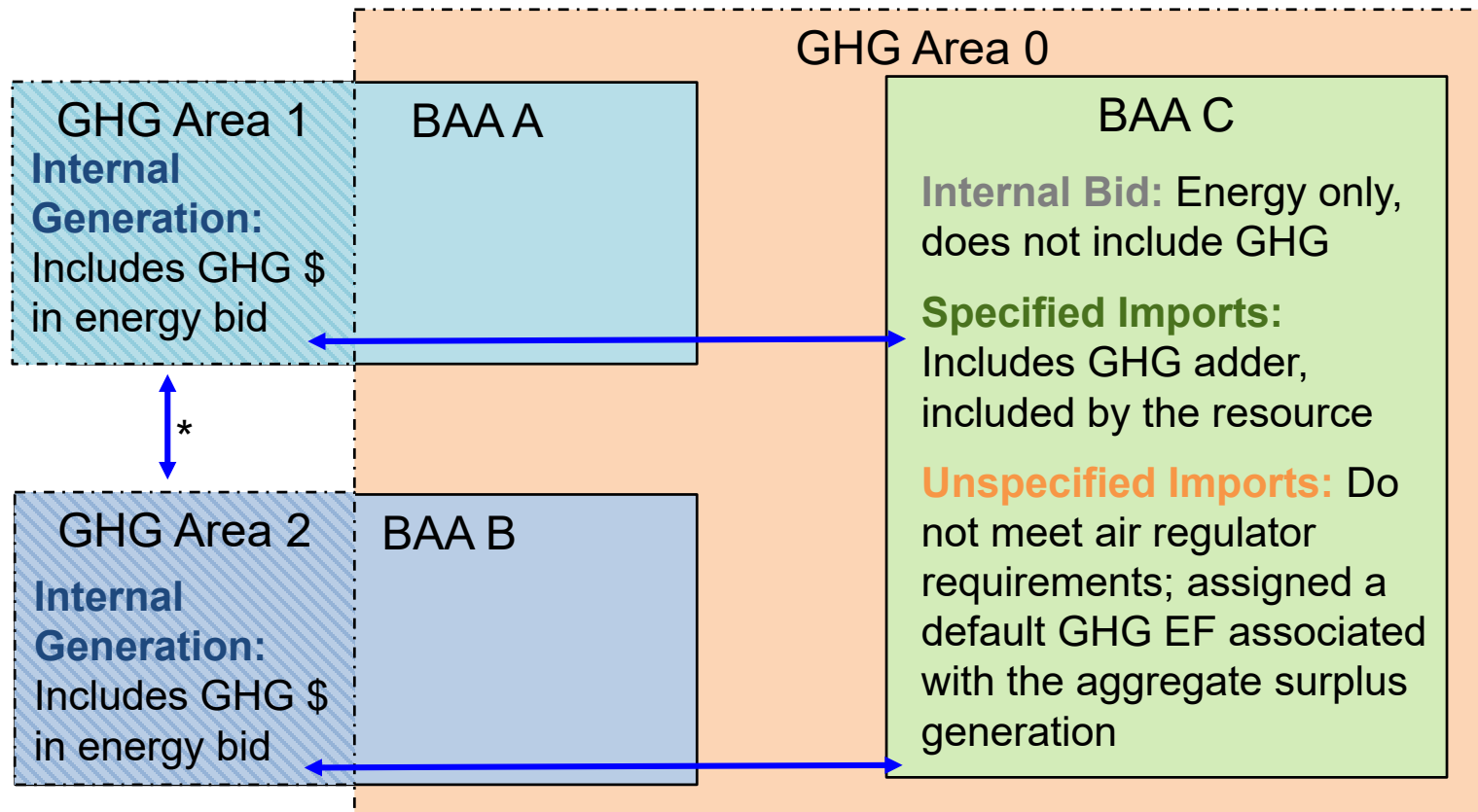
Common Elements of All of the Proposals:

1. Geographic Boundaries: The CAISO will define the GHG regulation areas based on state geographical boundaries as opposed to BAA boundaries. This will allow CAISO to reflect the costs associated with GHG pricing program compliance, but not reflect these costs in the dispatch of resources not subject to these programs

2. Treatment of resources in the RSE: Any self-schedules or bids from pseudo-tied resources that were offered from a non-GHG regulation area would be included in the RSE for a GHG regulation area

