

CAISO GHG Working Group Meeting

Consolidated Problem Statements on GHG Impacts to the Optimization (PS 1-3)

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- Consolidated problem statement overview
- Scenario descriptions and caveats
- Sections:
 - 1) Potential limitations identifying surplus due to counterfactual run
 - 2) Potential limitations with GHG solution when insufficient GHG bids
 - 3) Potential limitations with GHG solution when resources are not fully awarded in Integrated Forward Market
- Next steps recommendations

Consolidated problem statement on potential limitations affecting optimization

Optimization does not take the explicit cost of secondary dispatch into account, and therefore may not balance optimized attribution with constraints to limit secondary dispatch (PS1).

Current GHG design does not limit attribution of only capacity above the baseline which results in the potential for secondary dispatch (PS2).

Attribution is not scale-able because it creates potential for secondary dispatch. Secondary dispatch could increase with market expansion (PS3).

Potential limitations affecting the optimization may lead to persistent results where internal GHG resources are inefficiently displaced relative to external resources leading to secondary dispatch, and could include:

1. Incorrectly identifying available surplus that may be attributed to a GHG zone,
2. Inaccurately pricing GHG component for purposes of determining optimal dispatch between internal and external areas, or
3. Failing to take explicit cost of secondary dispatch into account that may not balance optimal attribution with constraints limiting secondary dispatch.

Following presentation will go through a set of scenarios intended to provide more illustrative descriptions of the consolidated problem statement

Impact on market outcomes when performing reference pass at Non-GHG Area versus BAA(s) level:

“Accurate Counterfactual”

Scenario 1: 3 BAA in 2 “systems” Scenario – Non-GHG Area Counterfactual

Scenario 2a: 4 BAA in 2 “systems” Scenario – Non-GHG Area Counterfactual

Scenario 2b: 4 BAA in 3 “systems” scenario – BAA(s) Counterfactual

Impact on GHG pricing when GHG bids are exhausted:

“Insufficient GHG Bids”

Scenario 3: 4 BAA in 2 “systems” if sufficient GHG bids – Non-GHG Area Counterfactual

Scenario 4a: 4 BAA in 2 “systems” if insufficient GHG bids – Non-GHG Area Counterfactual*

Scenario 4b: 4 BAA in 2 “systems” if insufficient GHG bids plus high price – Non-GHG Area Counterfactual*

Impact on market outcomes when attribution is not limited to actual IFM award:

“Accurate Deeming”

Scenario 5: 4 BAA in 2 “systems” attribution not limited to IFM – Non-GHG Area Counterfactual

Scenario 6: 4 BAA in 2 “systems” attribution limited to IFM – Non-GHG Area Counterfactual

*Caveat: Scenarios with insufficient bids highly illustrative on market pricing with need for CAISO to explain shadow price and its impact on DLAP and generation nodes’ LMP being requested.

- Following examples use EDAM GHG solver from July 27, 2022:
<https://www.caiso.com/InitiativeDocuments/GHGModels-ExtendedDay-AheadMarket-Jul27-2022TechnicalWorkshop.xlsx>
- These examples are only as accurate as the solver pricing outcomes are still accurate, and it may benefit the entire working group to have the solver confirmed.
- In instances when the solution is not feasible such as when there is insufficient GHG bids the scenario is not intended to be accurate on what the GHG and energy price outcomes are but to indicate a range of possible outcomes that hopefully CAISO will provide clarity on in future discussions.
- Scenarios provided intended to be a starting place to put numbers around the questions on the optimization functionality that have been posed by stakeholders under consolidated problem statement.
- Scenarios use Pacificorp, Idaho Power, and California BAAs as hypothetical BAA and BAA groups for purely illustrative purposes and is not intended to indicate specifics of those BAAs, and we thank those entities for being in the hypothetical scenarios.

Potential limitations with identifying surplus due to counterfactual run

Flexibility to identify geographic areas of compliance



- Problem statement 1-3 includes whether defining counterfactual at a BAA or BAA group level will improve efficiency and reasonableness of market outcomes.
- CAISO's planned implementation takes steps forward to approve the existing framework by defining GHG Regulation Area(s) by registering resource and load pricing nodes in Master File as within the state geographic or "compliance" boundaries, and to include pseudo-tied or dynamically scheduled resources.
 - This flexibility is not currently envisioned for non-GHG BAAs.
- CAISO's planned implementation includes various counterfactuals that blend approaches across WEIM entities' counterfactuals at Non-GHG area or BAA level:
 - For Integrated Forward Market: Reference pass results allowing net transfers between non-GHG BAAs to identify supply serving collective non-GHG area
 - Planned reference pass approach assumes additional clean emitting resources' headroom first deemed to external areas before GHG area.
 - For Fifteen Minute Market:
 - EDAM BAA: IFM schedule - IFM GHG attributions established as result of running a 2-system (GHG and non-GHG) reference pass to establish counterfactual used in producing IFM results
 - WEIM-only BAA: Base Schedules reflecting individual BAA serving its load

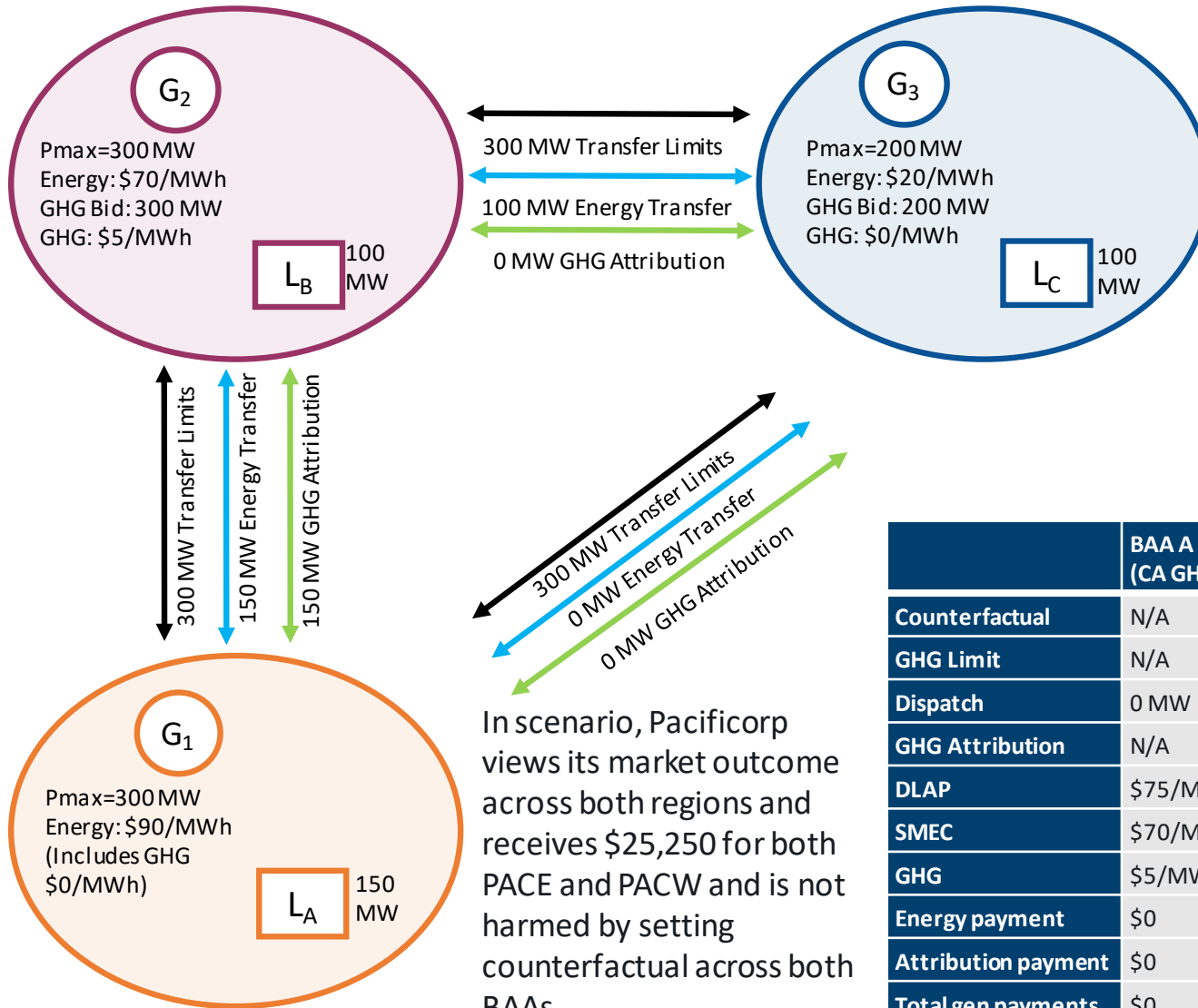
Flexibility to identify geographic areas of compliance

