FEDERAL ENERGY REGULATORY COMMISSION

Technical Conference on Financial
Transactions in PJM

Wednesday, January 7, 2015

Hearing Room 2C
888 First Street, N.E.
Washington, D.C.20426
9:00 a.m.
Docket No. EL14-37-000

COMMISSIONERS:

MICHAEL GOLDENBERG

FERC STAFF:

MIKE MCLAUGHLIN: Policy Office
SCITT EVERNGAM: Energy Market Regulation East
JAMES BRENNAN: Energy Market Regulation
ERIN MASTRANGELO: Office of Enforcement
WILLIAN SAUER, Policy Office
CATHLEEN COLBERT:Office of Enforcement
JAMES MATSON:Office of Enforcement

FERC STAFF:(continued)

SHAWN BENNETT: office of Enforcement

CARMEN MACHUGA: Office of the General Counsel

KAREN VILLATORO: Energy Market Regulation East

JASON FEUERSTEIN: Electrical Liability

PANEL 1: FTR Foreclosure Rule Goals and Design

PANELISTS: Noha Sidhom, Inertia Power LP

Harry Singh, J. Aron & Company

Joseph Bowring, Monitoring Analytics

Stu Bresler, PJM Interconnection LLC

David Patton, Potomac Economics, Ltd.

Panel 2 Uplift Causation and Allocation

PANELISTS Abram Klein, Appian Way Energy Partners

William Hogan, Harvard University

Joseph Bowring, Monitoring Analytics

Adam Keech, PJM Interconnection LLC

David Patton, Potomac Economics, Ltd

Wesley Allen, Red Wolf Energy Trading

Stephanie Staska, Twin Cities Power

Scott Holladay, Yes Energy

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P R O C E E D I N G S

MR. SAUER: Good morning, please take a seat and turn off your cell phones.

Welcome to today's Technical Conference on "Up-to-Congestion or UTCs Transactions and Virtuals or INCs and DECs and PJM Interconnection.

I want to thank all of the participants for being here today for what I am sure will be an informative and lively discussion.

We will use the time today to explore whether PJM's financial transmission right or FTR Forfeiture Rule, as it applies to UTC and INCs and DECs, is just and reasonable.

We will also explore whether PJM's current uplift allocation associated with UTC transactions and INCs and DECs is just and reasonable.

There will be two panels today and we will begin each panel with a brief introduction from staff and presentation or statements from panelists.

A time clock will be counting down for five minutes it will also be displayed during the presentations and statements, and for reference, there will be a yellow light when there is one minute left.

Following presentations of statements, staff

will ask questions.

All materials received will be posted to the calendar pages on FERC.gov and on e-Library under Docket EL 14-37.

For the first panel. staff from PJM, the PJM Market Monitor, the PJM or the Market Monitor for sub or other markets, and as well as several PMR market participants will discuss PJM's FTR forfeiture rule as it applies to INCs. DECs. and UTC transactions.

This conversation should focus on the goals of the FTR Forfeiture Rule and different ways of structuring FTR Forfeiture Rules design.

For the second panel, staff from PJM, the PJM Market Monitor, and Market Monitor from sub or other electricity markets as well as staff from PJM, as well as several PJM Market participants, will explore the circumstances under which INCs and DECs and UTC transactions may cause uplift in PJM, and if so, how INCs, DECs and UTC transactions should be allocated uplift charges.

We will break during the middle of each panel. There will also be a lunch break from noon to 1:00 PM and we plan to warp up today around 4:45.

We have a lot of ground to cover with a short amount of time today and we would like the panelists

to keep their comments within topics laid out for each panel.

If the discussion begins to stray outside the scope of the panel or outside the scope of the question, we may be interjecting to bring the discussions back to topic.

Additionally, this topic is not for the purpose of discussing or hearing argument related to specific cases before the Commission.

Please refrain from discussing the specifics of pending cases even if they are tangentially relevant to issues raised in this docket and that will prevent us from having to redirect the conversation to issues related to ER 13 - 54 may be discussed.

Let me close with a few housekeeping matters. Please do not bring food or drinks other than bottled water in the Commission Meeting Room.

Turn off your cell phones if you have not done so already. There are bathrooms and water fountains behind the elevator banks so if you will just go out either door, make a left, going past the elevators.

For panelists. if you would like to be recognized to speak, please place your tip card up - a quick illustration - we likely will not be calling on anyone directly, but if there is a point of

discussion just signal to us and we will call on you.

Please turn your microphone on and speak directly into it. If you're not speaking, please turn your microphone off to minimize background noise.

Before I introduce Panel 1, and its panelists let me turn to staff at this table and let them introduce themselves.

MR. MCLAUGHLIN: Mike McLaughlin of the Policy Office.

MR. EVERNGAM: Scott Everngam. Energy Market Regulation East.

MR. BRENNAN: James Brennan, Office of Energy Market Regulation.

MS. MASTRANGELO: Erin Mastrangelo, Office of Enforcement.

MR. SAUER: William Sauer, Policy Office.

MS. COLBERT: Cathleen Colbert, Office of Enforcement.

MR. MATSON: James Matson, Office of Enforcement.

MR. BENNETT: Shawn Bennett, Office of Enforcement.