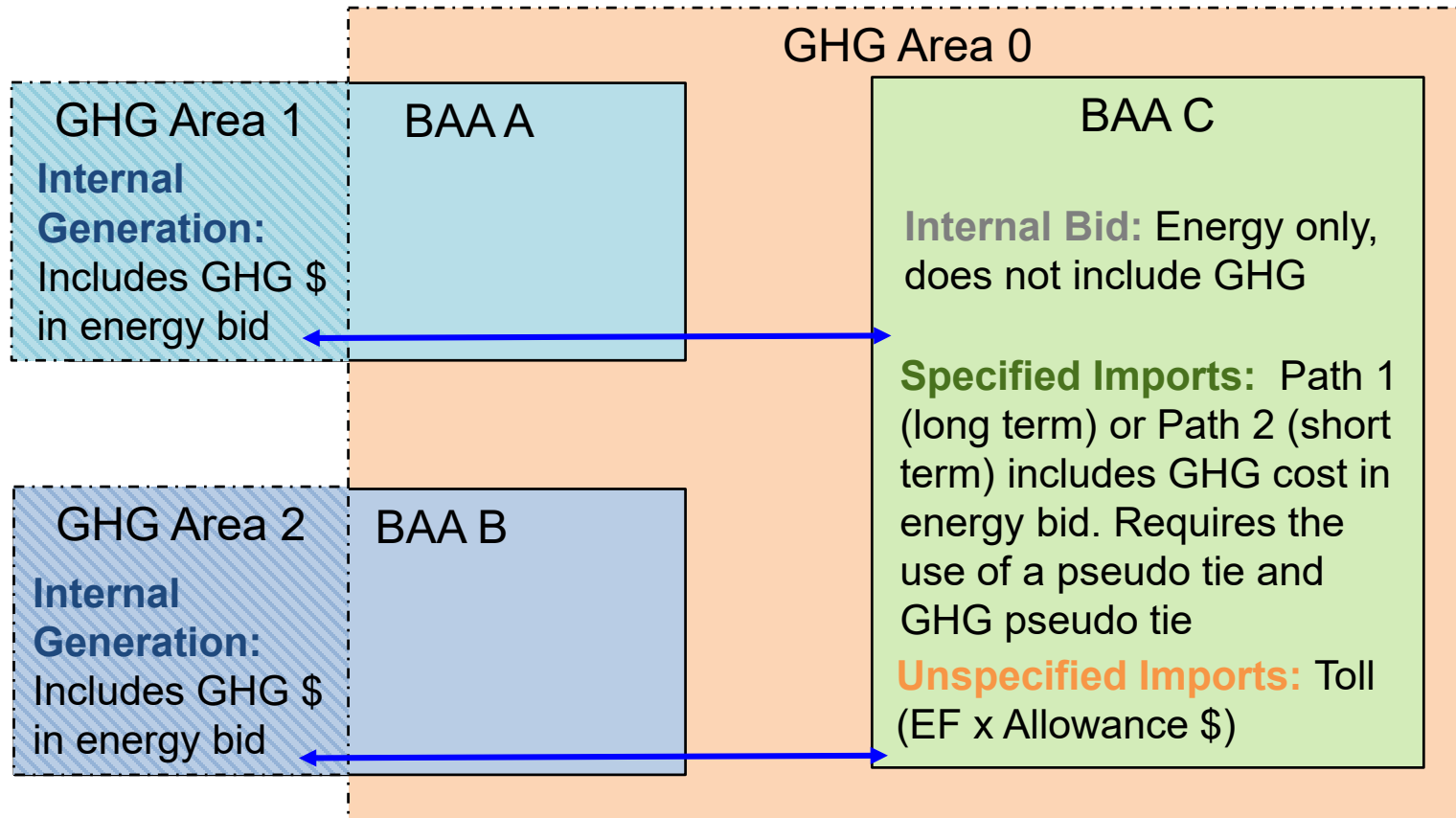California ISO

Resource Specific

An extension of the WEIM design that uses resources specific GHG bid adders to optimize GHG dispatch. Requires compliance and reporting by non-GHG regulation areas if their resources are attributed.

GHG Area 0

GHG Area 1
BAA A

Internal Generation: Includes GHG $ in energy bid

*

GHG Area 2
BAA B

Internal Generation: Includes GHG $ in energy bid

BAA C

Internal Bid: Energy only, does not include GHG

Specified Imports: Includes GHG adder, included by the resource

Unspecified Imports: Do not meet air regulator requirements; assigned a default GHG EF associated with the aggregate surplus generation