- There may be need to further explore appropriate granularity of external GHG area modeling potentially for both reference pass and for any reporting.
 - May need to allow entities to define what area outside the GHG area makes up its view of “system” for purposes of needing to identify its own supply versus incremental market purchases.
 - CAISO could leverage its planned implementation to add Non-GHG Area BAA that at a minimum would identify which Non-GHG Area BAA or BAA group that a resource or load node should be considered in for both the counterfactual and any reporting.
- Following scenarios assume a single GHG area and up to three other BAAs for simplicity and show differences between:
 - CAISO’s planned implementation of a day-ahead non-GHG area reference pass called a 2-system scenario
 - => GHG Area BAA A is one “system” and Non-GHG area including multiple BAAs is the second “system”
 - Alternative to allow entities to define whether their BAA or group of BAAs should be its own “system” in reference pass called a 3-system scenario
 - => GHG Area BAA A is one “system” and each BAA group in the Non-GHG area make up the second and third “system(s)”

- First scenario is hypothetical where all non-GHG BAAs are viewed as single non-GHG group
- In theory, the collective BAAs would be indifferent to being evaluated as a BAA group for purposes because they may evaluate participation as a system
- Assumes:
 - BAA(s) A: Single GHG area group of BAAs within GHG area
 - BAA B: PACW
 - BAA C: PACE

- Scenario 2a and 2b explore:
 - How outcome changes when adding another market participant that may not view its participation as tied to the other non-GHG BAA
 - Market impacts from setting counterfactual across entire non-GHG area versus allowing flexibility to define a non-GHG BAA counterfactual
- Build off base scenario, assuming:
 - BAA(s) A: Single GHG area group of BAAs within GHG area
 - BAA(s) B: Group of more than one BAA such as PACE and PACW wanting to be assessed as a system, or group
 - Grouped base scenario BAA B and BAA C into BAA(s) B
 - BAA C: One BAA such as Idaho Power wanting to be assessed as a BAA instead of within a BAA group

Scenario 1: 3 BAA in 2 “systems” Scenario – Non-GHG Area Counterfactual

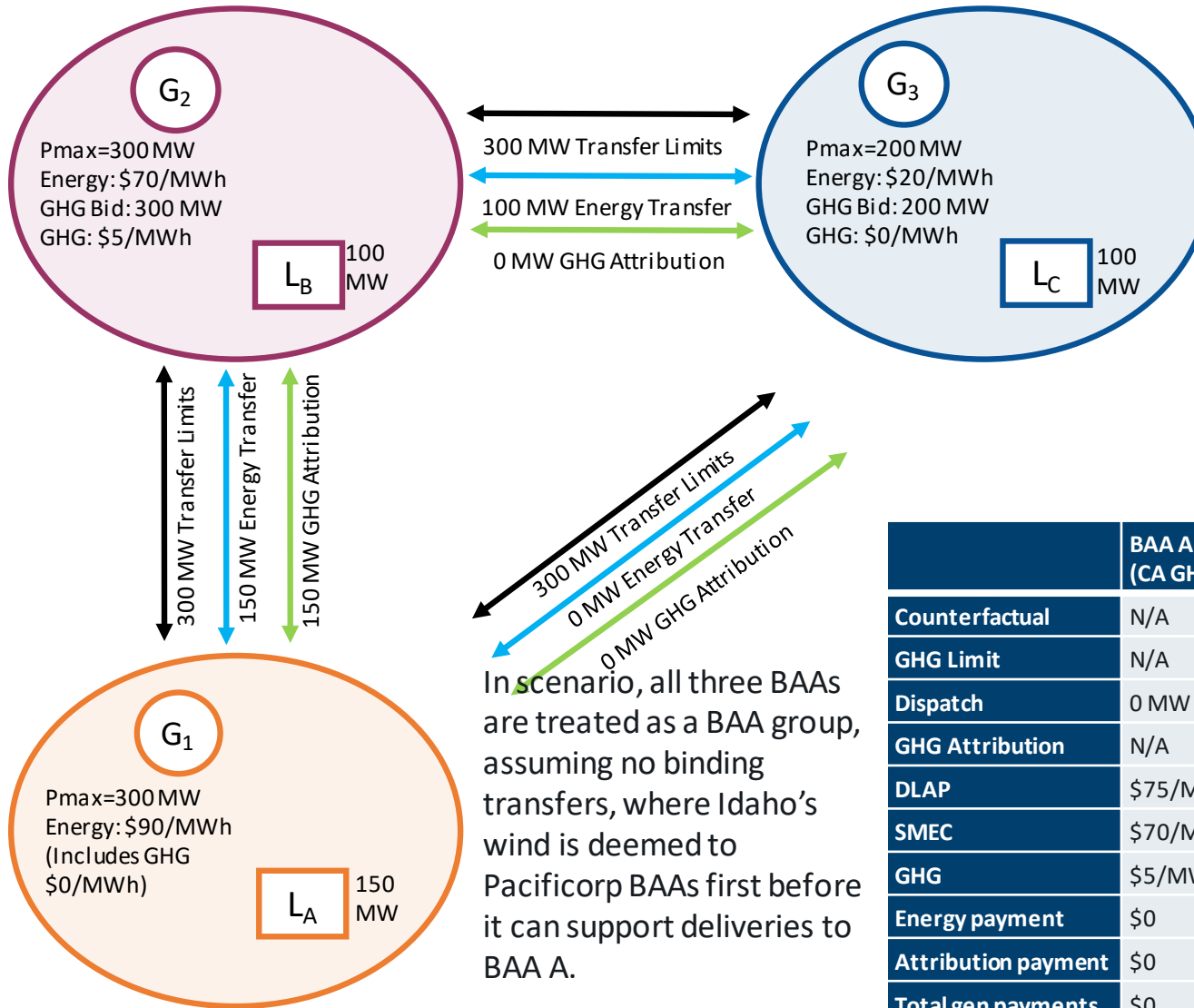


If only Pacificorp and CAISO BAA participate in market, this result appears reasonable because Pac is treated as net importing into area from its combined system so setting counterfactual across region matches business use case.

