

Comments from EMUSTF Poll – January, 2015

January 14, 2015

Which components of Phase 1 are the most important to you?

(Other concepts that respondents considered most important):

- Minimizing DA Day-Ahead Uplift
- things should stay the same
- Transmission Planning Process (using Operational Performance criteria) to prevent unwarranted Reactive Services uplift
- Lowering the total amount of uplift is or should be the goal of phase 1.
- Transmission Planning Process (using Operational Performance criteria) to prevent unwarranted Reactive Services uplift.
- Retaining status quo of LOC payments or providing acceptable alternative solution. Also, adding intra-hour LOCs.
- It is appropriate to eliminate the scenarios where units are receiving a bonus simply for participating in the DAOR.
- Retaining the concept of Deviation charges in order to maintain the incentive to perform to the day ahead schedule
- Depends on allocation procedure

Do you think virtual transactions (INCs, DECs and UTCs) should be allocated uplift differently than physical transactions such as generation, load and external transactions?

- The goal should be a robust, transparent financial market. A fixed fee will encourage more financial bids and offers and will both make the market more liquid and result in more transactional activity over which to allocate uplift costs. That said, a fixed fee on INCs, DECs and UTCs should not be so low that the market is flooded with transactions that are only expected to make a few cents. Being able to converge the DA and RT markets to within 50 cents to one dollar is a reasonable objective. A fixed fee on financial transactions in this range would both give virtual traders certainty in the costs of making bids and offers while also applying some discipline to the volume of transactions that are put into the market.
- Uplift should be allocated to whoever causes the costs.
- Virtual deviations are known as soon as DAM clears and as a result have a more limited impact than Physical transaction with their inherent uncertainty and smaller pool of available resources
- Uplift should be allocated to whomever caused it, regardless of the trade type.
- All virtuals impact commitment & dispatch, can or do cause uplift, and should share in the cost.
- Virtual should be netted
- Yes, All transactions should be allocated uplift based on how much they contribute to creating uplift. Virtual transactions (UTC in particular) create much less uplift on per mwh basis than a true deviation, so their per mwh allocation of uplift should be much smaller to reflect that.
- An inc and dec on the same hour should net as other ISO's have conceded and successfully implemented.
- All market activities that affect resource commitment and dispatch should be included in the allocation of uplift costs. For transactions, we're open to an upfront fee as opposed to an after-the-fact fee to cover uplift, but there needs to be a high degree of certainty that this fee would adequately cover the actual uplift cost.
- Injections and withdrawals should net each other out. UTC's should be allocated an uplift based on their netted injection and withdrawal deviation. They have a minimal impact on the DA Market and therefore should be charged an uplift based on that impact.

- UTC's should be allocated an uplift based on their Netted injection and withdrawal deviation. Don't allocate two uplift charges on one UTC contract that should have no power balance charge.
- It is now clear that virtual transactions of all types have impacts on physical commitments and cause uplift, and as such should share in the cost. Their risk of accruing uplift charges should be considered in the decision to enter a transaction, just as it is for physical transactions.
- Allocation should be based on cost causation principles.
- Allocation should be based on Cost Causation principles. If PJM can not support a granular allocation, as other markets do, then the allocation should be based of the net impact the different transactions have on uplift. As it relates to virtuals, how much uplift is caused by INCs? DECs? UTCs? What portion of the uplift is caused by load, gen and interchange? The MISO Cost Causation Study found that the contributions to be: Interchange 30% Gen 39% Load 23% Virtual Supply 1.3% If in PJM we choose to not answer these questions then the stakeholders would be allocating cost by majority rule. Which is not a just and reasonable rate structure. I find any rate structure that is not based on cost causation to be troubling. We could have a scenario where through the allocation methodology stakeholders are having their cost socialized by other stakeholders while simultaneously limiting or eliminating the competition that an open market should foster. A cleared INC is +1 A cleared Dec is -1. $1+(1) = 0$ Energy deviation. $1+(1)$ does not = 2. As far as beneficiary pays allocation methodology and UTCs, recent independent analysis has shown that the 80% reduction in UTCs has caused the DA and RT to diverge \$1.52/mw. A \$1.52 of increased divergence multiplied by the annual PJM load is 1.2 billion dollars of increased cost to the rate payer. The rate payer is the beneficiary of UTCs transactions much more so than the UTC participant. Also, the same analysis has also shown the reduction in UTC volume has caused the BOR cost to increase.
- If UTCs are treated different in that they do not pay BORCA, they should pay a fee of some sort.
- It is now clear that virtual transactions of all types have impacts on physical commitments and cause uplift, and as such should share in the cost. Their risk of accruing uplift charges should be considered in the decision to enter a transaction, just as it is for physical transactions.
- Virtuals should be allocated like physical resources because PJM's analysis demonstrates they affect congestion.
- If you cause it you should pay it if you help alleviate it you should be compensated. Cost causation should be the overriding principle here.
- Virtual transactions should be allocated uplift based upon a market participants net position in the market.