* **Between GHG regions:** unlinked (GHG bid adder); linked (energy bid includes GHG $)
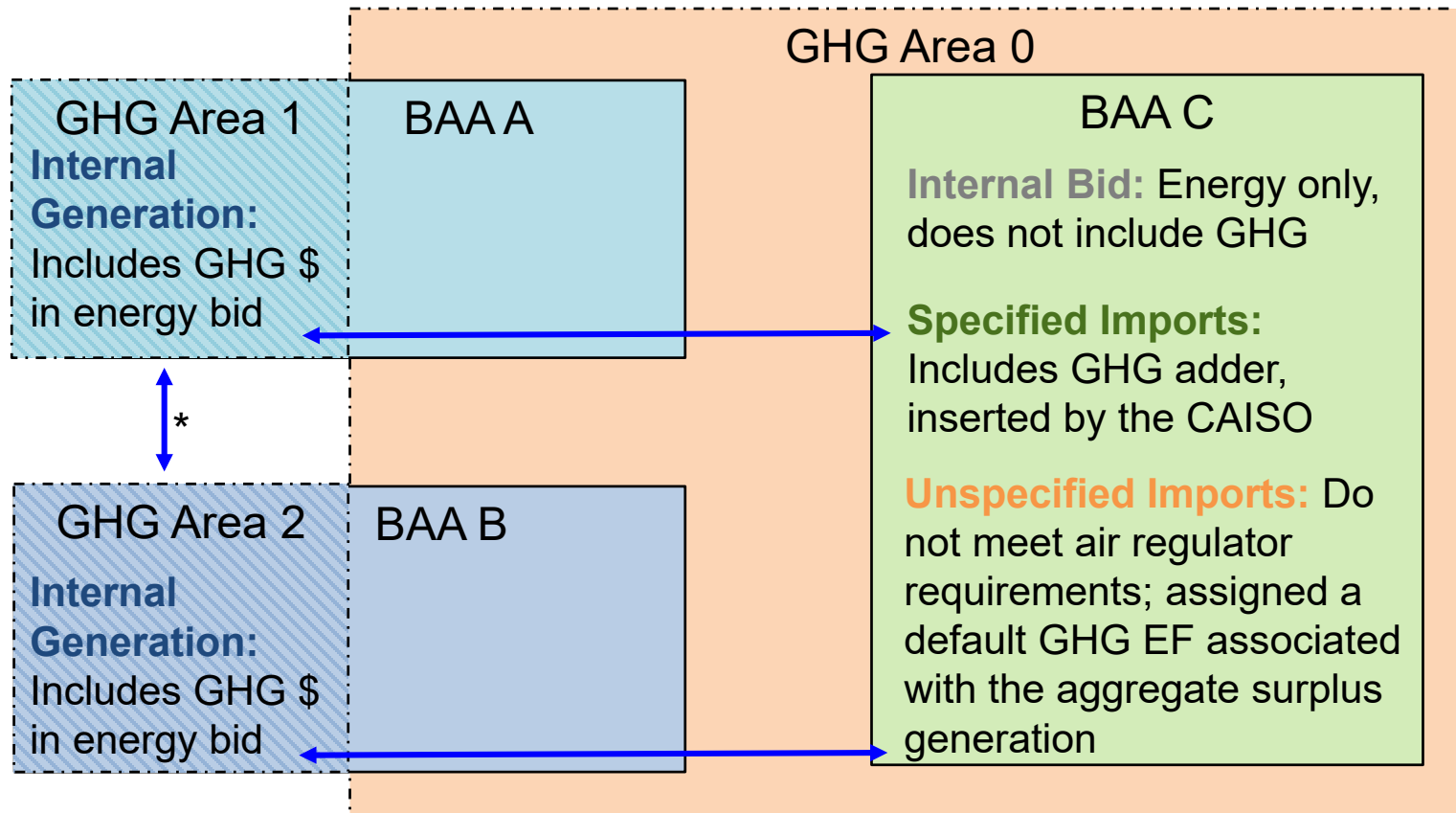
California ISO

Zonal

The design offers a source specific pathway, otherwise a toll applies to transfers. Compliance and reporting would be handled by the CAISO.

GHG Area 0

GHG Area 1
BAA A
Internal Generation: Includes GHG $ in energy bid

GHG Area 2
BAA B
Internal Generation: Includes GHG $ in energy bid

BAA C

Internal Bid: Energy only, does not include GHG

Specified Imports: Path 1 (long term) or Path 2 (short term) includes GHG cost in energy bid. Requires the use of a pseudo tie and GHG pseudo tie

Unspecified Imports: Toll (EF x Allowance $)

- **Between GHG regions:** unlinked (specified P1 or P2 or unspecified import toll); linked (opportunity for transfers to occur without a hurdle rate)

California ISO

LADWP

An extension of the resource specific design with three key changes: (1) CAISO would insert bids for non-GHG area resources; (2) imports would use load based accounting by GHG area LSEs; and (3) it eliminates compliance and reporting by non-GHG area resources.

GHG Area 0

GHG Area 1
BAA A

Internal Generation: Includes GHG $ in energy bid

GHG Area 2
BAA B

Internal Generation: Includes GHG $ in energy bid

BAA C

Internal Bid: Energy only, does not include GHG

Specified Imports: Includes GHG adder, inserted by the CAISO

Unspecified Imports: Do not meet air regulator requirements; assigned a default GHG EF associated with the aggregate surplus generation

* **Between GHG regions:** unlinked (GHG bid adder); linked (energy bid includes GHG $)

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Leakage and Secondary Dispatch

	Leakage or Secondary Dispatch	Quantification
Resource Specific	Yes, secondary dispatch can arise as a result of higher emitting resources backfilling lower emitting resources serving GHG regulation area load.	Secondary dispatch can be estimated as the sum of GHG attributions below the GHG reference. Secondary dispatch emission cost can be addressed by state air regulators.
Zonal	Leakage can occur if the toll is set too low.	The approach does not include a GHG counterfactual or means of quantifying leakage.
LADWP	Yes, secondary dispatch can arise as a result of higher emitting resources backfilling lower emitting resources serving GHG regulation area load.	Secondary dispatch can be estimated as the sum of GHG attributions below the GHG reference. The approach plans to account for secondary dispatch through a total emissions calculation to be worked out with state air regulators.

For all proposals, air regulators may choose to address this emissions leakage with regulatory tools. In WEIM this is addressed by CARB through the Outstanding Emissions Calculation