In scenario, Pacificorp views its market outcome across both regions and receives \$25,250 for both PACE and PACW and is not harmed by setting counterfactual across both BAAs.

| | BAA A (CA GHG) | BAA B (PACW) | BAA C (PACE) |
|---------------------|----------------|--------------|--------------|
| Counterfactual | N/A | 0 MW | 200 MW |
| GHG Limit | N/A | 300 MW | 0 MW |
| Dispatch | 0 MW | 150 MW | 200 MW |
| GHG Attribution | N/A | 150 MW | 0 MW |
| DLAP | \$75/MWh | \$70/MWh | \$70/MWh |
| SMEC | \$70/MWh | \$70/MWh | \$70/MWh |
| GHG | \$5/MWh | \$0/MWh | \$0/MWh |
| Energy payment | \$0 | \$10,500 | \$14,000 |
| Attribution payment | \$0 | \$750 | \$0 |
| Total gen payments | \$0 | \$11,250 | \$14,000 |

Scenario 2a: 4 BAA in 2 “systems” Scenario – Non-GHG Area Counterfactual

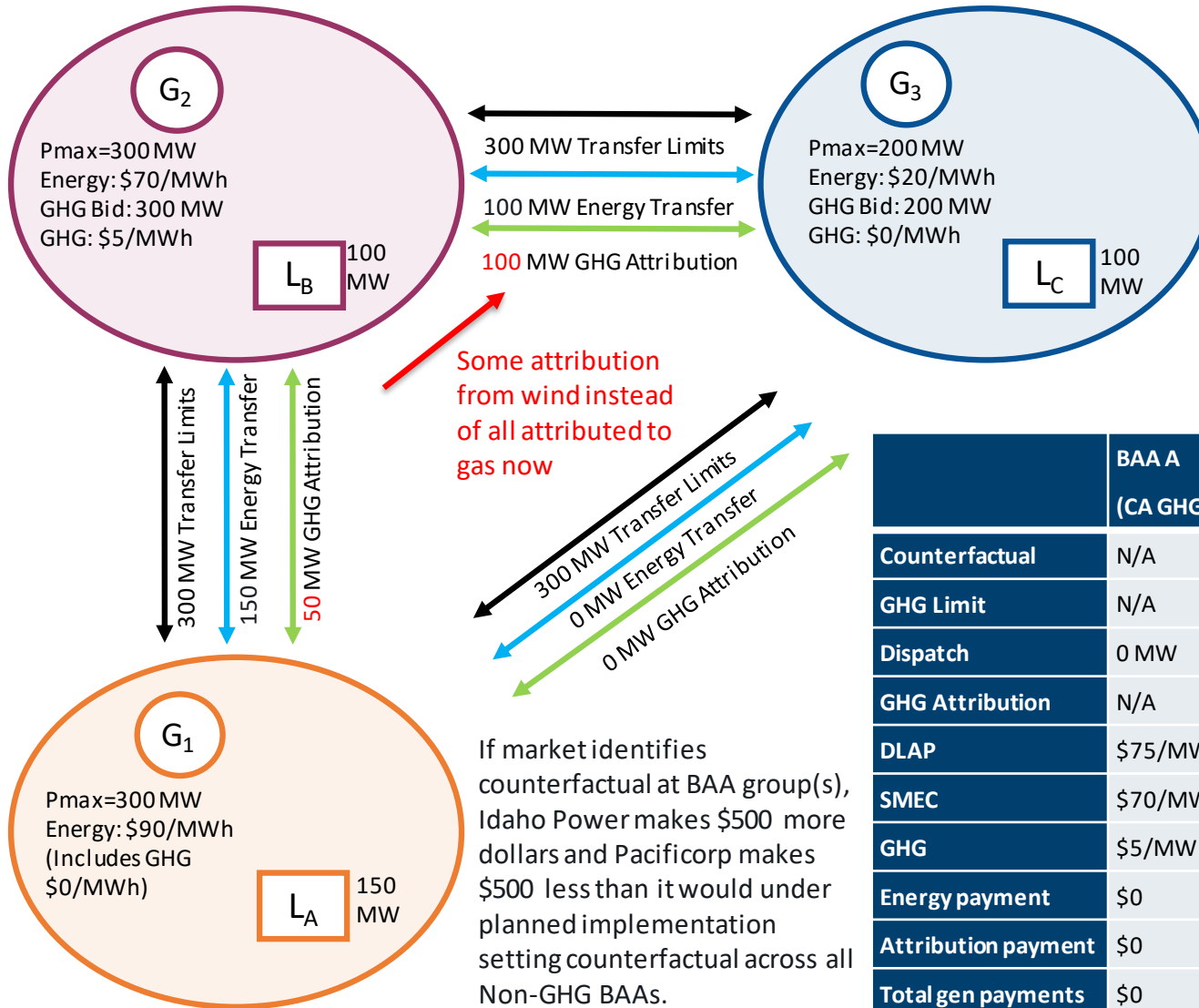


EDAM likely includes more BAAs than a two BAA scenario with just CAISO and Pacificorp. For illustrative purposes, changing the base scenario to one where BAA B is both PAC BAAs and BAA C is Idaho Power.

In scenario, all three BAAs are treated as a BAA group, assuming no binding transfers, where Idaho’s wind is deemed to Pacificorp BAAs first before it can support deliveries to BAA A.

| | BAA A (CA GHG) | BAA B (PACW+PAC) | BAA C (IPCO) |
|---------------------|-------------------|---------------------|-----------------|
| Counterfactual | N/A | 0 MW | 200 MW |
| GHG Limit | N/A | 300 MW | 0 MW |
| Dispatch | 0 MW | 150 MW | 200 MW |
| GHG Attribution | N/A | 150 MW | 0 MW |
| DLAP | \$75/MWh | \$70/MWh | \$70/MWh |
| SMEC | \$70/MWh | \$70/MWh | \$70/MWh |
| GHG | \$5/MWh | \$0/MWh | \$0/MWh |
| Energy payment | \$0 | \$10,500 | \$14,000 |
| Attribution payment | \$0 | \$750 | \$0 |
| Total gen payments | \$0 | \$11,250 | \$14,000 |

Scenario 2b: 4 BAA in 3 “systems” scenario – BAA(s) Counterfactual



What if market instead allowed Pacificorp to set its reference pass area as one for PACE and PACW for BAA B, and BAA C is Idaho Power with a wind resource. Is this outcome still fair?

| | BAA A (CA GHG) | BAA B (PACE+PACW) | BAA C (IPCO) |
|----------------------------|-------------------|----------------------|-------------------|
| Counterfactual | N/A | 100 MW (+100) | 100 MW (-100) |
| GHG Limit | N/A | 200 MW (-100) | 100 MW (+100) |
| Dispatch | 0 MW | 150 MW | 200 MW |
| GHG Attribution | N/A | 50 MW (-100) | 100 MW (+100) |
| DLAP | \$75/MWh | \$70/MWh | \$70/MWh |
| SMEC | \$70/MWh | \$70/MWh | \$70/MWh |
| GHG | \$5/MWh | \$0/MWh | \$0/MWh |
| Energy payment | \$0 | \$10,500 | \$14,000 |
| Attribution payment | \$0 | \$250 (-\$500) | \$0 (+\$500) |
| Total gen payments | \$0 | \$10,750 (-\$500) | \$14,500 (+\$500) |

If market identifies counterfactual at BAA group(s), Idaho Power makes \$500 more dollars and Pacificorp makes \$500 less than it would under planned implementation setting counterfactual across all Non-GHG BAAs.

Policy questions on accuracy and fairness

- In both scenarios 2a and 2b, flows from BAA C to BAA B of 100 MW support the eventual energy transfer of 150 MW from BAA B to BAA A (GHG Area)
- In scenario 2a, all 150 MW of attribution is given to BAA B even though BAA B is receiving 100 MW of incremental transfers from BAA A...did that 100 MW disappear?
 - Do you agree BAA C is providing 100 MW of supply underlying the net import transfer into BAA A?
 - If so, then BAA C is supporting net transfer into BAA A, but BAA C is not being compensated for GHG value and instead BAA B is being compensated even though BAA B resource is only dispatched 50 MW above its load.
- In scenario 2b, counterfactual is based on serving internal area(s) demand and limit attribution to what would be incremental to the defined areas' demand, and then:
 - BAA B resource only attributed 50 MW for award greater than its load
 - BAA C still provides 100 MW transfer to BAA B, but now it receives 100 MW of attribution for its transfer supporting the eventual transfer into BAA A
 - Consequently, there is \$500 in GHG payments that are switched from BAA B to BAA A in recognition that BAA supply is supporting that transfer.
- Would it be fair to pay BAA B for the GHG value from the wind resource in BAA C?