- Cost Causation methodologies are currently working in MISO and provide the proper price signals and incentives for participants to reduce uplift. As a part of this methodology the idea of netting should be put in place for ALL participants with regard to virtual transactions. This means that only certain virtual transactions would receive uplift, more specifically those that cause a change in power balance. Therefore, all netted INCs and DEC's would receive no uplift and all UTCs (which inherently net out to a zero change in power balance) would also receive no uplift.
- Allocation should be based on Cost Causation principles. If PJM can not support a granular allocation, as other markets do, then the allocation should be based of the net impact the different transactions have on uplift. As it relates to virtuals, how much uplift is caused by INCs? DEC's? UTCs? What portion of the uplift is caused by load, gen and interchange? The MISO Cost Causation Study found that the contributions to be: Interchange 30% Gen 39% Load 23% Virtual Supply 1.3% If in PJM we choose to not answer these questions then the stakeholders would be allocating cost by majority rule. Which is not a just and reasonable rate structure. I find any rate structure that is not based on cost causation to be troubling. We could have a scenario where through the allocation methodology stakeholders are having their cost socialized by other stakeholders while simultaneously limiting or eliminating the competition that an open market should foster. A cleared INC is +1 A cleared Dec is -1. $1+(1) = 0$ Energy deviation. $1+(1)$ does not = 2. As far as beneficiary pays allocation methodology and UTCs, recent independent analysis has shown that the 80% reduction in UTCs has caused the DA and RT to diverge \$1.52/mw. A \$1.52 of increased divergence multiplied by the annual PJM load is 1.2 billion dollars of increased cost to the rate payer. The rate payer is the beneficiary of UTCs much more so than the UTC participant. Also, the same analysis has also shown the reduction in UTC volume has caused the BOR cost to increase.
- Uplift should be assigned to each transaction type.
- As proposed in Package K - Modify the current netting methodology applied to generators to allow full netting of deviations under scenarios where a resource that is replacing another is following PJM dispatch instructions. The intent of this proposal is to allow a generator the ability to hedge against being short during the Operating Day without being allocated a portion of balancing operating reserve charges if it is following PJM instructions.
- It is now clear that virtual transactions of all types have impacts on physical commitments and cause uplift, and as such should share in the cost. Their risk of accruing uplift charges should be considered in the decision to enter a transaction, just as it is for physical transactions.
- All market activities that affect resource commitment and dispatch should be included in the allocation of uplift costs. For transactions, we're open to an upfront fee as opposed to an after-the-fact fee to cover uplift, but there needs to be a high degree of certainty that this fee would adequately cover the actual uplift cost.

- Injections and Withdrawals should be netted against each other. UTC's should be allocated an uplift based on their netted injection and withdrawal deviation. A load (-1 MW) plus a supply (+1 MW) equals 0. There is no power balance change. They impact the Day-Ahead Market much differently than any other transaction, which is minimal. They should be charged an uplift based on the degree of the impact they have on uplift (small).

Should all virtual transactions be treated the same with respect to allocation of uplift, for example, each receives an identical per MWh charge based on either a rate or a fixed fee?

- Financial transactors would benefit from fixed fees. In return for this certainty, the fees need to be high enough to discipline volumes. An objective to converge DA and RT LMPs to within \$0.50-1.00 seems reasonable.
- MW neutral transactions such as UTC should not incur uplift in the same manner as virtuals as they are not creating imbalances in the system. Uplift in general creates a massive disincentive to participate, reduces competition and ultimately results in a less efficient market.
- Energy impact of UTCs is different from INCs/DECs and INCs/DECs/UTCs can cause different uplift based on date/time
- Transactions should be allocated uplift based on how much they contribute to creating uplift. Cost Causation
- A fixed fee is just a Band-Aid. The charge should reflect cost causality. Again, other ISO's like MISO have system that is specific to constraints and whether the Incs/Decs are causing the congestion or uplift.
- UTC's can only clear as a paired transaction, and only price against the congestion component of LMP. Where INC's and DEC's deal with the energy component as well. INC's/DEC's have a greater impact on uplift and should receive a larger portion of the uplift allocation.
- The contracts are all different. UTCs should have no power balance charge, unlike an INC or DEC. Moreover, if an individual UTC contract helps reduce uplift, it should not be allocated an uplift charge.
- No. A just and reasonable rate should charge uplift to virtual transactions that cause uplift. Likewise virtuals that lower uplift should not be charge uplift. Socializing cost does not send appropriate price signals. Virtuals that lower uplift should be encourage. Virtuals that cause uplift should be discouraged. An appropriate allocation methodology would encourage helping deviations and discourage harmful deviations. An appropriate allocation methodology would also differentiate between energy deviations and transmission deviations.
- There does not appear to be a real difference between an Inc, a Dec, or a UTC from a commitment/uplift perspective. We don't support a fixed fee, so our answers to the conditional questions that follow might change if that idea were to gain traction, depending on how the fees were assessed.
- Virtual transactions should be allocated uplift based upon cost causation principles. This would necessitate first netting a participants transactions, then evaluating their net position - long or