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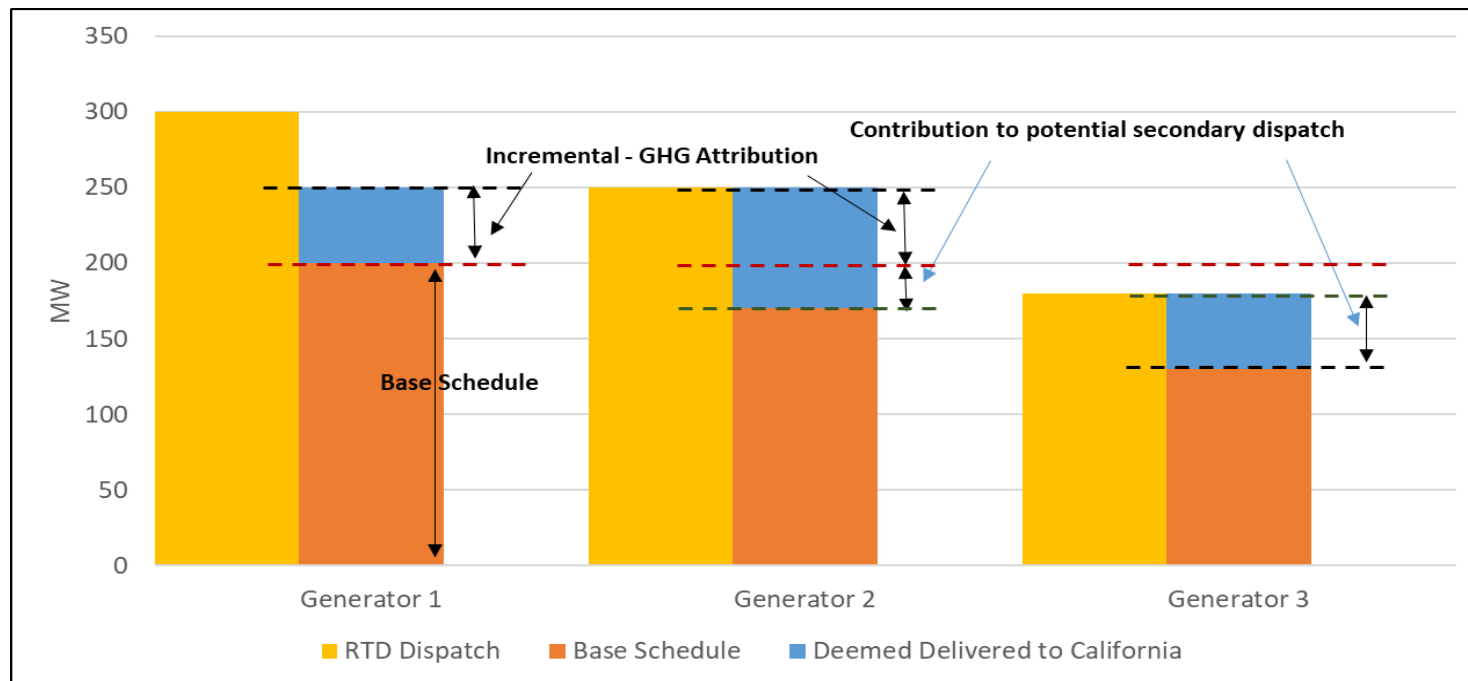# Resource Specific Approach: GHG Attribution and Secondary Dispatch

The optimization takes the total imports for a GHG regulation area and then attributes resources (based on their composite energy and GHG bid) lowest to highest. The marginal resource sets GHG price.

This process results in the market attributing transfers to lower emitting resources which may result in higher-emitting (*i.e.* more expensive) resources backfilling this attribution to serve load in other BAAs (secondary dispatch).

Calculating secondary dispatch allows states to quantify and take responsibility for their atmospheric impact if they choose to do so.

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Resource Specific Approach: WEIM Attribution Example

Gen in EIM Area	Type	Base Schedule (MW)	RTD Dispatch (MW)	GHG Attribution – Deemed Delivered to California (MW)	Contribution to potential Secondary Dispatch (MW)
Gen 1	Hydro	200	300	50	0
Gen 2	Gas	200	250	80	30
Gen 3	Hydro	200	180	50	50

*Assume UEL = 300 MW for all the generators

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Resource Specific Approach: GHG Reference Pass

- The counterfactual to determine secondary dispatch would be based on a market run before the actual market run ("GHG reference pass")

  - This will be identical to the IFM, but without GHG bids.

  - This will approximate how the BAAs outside GHG regulation areas will meet their own load with their internal generation.

  - It will also optimally schedule transfers between BAAs outside GHG regulation areas thus reflect how supply resources can optimally serve demand in the EDAM footprint without net imports into GHG regulation areas and the associated GHG regulation cost. The net GHG transfers are limited in the import direction to GHG regulation areas.

- The GHG Reference Pass for a GHG regulation area would include any self-schedules/bids from pseudo-tied resources from a non-GHG regulation area

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Resource Specific Approach: GHG Constraints to Limit Secondary Dispatch

- **Scheduling constraint:** This constraint will limit resource-specific attributions to the difference between a resource's upper economic limit and the GHG Reference Pass

- **Net export constraint:** This constraint will not allow GHG attribution to GHG regulation areas:
  - Above BAA transfer limits (set by transmission made available in EDAM)
  - If the BAA is a net importer

Resource Specific Approach: Reporting to support states and market participants

State reported data:

- Today CAISO reports total and EIM-entity level MWh GHG attributions to CARB. Through OATI, CARB collects total MWh of tagged imports (outside the WEIM) which is used to quality assure imports reported to CARB under the Mandatory Reporting Regulation (MRR)

- The CAISO is willing to provide total WEIM and EDAM transfers to states with GHG pricing programs

Market participant reported data:

- Currently, WEIM market participants receive
  - Settlement statements which include GHG attribution
  - GHG attributions through CMRI

- In EDAM, the CAISO will provide settlement statements which include GHG attribution DA and RT (deviation from DA)

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Day Ahead Market Outputs:

Transfer Revenue and Congestion Revenue Allocation

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- Transfer Types:
  - *Energy transfer revenue*: Price differences between the Marginal Energy Cost (MEC) component of the LMP across EDAM BAAs
    - BAA MEC is the shadow price of the power balance constraint of that BAA
  - *Imbalance Reserve Transfer Revenue*: Price differences between the imbalance reserve capacity up price/imbalance reserve capacity down price (IRUP/IRDP) across BAAs
    - BAA IRUP/IRDP is the shadow price of the IRU/IRD procurement constraint of that BAA, respectively
  - *Reliability Capacity Transfer Revenue*: Price differences between the Reliability Capacity Up Price/Reliability Capacity Down Price (RCUP/RCDP) across BAAs
    - BAA RCUP/RCDP is the shadow price of the RCU/RCD procurement constraint of that BAA, respectively

Transfer Revenue Allocation (2 of 2)

- Transfer Revenue Collection
  - The differences between import transfers settlement and export transfer settlement when transfer constraint binds
    - Energy transfers, Imbalance Reserve transfers, Reliability Capacity transfers

- Transfer Revenue Allocation (in proportional to transmission):
  - BAAs associated with transfer location share in distribution, 50:50
    - EDAM BAAs will allocated per OATT
    - CAISO BAA will allocated to Metered Demand
  - Transmission Customer who releases transmission right to market (pathway 2) will receive 100 percent of Transfer Revenue associated with their transmission rights

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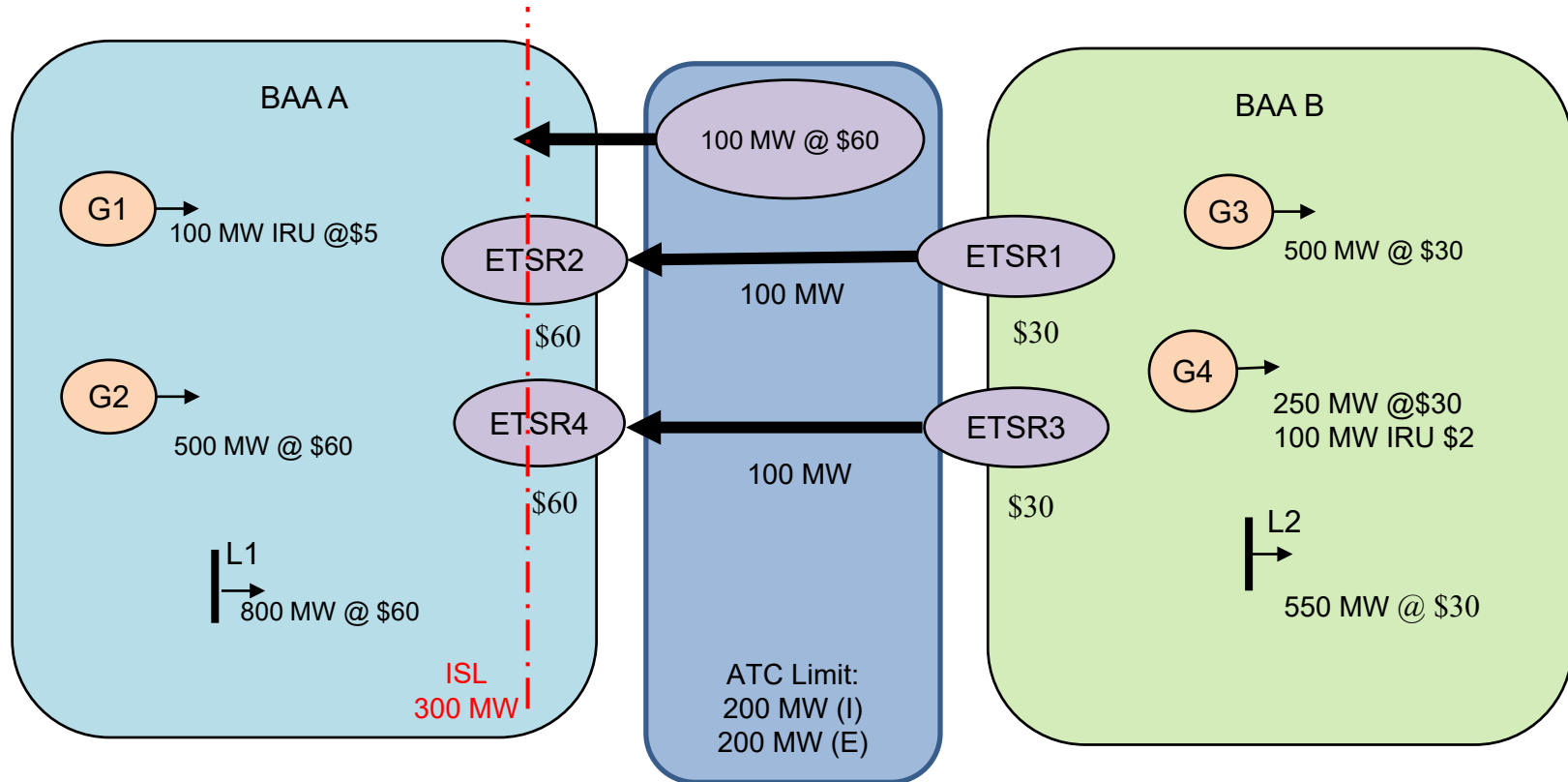
Congestion Revenue Allocation

- Marginal cost of congestion (MCC) reflects the shadow price of a binding internal transmission constraint or scheduling limits.