- In practice, some BAAs comply with environmental program as a system mix across more than one BAA and other BAAs, or entities within BAAs, may comply separately on a more granular level.
- If the Non-GHG area level reference pass is run instead of a BAA or BAA group level, the hypothetical scenario saw Idaho Power forego revenues where it would have otherwise received \$500 it instead through the reference pass design gave those revenues to PacifiCorp.
- An entity that is multi-jurisdictional or managing multi-BAAs as a system may see more than one BAA as in a single BAA group, but does that hold true for all participating entities?
- If the EDAM/WEIM entity does not view itself in the same BAA group with another entity then should it have its counterfactual increased to first serve non-GHG area loads, and therefore forego serving GHG area loads including foregoing any infra-marginal GHG payments?

Potential limitations with GHG solution when insufficient GHG bids

Need to consider market outcomes when there are insufficient GHG bids

- Problem statement 1-3 includes whether the market outcome is reasonable under condition when there is insufficient GHG bids
- When insufficient energy and GHG bids are available to meet both power balance constraints (PBC) and GHG constraints, it is likely shadow price associated with violating PBC results in energy prices higher than the incremental cost including GHG compliance costs
- Following scenario focuses on market conditions with sufficient system-wide energy offers but insufficient GHG bids
 - Like any constraint, there are instances it may bind when there may be insufficient GHG bids even while there are sufficient energy bids
 - When there is insufficient GHG bids this could lead to inefficient market outcomes where resources are paid less than they should be paid given the unpriced value of GHG associated with unattributed transfers, as well as potential need to uplift offsets across buyers
 - When GHG constraint cannot be met and the market must relax the constraint to solve, the price associated with that relaxation (penalty price) should be an accurate valuation of GHG during that market run

Need to consider market outcomes when there are insufficient GHG bids cont.

- Following scenario focuses on when there is a higher emitting external resource that does not offer a GHG bid in a scenario where its supply is needed in the GHG area, ie GHG area (BAAA) fails RSE
- Other scenarios where insufficient GHG bids could occur such as external entities needing to claim clean energy resources they have secured.
 - Clean energy resource secured by non-GHG entity and that cannot submit GHG bid because it is secured for serving another areas' load
- It is important for the working group to evaluate this issue because data has already been provided identifying this occurs in the market. Department of Market Monitoring's 2022 annual report states:

After the secondary dispatch policy change in November 2018, which limited the capacity that could be deemed delivered, there were some price spikes that were not set by bids from emitting generators. Greenhouse gas supply can be exhausted, limiting the total transfer of energy imported to California through the WEIM and setting greenhouse gas prices that exceed the highest cleared bid. The highest 15-minute and 5-minute prices in 2022 were \$669/MWh and \$32/MWh, respectively.

Source: <https://www.caiso.com/Documents/2022-Annual-Report-on-Market-Issues-and-Performance-Jul-11-2023.pdf>, Page 139

- This problem statement 1-3 element asks the question on what these GHG prices mean that we have seen when GHG bids are exhausted as well as what should they mean?

Need to consider market outcomes when there are insufficient GHG bids cont.

Figure 3.25 High 15-minute WEIM greenhouse gas prices

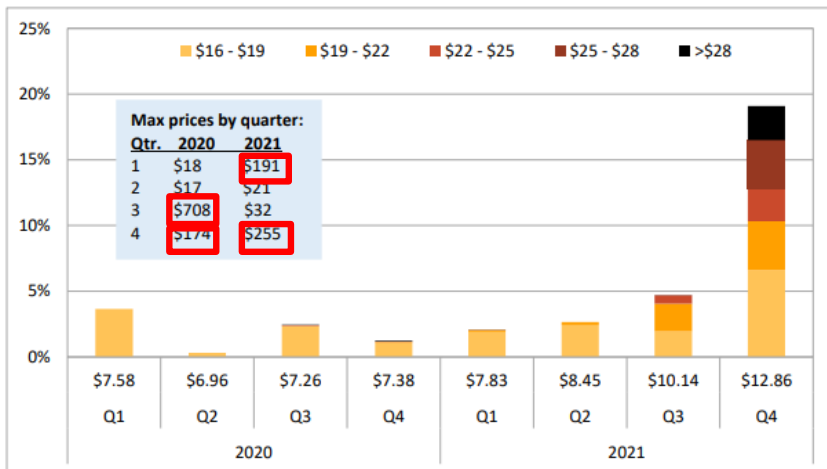


Figure 3.25 High 15-minute WEIM greenhouse gas prices

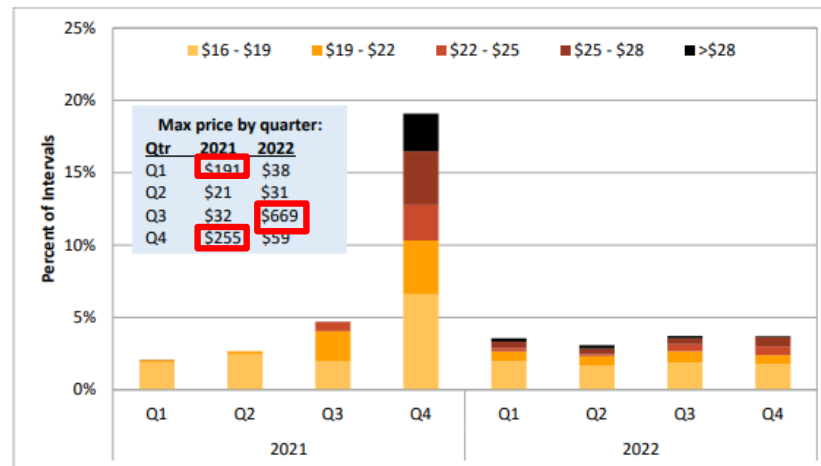


Figure 3.26 High 5-minute WEIM greenhouse gas prices

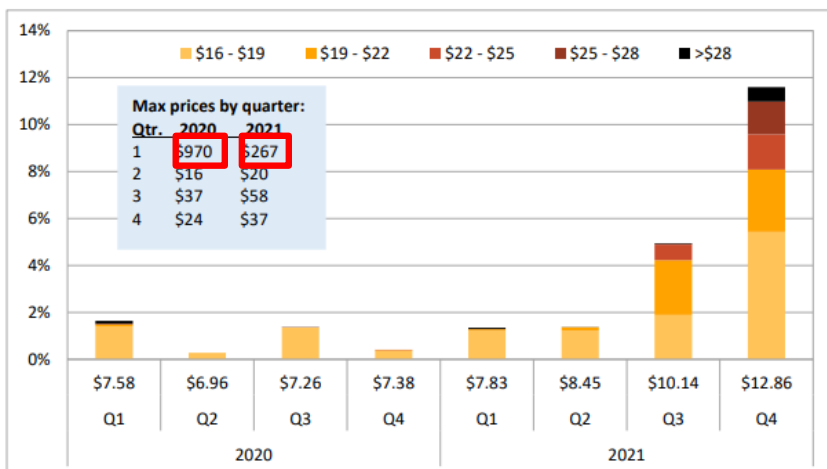
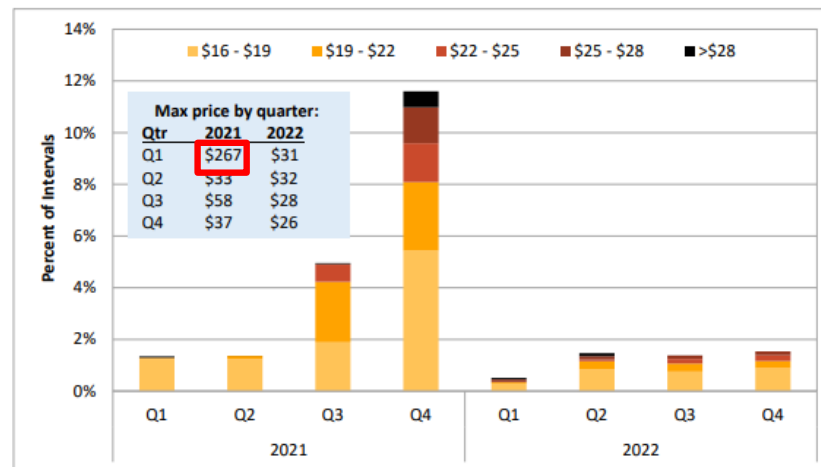