short. If the market were short generation in the real time and a market participant had a net short position, they should be allocated uplift. If in a short generation short market, a market participant held a net long position, then they should not be allocated uplift since the help to get generation scheduled that day. This would ultimately send the proper price signals to the market to get the proper amount of generation scheduled.

- The various virtual transaction should not be allocated a fixed MWh charge because not all transactions have the same impact on the grid and power balance. To blanket all virtual transactions with the same charge would send inappropriate price signals that could increase uplift and prohibit transactions that could potentially decrease uplift.
- No. A just and reasonable rate should charge uplift to virtual transactions that cause uplift. Likewise virtuals that lower uplift should not be charge uplift. Socializing cost does not send appropriate price signals. Virtuals that lower uplift should be encourage. Virtuals that cause uplift should be discouraged. An appropriate allocation methodology would encourage helping deviations and discourage harmful deviations. An appropriate allocation methodology would also differentiate between energy deviations and transmission deviations.
- We support a rate, but a differing rate fro transaction type: Inc/Dec - variable rate UTC - fixed rate
- All virtuals should be treated the same (1st part of the question), but do not support rate/fixed fee concept (2nd part of the question).
- There does not appear to be a real difference between and Inc, a Dec or a UTC from a commitment/uplift perspective.
- The transactions should not be treated equally, because they are not equal transactions. They impact the market is much different ways, and should be allocated to the portion that they cause on uplift. Spreading uplift costs equally among all participants: -Does not send appropriate price signals. -Does not discourage transactions that cause uplift. -Discourages transactions that lower uplift. -Ultimately this could be prohibitive for transactions that would potentially lower uplift.

Should the concept of allocating uplift to deviations between Day Ahead scheduled MWh and real-time actual MWh be retained?

- Potentially open to concept of rolling all deviations in Real Time.
- I have always struggled with the concept that a virtual has deviation from DA to RT. Upon scheduling the DA we already know that the balancing transaction will occur in the RT. These transactions always balance therefore should not be subject to deviations. However, if they cause uplift charges then they should be charged.
- Maintaining a Cost Causation principle would seem to make this a required element.
- Injections and withdrawals should be netted together not, DA vs. RT. For example, a power plant has a load which it needs to operate of 10-20 mw, so it can generate 500mw. Why doesn't the power plant have to pay uplift on the 20 mw of load it consumes? Because it is netted. Same for a UTC, it is a simultaneous injection and withdrawal, which nets to 0.
- There are two broad types of deviations. Helping and harming. Helping deviations should not be charge uplift that they lower. Harming deviations should be charged the uplift they cause. All helping deviations fall into two more buckets, energy and transmission. A market participant that simultaneously injects and withdraws equal MWs in the same hour should not be charged an energy deviation since there is no energy deviation. They should only be charged a transmission deviation if it is deemed that their transmission deviation was harmful. A helpful transmission deviation should not be charged uplift when they lowered uplift.
- Allocating to deviations is critical to maintain incentive for load to bid in Day-Head market with resulting optimal unit commitment.
- We want to continue to send signals that market participants can respond to.
- Allocations occur based upon the market participant's net position and its corresponding net effect on the market. Market behavior which promotes market efficiency requires pricing signals which promote the needed behaviors for an efficient market.
- No, the idea of balance (lack of deviations) should be based on the netting of injections and withdrawals as it is done with generators. This would mean that any amount of MWs netted flat with withdrawals and injections would receive no uplift and those injections and withdrawals that are not netted would receive the uplift.
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transmission deviation if it is deemed that their transmission deviation was harmful. A helpful transmission deviation should not be charged uplift when they lowered uplift.