- Collected from
  - MCC price differences across nodes within a BAA
  - MCC price difference between boundary intertie scheduling points (ITC/ISL) and internal nodes within BAA

- Allocated to the BAA in which the transmission constraint is modeled
  - For EDAM BAAs it will be allocated per OATT
  - For CAISO BAA it will be allocated to CRRs and Measured Demand

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IFM Bid Data
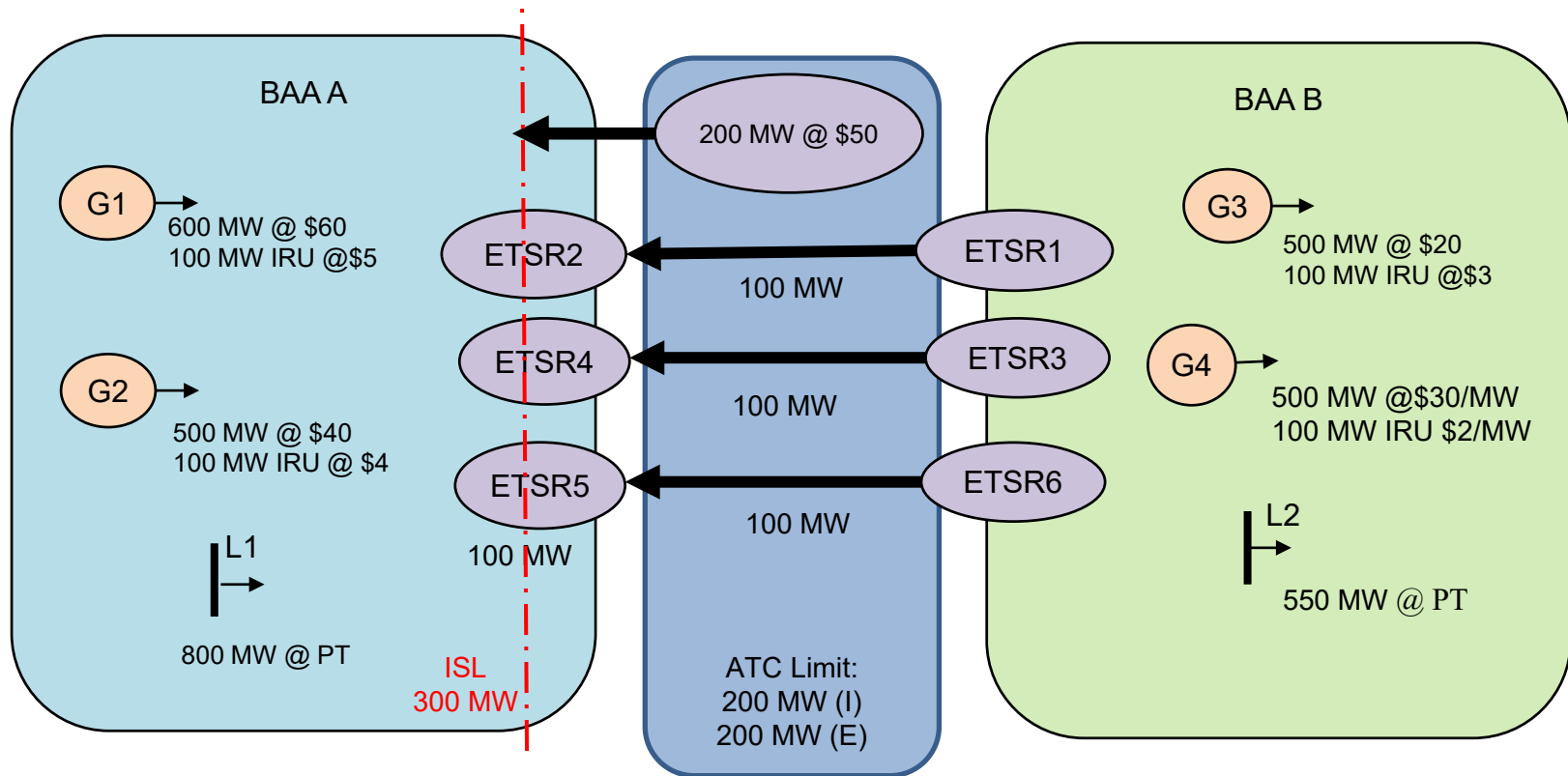
- Transfer Available Transmission Capacity limit is 200 MWs
- Intertie Scheduling Limit is 300 MWs
- Each BAA has 100 MW Imbalance Reserve Up requirement

IFM Cleared Award

- Transfer constraint binds at 200 MWs (Transfer Revenue)
- Intertie Scheduling Limit binds at 300 MWs (Congestion Revenue)
- Each BAA has 100 MW Imbalance Reserve Up requirement