Figure 3.26 High 5-minute WEIM greenhouse gas prices



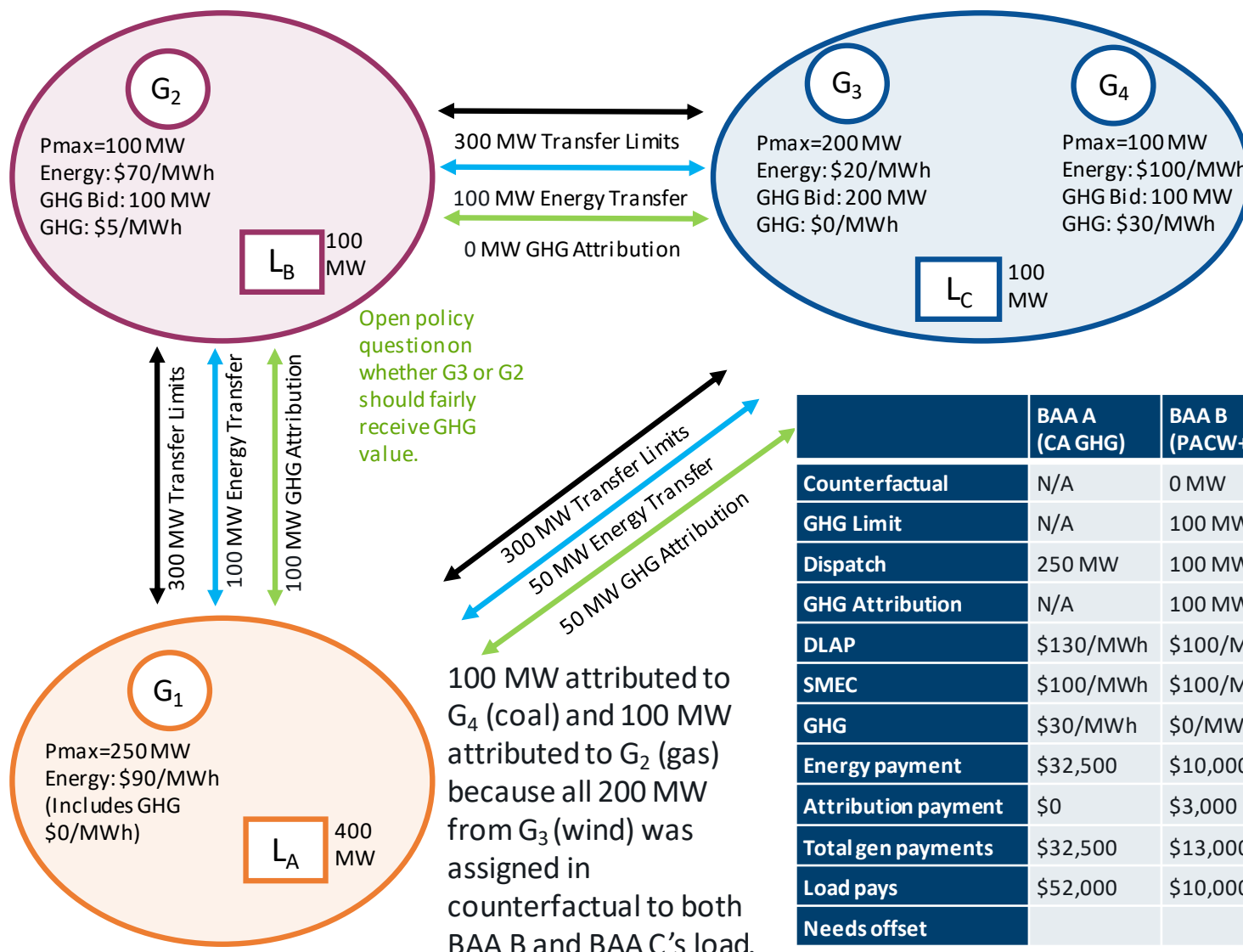
Source: <https://www.aiso.com/Documents/2021-Annual-Report-on-Market-Issues-Performance.pdf>, Page 161

Source: <https://www.aiso.com/Documents/2022-Annual-Report-on-Market-Issues-and-Performance-Jul-11-2023.pdf>, Page 138