- This is critical to maintain incentive for load to bid into day-ahead market with best possible resulting unit commitment.
- Maintaining a Cost Causation principle would seem to make this a required element.
- Depends on how netting is treated
- Uplift costs should be allocated based on the cost of the deviation. One MWh of deviation in an hour when or at a location where the LMP is \$200 per MWh is more costly to the system than one MWh of deviation in an hour or at a location where LMP is \$20 per MWh. Yet the billing mechanism assess the same uplift costs regardless of the cost of the deviation.
- This makes no sense. Injections and withdrawals should be netted together, not DA vs RT. A simple analogy: A power plant has a parasitic/auxillary load which it needs to operate the plant, typically around 10-20 MW. The power plant can generate 500 MW. Why doesn't the power plant have to pay uplift on the 20 MW worth of load it is consuming? Because it is netted. As with a UTC, it is a SIMULTANEOUS injection and withdrawal, so it nets to 0. Stripping out each "side" of a UTC is ludicrous, as it also would be to strip out the "load" portion of a power plant.

Regarding the granularity of uplift cost allocation not related to day-ahead, reactive, or blackstart, what is the appropriate level of granularity?

- We believe constraint and transaction level charges are the most likely to incentivize the desired behavior and therefore should be the preference, however without a detailed MISO like analysis, we believe the answer is someplace between Regional and Zonal
- We could support both an RTO-wide or Regional allocation.
- Beneficiary pays type model which should result in zonal costs.

Do you feel today's methodology is allocating costs appropriately?

- Fees in INCs/DECs too high (has cratered this type of activity) Fees on UTCs too low (has over-encouraged this type of activity) Fees per MWH of deviations too high. Should encourage enough INC/DEC/UTC activity to spread uplift costs more broadly and bring down per unit rates.
- The methodology should be simple. Those who cause the costs should be allocated the uplift. The validation process of identifying those who cause costs should be unbiased, transparent, explained to the market with clear logic and derived using proper analytical methods.
- It is not based on the cost-causer
- UTCs need to pay, be responsible for, uplift like other virtuals. This is not the case today and so today's methodology is not allocating costs appropriately.
- The methodology doesn't make much sense to us.
- Should be allocated along Cost Causation
- Any system that allocates costs equally across all participants should not be considered efficient. If our system is not efficient then it can not be considered appropriate. I believe this system was the easiest at the time it was devised.
- Today's methodology appears to adhere to cost causation principles. Differences between Real-Time and Day-Ahead market are caused by deviations from DA positions; if you deviate, you should bear the consequence (cost) of that deviation. Today's methodology provides proper incentive to participate in the DA market.
- The allocation of uplift during the Polar Vortex of 2014 would indicate that there is an issue that needs to be addressed. Other actions taken by PJM may help with better allocation. A regional or zonal setup for uplift should be considered.
- The deviations and reliability buckets are based on old definitions made by stakeholders, way before cost causation principals were decided by FERC as the best way to allocate costs.
- UTCs need to be responsible for a share of uplift costs just as any other virtual transaction.
- Because it is not based on cost causation.
- No. The current allocation methodology is not based on cost causation but rather is a negotiated rate structure which is not just and reasonable. Currently only some market participants are able to net their portfolio of transactions with IBTs. The principals behind IBTs are sound and recognize that portfolios that simultaneously inject and withdraw energy have minimal impact on uplift. Only a transmission deviation should apply if such transmission deviations caused uplift. That said, market participants should not be required to enter IBTs, PJM should automatically net each market participants injections and withdraws.