Transfer Revenue vs Congestion Revenue
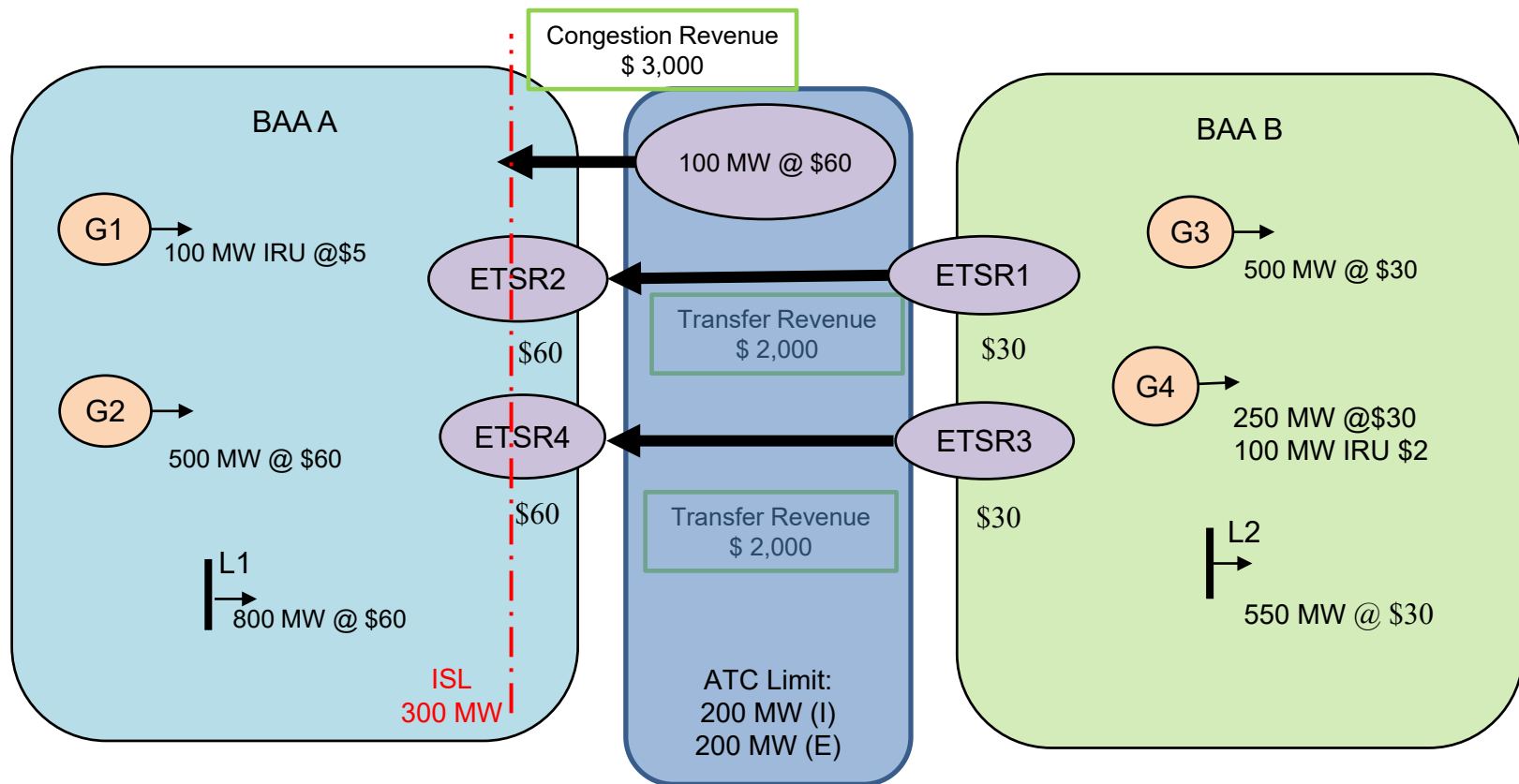
- Transfer Revenue is $4,000 shared between BAA A and BAA B at 50:50 or $2,000 each
- Congestion Revenue is $3,000 allocated to BAA A

Transfer Revenue and Congestion Revenue

- Informed by stakeholder comments and workshop discussions

- Recognizes the shared value that results when two EDAM entities bring transmission to the transfer location

- Equally sharing the mutual benefit of the transfer is a fair and equitable solution.

- Recognizes that internal congestion revenues associated with the internal constraints should flow to the BAA where the constraint is modeled.

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Day Ahead Market Outputs:

Settlements

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Settlement Overview

- Resource Sufficiency Settlement

- Day Ahead Award Settlement

- Reliability Capacity Settlement

- Bid Cost Recovery

- WEIM/RTM Settlement

- Transmission Revenue Recovery

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Resource Sufficiency Evaluation Settlement

- ## IFM RSE failure settlement
  - BAA that fail the resource sufficiency test will be charged max(PV,MID-C) * 16 *max hourly deficiency
  - Allocated pro-rata to net EDAM exporting BAAs

- ## RTM RSE failure settlement
  - WEIM RSEE Phase 2 Initiative looks to create assistance energy product to cure deficiencies in WEIM.
    - Collects from WEIM BAAs that cure using assistance energy
    - Allocated the assistance energy revenue to WEIM BAAs that provide the assistance energy

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Extended Day Ahead Settlement

- IFM (including Virtual) Energy Schedules: Settle at IFM LMP
  - Transfer Energy schedules: settle between BAAs at IFM Transfer LMP
    - BAA MEC (PBC shadow price), plus ITC/ISL shadow price, plus MGC (marginal GHG cost)
- IFM GHG attributions: settle at IFM MGC
- ISO BAA energy neutrality settlement by component of LMP (Offsets)
  - BAA MEC and MCL Neutrality will be allocated to EDAM Entity/CAISO measured demand
  - MGC neutrality between GHG and non-GHG region allocated to metered demand
  - BAA MCG neutrality allocated as Congestion Revenue
- Ancillary Services: settle at ASMP
- Imbalance Reserve Awards: Settle at IRUP/IRDP
  - Transfer IRU/IRD schedules: settle between BAAs at IFM Transfer IRUP/IRDP
  - Allocated to EDAM Entity/CAISO DAME two tier allocation methodology