Scenario 3 and 4 set up

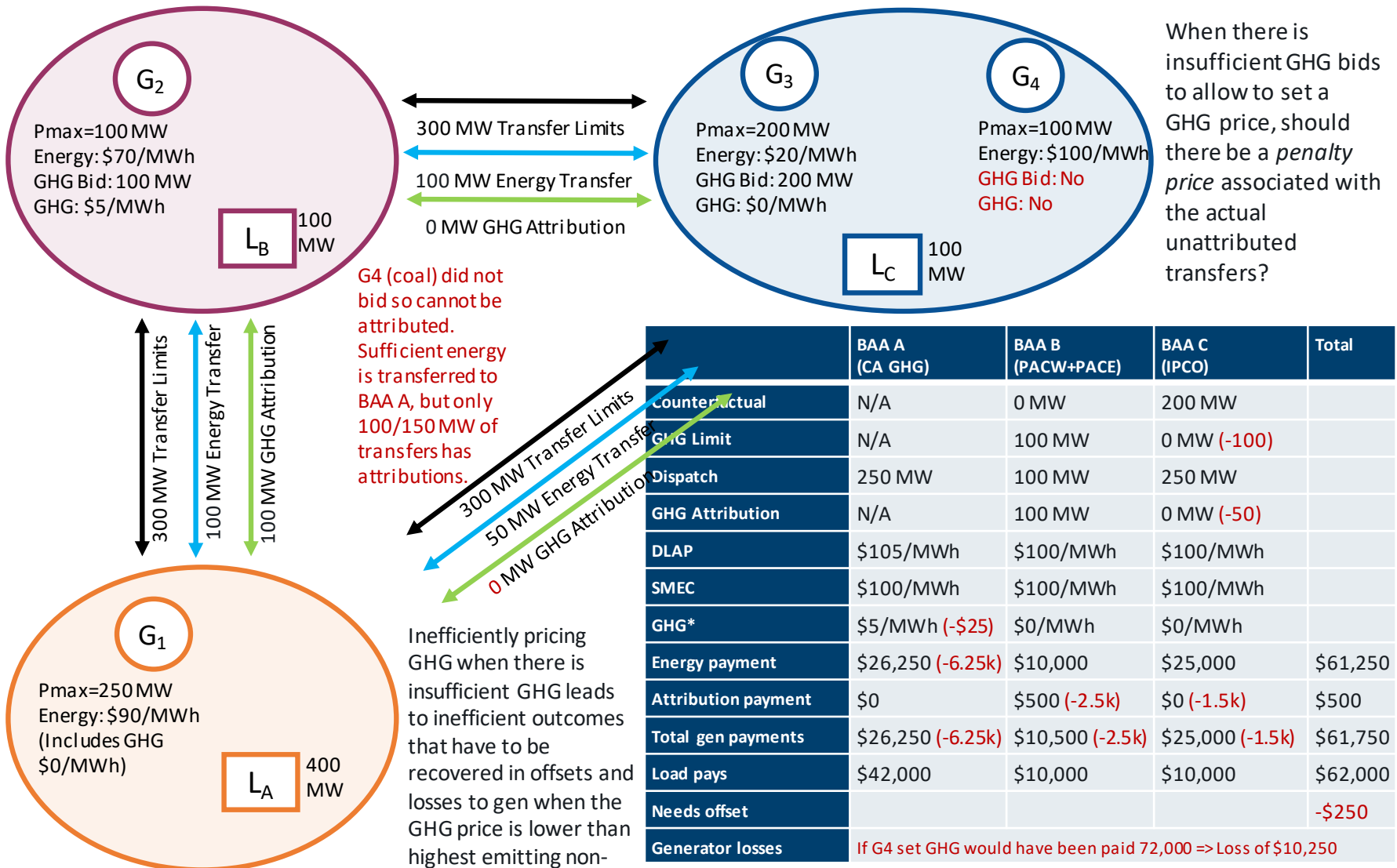
- Scenario 3 sets up hypothetical looking at market result assuming there are sufficient GHG bids from external resources to allow setting a GHG price based on emissions
- Assumes:
 - BAA(s) A: Single GHG area group of BAAs within GHG area
 - Gen 1 represents hypothetical storage asset
 - BAA(s) B: Group of more than one BAA such as PACE and PACW wanting to be assessed as a system, or group
 - Grouped base scenario BAA B and BAA C into BAA(s) B
 - Gen 2 represents hypothetical gas asset
 - BAA C: One BAA such as Idaho Power wanting to be assessed as a BAA instead of within a BAA group
 - Gen 3 represents hypothetical wind asset
 - Gen 4 represents hypothetical coal asset
- Scenario 4a and 4b explore changes in market results when there are insufficient GHG bids, ie GHG bids have been exhausted
- Price formation when GHG bids are exhausted needs additional clarity and explanation from CAISO
- 4a assumes intervals could occur where GHG is set by highest available GHG bid
- 4b uses value similar to Q3 2022 for GHG price and assumes only included in DLAP but not paid to internal gen.

Scenario 3: 4 BAA in 2 “systems” if sufficient GHG bids – Non-GHG Area Counterfactual



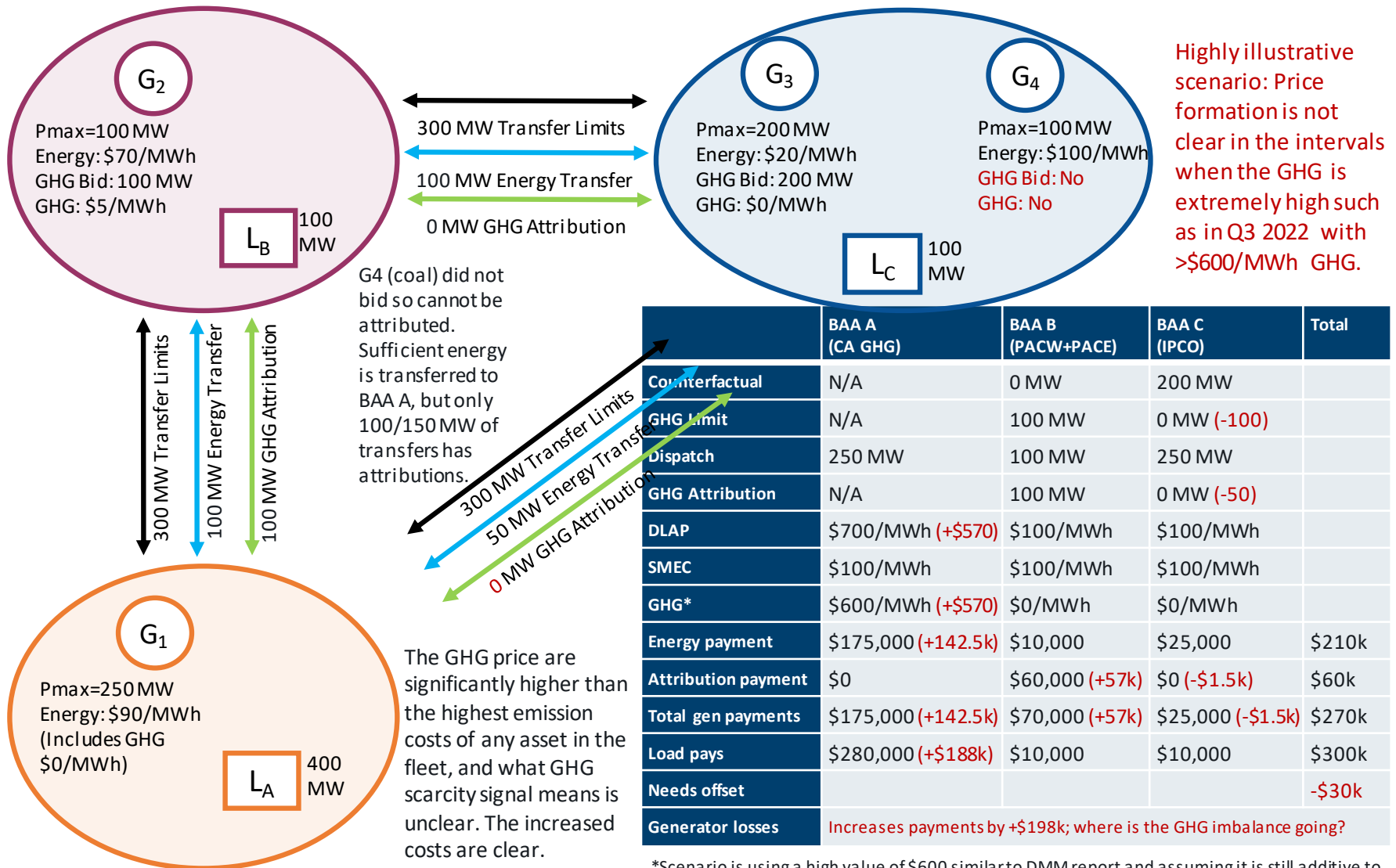
By performing counterfactual run across all Non-GHG BAAs, it also works to allocate surplus from cleaner (cheaper) resources first to another external BAA.

Scenario 4a: 4 BAA in 2 “systems” if insufficient GHG bids – Non-GHG Area Counterfactual



*It is unclear how shadow price is calculated when GHG bids are exhausted. This scenario is using the last GHG bid \$/MWh, however clearly data shows other price outcomes.

Scenario 4b: 4 BAA in 2 “systems” if insufficient GHG bids plus high price – Non-GHG Area Counterfactual



Highly illustrative scenario: Price formation is not clear in the intervals when the GHG is extremely high such as in Q3 2022 with >\$600/MWh GHG.

*Scenario is using a high value of \$600 similar to DMM report and assuming it is still additive to SMEC set by marginal energy offer, but actual data on energy price formation is needed.