- We prefer not to change anything in uplift cost-allocation except to add a charge for UTCs because they also contribute to uplift. Status Quo with UTC tweak favored.
- Because the incentives to transact in the market are different for each participant. Socializing costs that are not aligned with incentives creates an "almost pregnant" state. It can lead to manipulation, wash trades, and gaming the rules. The reason we have an LMP system is to insure that incentive and signals are aligned properly. When costs are not allocated properly (and I don't believe they are in PJM - or the other ISO's) capital allocation models suffer and liquidity and transparency will also suffer.
- UTCs need to be responsible for a share of uplift costs just as any other virtual transaction.
- The current methodology seems arbitrary and, to some parties, often puntative. The methodology should be based on principles of cost causation and the current resolution systems should be brought up to the task of managing this.
- Absolutely not. The "Deviations" and "Reliability" bucket are based on bizarre definitions that were decided upon by stakeholders and don't seem to make any sense. If a unit is operating to serve load or voltage problems "Reliability" then it should be allocated the "Reliability" bucket. The "if LMP > offer for 4 intervals in an hour" rule makes absolutely no sense.
- The methodology should be based upon cost/causation principles alone.
- No. Several pieces of the current methodology do not create a fair and just rate for market participants. The distribution of costs to the "Deviations" and "Reliability" buckets is based on definitions that at best seem to be outdated and should therefore be changed. Further, the concept of netting should be available to all market participants.
- No. The current allocation methodology is not based on cost causation but rather is a negotiated rate structure which is not just and reasonable. Currently only some market participants are able to net their portfolio of transactions with IBTs. The principals behind IBTs are sound and recognize that portfolios that simultaneously inject and withdraw energy have minimal impact on uplift. Only a transmission deviation should apply if such transmission deviations caused uplift. That said, market participants should not be required to enter IBTs, PJM should automatically net each market participants injections and withdraws.
- We prefer not to change anything except add a charge for UTCs because they also contribute to uplift. Status Quo.
- BOR cost allocation should be more granular (i.e. at the zonal instead of regional level).
- UTCs need to be responsible for a share of uplift costs just as any other virtual transaction.
- Today's methodology appears to adhere to cost causation principles. Differences between Real-Time and Day-Ahead market are caused by deviations from DA positions; if you deviate, you

should bear the consequence (cost) of that deviation. Today's methodology provides proper incentive to participate in the DA market.

- The results of the allocation is in excess of 90% allocated to deviations which is too high a percentage. The 4 interval rule is inappropriate as units are called on for reliability and costs allocated to deviations.
- Cost of the deviation is not recognized.
- Absolutely not. The "Deviations" and "Reliability" bucket are based on bizarre definitions that were decided upon by stakeholders and don't seem to make any sense. If a unit is operating to serve load or voltage problems "reliably" , then it should be allocated to the "Reliability" bucket. The "if LMP > offer for 4 intervals in an hour" rule makes absolutely no sense.
- The 6 interval test for whether BOR fees are assessed to reliability or deviations lacks logic. Also, LOC payments should be allocated based on whether the units were committed based on reliability or deviations, and not all go to deviations.
- UTCs are not included in the allocation of uplift and should be. The allocation logic also needs to be made simpler.

Do you believe that reactive and blackstart costs should be allocated differently than Balancing Operating Reserves? Today these costs are allocated to either RTO or zonal load depending on the scenario.

- Black start uplift is rightly zonal. Reactive is not necessarily for a single zone, but this is closer than an east/west or RTO-wide allocation. Inclusion of reactive uplift as a driver for RTEP projects could help to decrease the dollars in this category over time.
- No Comment
- Especially in light of the changes made to the black start/system restoration cross-zonal changes.
- Load should pay because they benefit
- They should continue to be allocated to load because they are for reliability.
- A large percentage of these charges were incurred zonally in 2014, indicating local issues. These should not be allocated RTO-wide.
- Reactive and blackstart costs are very much dependent on legacy practices and infrastructure that can (and does) vary greatly among Transmission Owner zones, accordingly, it is appropriate to allocate these costs on a zonal basis. As an example, today's cost consequence of a TO utilizing a blackstart/restoration strategy based on ALR units should not be socialized to other zones.
- Load is the one who benefits, so they should be allocated the costs.
- We're not seeing a strong argument for change in the status quo of reactive and black start allocations, but do believe there can be more transparency in how the determinations are made to charge to either RTO or zonal load.
- Reactive and blackstart costs are very much dependent on legacy practices and infrastructure that can (and does) vary greatly among Transmission Owner zones, accordingly, it is appropriate to allocate these costs on a zonal basis. As an example, today's cost consequence of a TO utilizing a blackstart/restoration strategy based on ALR units should not be socialized to other zones.
- Who benefits from these services, load or financial transactions? Load. Load is the only beneficiary of these products, and it should be allocated to them.
- Keep same allocation for reactive and blackstart.

- We do not see a strong argument for change in the status quo of reactive and black start allocation, but there should be more transparency in how the determinations are made to charge either the RTO or zonal load.
- Load is the beneficiary of these services therefore these cost should be allocated to load.
- We're not seeing a strong argument for change in the status quo of reactive and black start allocations, but do believe there can be more transparency in how the determinations are made to charge to either RTO or zonal load.
- Load benefits from these services and therefore should pay the costs.
- Load is the only beneficiary of these products and should be allocated to them. Not financial transactions.
- Load is the beneficiary of these services therefore these cost should be allocated to load.