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Reliability Capacity Settlement

- Reliability Capacity Up (RCU) award reliability capacity down (RCD) award will be settled at the locational marginal RCUP/RCDP

  - RCU/RCD transfers will be settled as an import and export between the two EDAM BAAs at the ETSR marginal RCU/RCD price

- Allocation:

  - Allocated to EDAM Entity/CAISO two tier allocation methodology described in DAME initiative

California ISO

Bid Cost Recovery Settlement

- IFM BCR:
  - Supply resource whose daily IFM Revenue does not cover the daily IFM Costs shall be eligible to receive IFM BCR for the shortfall
  - Total BAA IFM BCR shall be allocated to EDAM Entity for allocation per OATT or via the CAISO two-tiered allocation methodology

- RUC/RTM BCR
  - BCR eligible resources will receive uplift for daily RTM/RUC net shortfall
  - RUC BCR portion of RUC/RTM uplift will be allocated to EDAM Entity or via the CAISO two-tiered allocation methodology
  - RTM BCR portion of RUC/RTM uplift will be allocated to EDAM Entity or via the CAISO current allocation methodology

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- ## Convergence Bid
  - IFM Virtual Supply/Demand has a reversal settlement at the FMM LMP

- ## Imbalance Energy Settlement in EDAM BAA
  - Reference point for calculating Imbalance Energy is the resource Day-Ahead Schedule and not the Base Schedule (no base schedules in EDAM BAAs)
  - Intertie resources are subject to HASP Reversal provisions
  - RTM GHG settlement is a deviation settlement from IFM GHG attribution settlement
  - Transfers will have a financially binding imbalance settlement from day-ahead transfer transfer at the ETSR LMP
  - RTM transfer revenue will be calculated and distributed as described in Transfer Revenue section

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WEIM/RTM Settlement (2 of 2)

- **Flexible Ramp Settlement**
  - RTM forecasted movement is an imbalance settlement from DAM accounting for day-ahead schedule forecasted movement
  - RTM Uncertainty settlement is an imbalance settlement of the 5-minute ramp-capable portion of the day-ahead Imbalance Reserve award

- **Intertie Deviation settlement will apply to intertie schedules**
  - Charge applied to intertie resources that receive an award in HASP and deviate from schedule for non-reliability reasons

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Transfer Revenue Recovery Settlement

- BAA's TRR recovery amount collection
  - From EDAM footprint metered load less the recovering EDAM BAA's metered load.

  - From EDAM footprint gross metered load plus gross supply less the recovering EDAM BAA's gross metered load plus gross supply.

- Distribute BAA TRR recovered amount to the EDAM entity of EDAM BAA or ISO's participating transmission owners.

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EDAM Fees Framework

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Implementation Agreement and Fee

- Implementation agreement will establish the implementation date for entity's participation in the day-ahead market

- Implementation at cost of service
  - Implementations costs will be tracked separately from other implementations
  - Projected average implementation cost is $1.2M
  - Upfront deposit is $300K; additional $300K deposits as necessary

- Implementation activities include project management, administrative management, full network modeling of resources, system integration and functional testing, metering and settlements, and operations readiness and training.

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EDAM Administrative Fees Framework

- Fees will consist of the existing market services charge and a new EDAM system operations charge

  - Market services charge represents fees for the real-time market and the day-ahead market services that EDAM offers, and applies to awarded MWh of energy and MW of capacity.

  - EDAM systems operations charge will represent the fees for real-time dispatch services that EDAM offers, and it applies to metered flows in MWh of supply and demand.

- All customers receiving market services will benefit from a lower market services charge once EDAM is operationally effective because the charge will be calculated using the incremental day-ahead MWh volumes from EDAM participants.

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EDAM Tariff Framework – September 15

- WEIM tariff development started with a framework
  - guide to applicable CAISO tariff provisions

- EDAM tariff framework draft published in September will reflect the revised straw proposal in an outline format
  - facilitate understanding of the relationship between the market design and anticipated tariff provisions

- EDAM tariff framework published in November will reflect the draft final proposal and include market design details
  - establish the scope of applicable market rules

- EDAM draft tariff language will follow the final proposal and consideration by the WEIM GB/Board

Next meeting:

Date/Time	Format	Location
September 7, 2022 (1 p.m. – 5 p.m.)	In-person and virtual	Sacramento, CA
September 8, 2022 (9 a.m. – 5 p.m.)	In-person and virtual	Sacramento, CA

Note: Please register for the meeting by end of day September 2. Meeting materials will be posted prior to the meeting on the initiative webpage.

California ISO

Comments

- Please submit comments on the revised straw proposal using the commenting tool linked on the initiative webpage.

  - Comments are due by end of day September 20.

- Visit the initiative webpage for more information:
  California ISO - Extended day-ahead market (caiso.com)

- If you have any questions, please contact
  ISOStakeholderAffairs@caiso.com

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Closing remarks

Mark Rothleder, *Sr Vice President and Chief Operating Officer*

California ISO

Thank you for your participation. That concludes the Extended Day-Ahead Market stakeholder meeting.

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