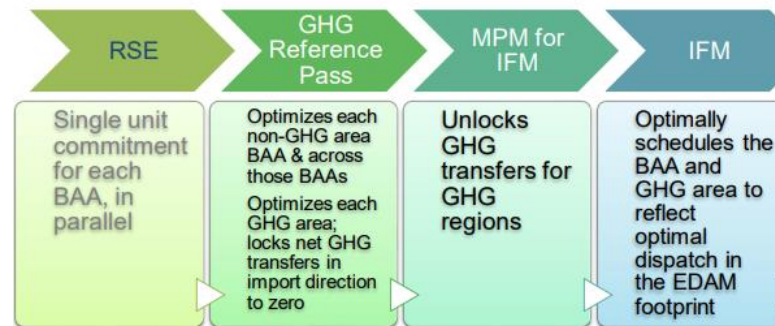
Policy questions under conditions with insufficient GHG bids

- For insufficient GHG conditions, what the GHG price should be when GHG bids are exhausted is similar policy discussion teed up by WPTF today
- Some areas of clarity that would be beneficial:
 - Confirm how shadow prices for GHG constraint are calculated when GHG bids are exhausted today and how that changes under EDAM
 - Whether shadow price is going to be reflected in both internal and external resources' LMPs.
- Under EDAM, it is expected the shadow price will be surfacing in the GHG areas' load prices as a positive value instead of in non-California WEIM areas as a credit.
 - However, less clear whether GHG shadow price will be included in California resources' LMPs such that internal resources will be compensated when GHG shadow price is set by external marginal resource or under GHG scarcity.
- Discussion questions on these scenarios include:
 - Do GHG prices at levels shown by DMM report make sense given fleet?
 - What is the appropriate default GHG price in this example is it \$5/MWh or is it \$30/MWh, or another value?
 - Does default unspecified emission rate or unit-specific max GHG cost cap make sense?
 - What if the highest priced external resource has no emission rate (e.g., BESS) instead of this highest emission rate example?

Potential limitations with GHG solution when resources are not fully awarded in Integrated Forward Market

Need to consider market outcomes when GHG attribution deems supporting external load

- Problem statement 1-3 includes whether outcome is reasonable under conditions when GHG attribution of capacity from resource overlaps with the counterfactual
- There are market instances where Integrated Forward Market (IFM) results may differ from any reference pass counterfactual, for example:
 - Transmission enforced in GHG reference pass differs from IFM
 - GHG reference pass uses unmitigated bids where IFM will use mitigated bid set



Source: CAISO GHG Presentation, Slide 17, <https://www.caiso.com/InitiativeDocuments/Presentation-GHGCoordination-Sep13-2023.pdf>

- Unit constraint limiting that incremental award was not fully captured or was not hit in the GHG reference pass but is in IFM

Need to consider market outcomes when GHG attribution deems supporting external load cont.



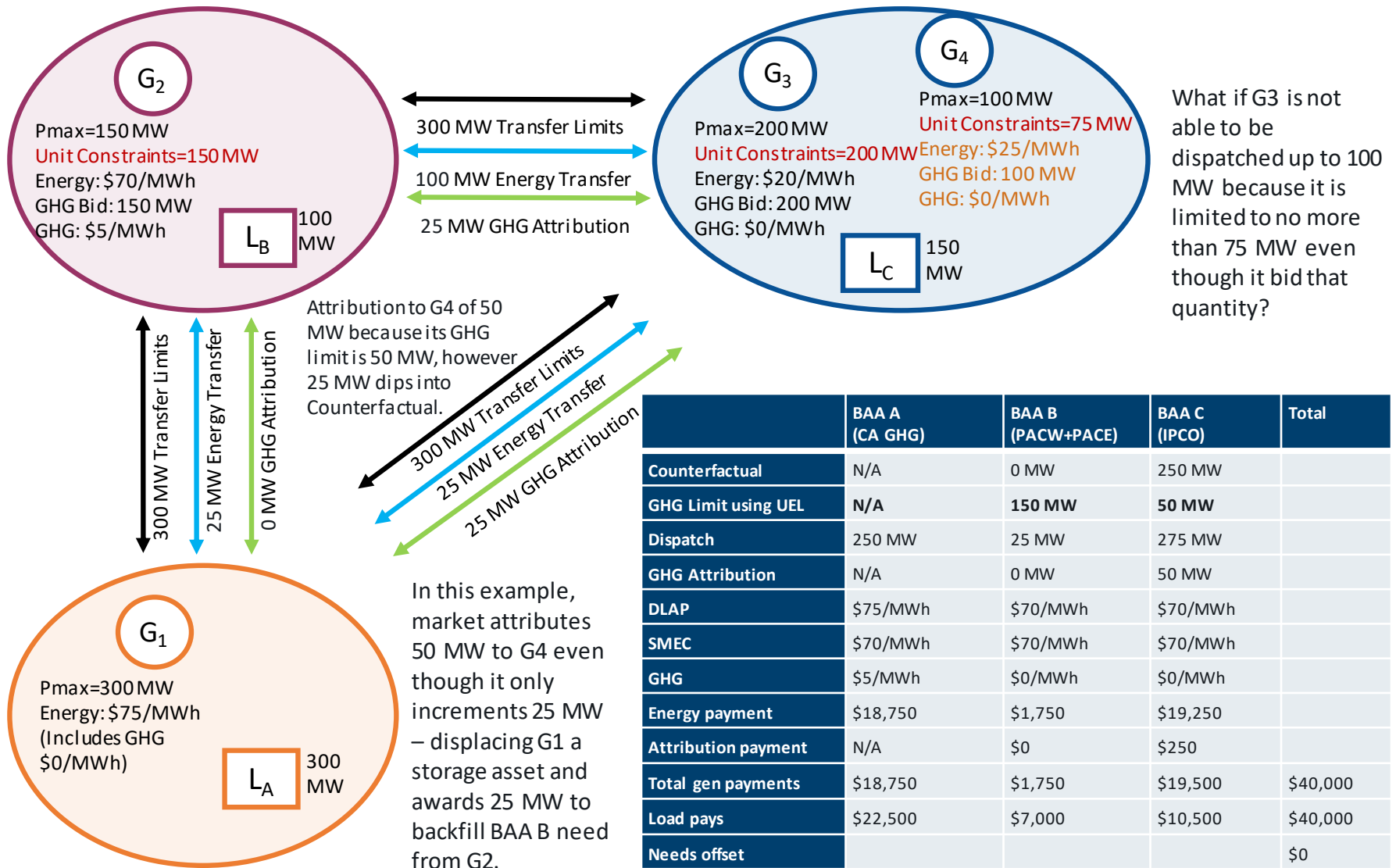
- When Integrated Forward Market (IFM) award is limited below the Upper Economic Limit (UEL) the current GHG functionality may produce attribution that overlaps counterfactual in non-GHG BAAs.
- There are instances within the market that the market does not issue awards up to UEL but does assume the resource can support GHG transfers up to UEL even if its actual award is limited.
 - Data has been shown that indicates this issue occurs in real-time, but it is unclear how persistent or the magnitude until CAISO provides their analysis on this scenario.
- This problem statement asks what is the potential market outcome of allowing attribution to be awarded to external resources that will be serving their own areas' load?
- If there is no market-based solution, is there a potential cost recovery to mitigate losses for internal resources displaced due to this market inefficiency?

Scenario 5 and 6 set up

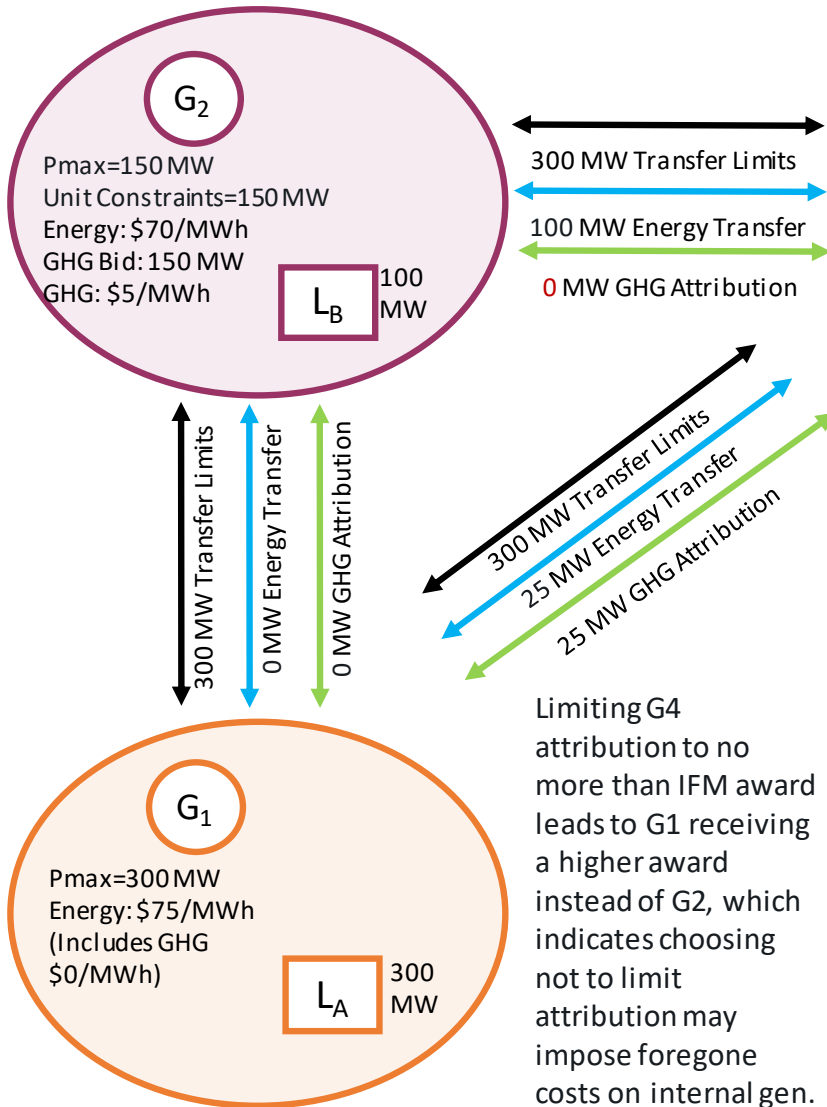
- Scenario 5 sets up hypothetical looking at market result when one of the cleaner emitting resources bidding GHG has its market award constrained more than its UEL
- Assumes:
 - G1 (storage) and G2 (gas) have the same combined offer of \$75/MWh where storage has no GHG compliance costs in its energy offer and gas asset offers \$5/MWh GHG bid
 - G1, G2, and G3 can be awarded up to their Pmax
 - G4 is limited to 75 MW out of 100 MW due to constraint in market not identified in counterfactual

- Scenario 6 explores how limiting the attribution of GHG to G4 based to no more than its awarded output below its UEL may change the market outcome

Scenario 5: 4 BAA in 2 “systems” attribution not limited to IFM – Non-GHG Area Counterfactual



Scenario 6: 4 BAA in 2 “systems” attribution limited to IFM – Non-GHG Area Counterfactual



Limiting G₄ attribution to no more than IFM award leads to G₁ receiving a higher award instead of G₂, which indicates choosing not to limit attribution may impose foregone costs on internal gen.

What if G₄'s attribution is limited to no more than award and its counterfactual?

It appears it may correct an inefficient award and payment outcome.

| | BAA A (CA GHG) | BAA B (PACW+PACE) | BAA C (IPCO) | Total |
|---------------------|---------------------|-------------------|-------------------|----------|
| Counterfactual | N/A | 0 MW | 250 MW | |
| GHG Limit using IFM | N/A | 150 MW | 25 MW (-25 MW) | |
| Dispatch | 275 MW (+25) | 0 MW (-25) | 275 MW | |
| GHG Attribution | N/A | 0 MW | 25 MW (-25 MW) | |
| DLAP | \$75/MWh | \$70/MWh | \$70/MWh | |
| SMEC | \$70/MWh | \$70/MWh | \$70/MWh | |
| GHG | \$5/MWh | \$0/MWh | \$0/MWh | |
| Energy payment | \$20,625 (+\$1,875) | \$0 (-\$1,750) | \$19,250 | |
| Attribution payment | N/A | \$0 | \$125 (-\$125) | |
| Total gen payments | \$20,625 (+\$1,875) | \$0 (-\$1,750) | \$19,375 (-\$125) | \$40,000 |
| Load pays | \$22,500 | \$7,000 | \$10,500 | \$40,000 |
| Needs offset | | | | \$0 |

Policy questions under conditions where there may be inaccurate deeming

- Since WEIM uses base schedules and there has been observed attribution that overlays with portions of a resource's base schedule due to not limiting to IFM award today then is it a logical conclusion that the issue would still occur in EDAM even if a BAA or BAA group reference pass is performed?
- If the market continues in day-ahead or real-time to attribute GHG to resources' that overlays its counterfactual and it:
 - Results in displacing internal generation, is that a fair and efficient market outcome?
 - Results in limiting attributions to other external cleaner resources that would benefit from receiving GHG attribution is that fair and efficient outcome?

Next steps recommendations

- Request CAISO update solver resource-specific example if needed
- For section 1, “accurate counterfactual” scenarios:
 - CAISO could analyze the scenarios and confirm or clarify
 - CAISO could provide additional data on how the market outcomes would change by performing non-GHG area reference pass versus BAA-level reference pass
- For section 2, “insufficient GHG bid” scenarios:
 - CAISO should build out examples of how energy and GHG prices are set during conditions with insufficient GHG bids.
 - CAISO could provide historical analysis on when GHG bids were exhausted and how energy and GHG prices were set.
- For section 3, “accurate deeming” scenarios:
 - CAISO should provide data on frequency/magnitude in WEIM of deeming that overlays counterfactual and if it leads or does not lead to displacing internal resources

Appendix



Matrix of GHG elements & high-level questions



| | Status Quo – RTM (Today) | IFM | RTM | Questions |
|--|--|---|--|--|
| Defining GHG Regulation Area(s) | CAISO BAA Boundary | Pricing nodes within, pseudo-tied, or dynamically scheduled in state geographic boundaries. | | Pricing nodes defined as in GHG by SC to identify jurisdiction, but what about non-GHG area flexibility? |
| Offering GHG | GHG internal - hourly energy bid; Non-GHG - hourly GHG bid (\$/MWh, MW) | GHG internal include in energy bid; external hourly CA GHG or WA GHG bid(s) | | Does including GHG costs in energy bids in some cases versus offering GHG compliance costs in separate bid change GHG price outcomes? Is it clear what GHG bids should be based on, or if not bidding compliance costs how does that change market outcomes? |
| Counterfactual | WEIM Base Schedules | Reference pass results allowing net transfers between non-GHG BAAs | EDAM BAA: IFM schedule - IFM GHG attributions; WEIM-only BAA: Base Schedules | Does reference pass identify baseline to accurately identify surplus from resources or a system mix (e.g., ACS or multi-jurisdictionals)? |
| Attribution limits | Limited by lower of:* GHG bid MW, optimal dispatch subject to market and resource constraints, and difference between upper economic limit (UEL) and counterfactual *never<0MW | | | Does using difference of UEL and counterfactual allow for resources that would have generated without the GHG area demand to be attributed to GHG area and displace internal GHG area gen? |
| Net Export Constraint at Non-GHG BAA Level | N/A | Does not deem if net importing BAA, allows source specified contracts out | | Does this still allow resources inside non-GHG BAA that is net importing that are incremented up providing supply of counterflow to potentially be deemed if providing counterflow on the net transfers? |