MS. MACHUGA: Carmen Machuga, Office of the General Counsel.

MS. VILLATORO: Karen Villatoro, Office of Energy Market Regulation East.

MR. FEUERSTEIN: Jason Feuerstein, Office of Electrical Liability.

MR. SAUER: Thank you. Turning to Panel 1, as discussed in the opening statement, the goal of this session is to focus on PJM's FTR Forfeiture Rule as applies to INCs, DECs and UTC transactions.

This panel will cover several different topics including the goal of the FTR Forfeiture Rule and whether and how the FTR Forfeiture Rule should be applied consistently for INCs and DECs and UTC transactions and additional design considerations.

Before we go to questions from staff we will want to introduce the panelists. Thank you very much for showing up. We appreciate your time and well thought remarks on these matters.

Certainly, this could not have happened without everybody here. We can proceed in order, so let me introduce David Patton from Potomac Economics, Stu Bresler from PJM, Joe Bowring from Monitoring Analytics, Noha Sidhom, from Inertia Power and Harry Singh from J. Aron & Company, so thank you all.

As discussed in my opening remarks, we are going to allow presentations from panelists. We will do

that now, so let us begin with Stu, then move to Joe, Noha, Harry and last David.

MR. BRESLER: Thank you, Wil. Good morning to you and to the remainder of the FERC staff who are present today.

It is certainly always a pleasure to participate in these kinds of conferences and to be before you this morning.

What I thought I would do in my brief remarks to open the conference today is really to address at a high level what staff was looking for from today's conference from the standpoint of background material which is the basic reason for why PJM implemented an FTR Forfeiture Rule, and then a high-level overview of how that rule works and then finally an indication as to PJM's current position with respect to the effectiveness of that rule in its ongoings with justice and reasonableness as far as its ability to detect and mitigate the behaviour for which it was designed.

If we could now move to Slide 2 in my presentation.

As was noted in the announcement for today's Technical Conference, PJM initially filed the FTR Forfeiture Rule that we have in place today back in

December 2000.

We did so in response to behaviour that we directly observed in the PJM day ahead market and that behaviour was related to market participants who had procured FTRs on pass that were essentially radial on the system, and when we say radial, what we mean is that one side of those paths at the very least does not have many, if any, network connections with the remainder of the system.

As a result from a standpoint of virtual trading on the system, it is illiquid, in other words, there is not much trading activity at those points, again, because of their relatively isolated nature of the electrical system.

The participants would then utilize INCs and or DECs in association with those FTR paths in order to increase or inflate congestion in the day ahead market thereby increasing the value of those FTR's that were purchased when we really never ever saw congestion on those paths, otherwise absent those virtual transactions.

That congestion was present in the day ahead market, but did not appear in real-time because the physical flows in that path did not cause that congestion.

Due to the illiquid nature of the trading points that were associated with these paths, there was not much competition from the standpoint of other virtual transactions, and therefore, participants were able to, if you will, manipulate the value of their FTRs by virtue of their virtual activities.

We can skip to Slide 4 of my presentation and there are a few slides here with the basic example as to how this behaviour worked.

Slide 4 is sort of the crux of that example. Essentially, here we have a graphical representation of what amounts to a radial path with a load at one end of it.

In this example a participant could procure an FTR up to the rating of that radial path. The physical flow on that path did not approach that rating absent virtual trading in the day ahead market, so the participant would utilize a virtual trade, and in this example, a DEC at the receiving side of that congestion in order to increase the flow in the day ahead market on that path up to that rating, thereby cause congestion and increase the flow and the value off the FTR.

You can see on the next slide, but I will not go through it in detail due to our short time this

morning, but you can see the way the settlements would work out in this example, and the fact that while the participant would lose some money on the virtual trade, it will make more as a result of the inflation of the congestion and the FTR revenue that is received.

On Slide 6 there is a quick summary of the implications of the behaviour. The behaviour did not enhance market efficiency, in fact, it caused a divergence of the day ahead market prices relative to what we actually saw in realtime, but because of this behaviour the market participant could clearly a profit.

Slides 7 and 8 of my presentation outline some of the components of the current FTR Rule.

The basic point I would make here is that really the rule is targeted at this specific behaviour.

When you look at those things that are automatically excluded from even being evaluated as part of the rule, virtual trades at hubs, zones, interfaces, really what you would expect to be liquid trading points are not even considered, and the same goes for FTR paths at those types of points.

Further, in order to be evaluated for the FTR Forfeiture Rule, a virtual trade has to have a

significant impact on an FTR path that is constrained and we use a 75% criteria to determine whether that is significant.

Let me conclude with Slide 9 as the remainder of my slides are some more examples that can be perused at your leisure, although, basically PJM believes that the current FTR Forfeiture Rule remains essentially as just and reasonable as it was the day it was filed.

It is appropriate because it is extremely targeted and looks to identify only the behaviour that could be considered to be manipulative.

It relies on an assumption that the vast majority the system is very competitive and liquid as far as trading is concerned.

Although we do believe and we can get into this discussion later on, but the rule could be improved with respect to how INCs and DECs and those virtual trades are evaluated with respect to that 75% and we can go into that detail as our discussion continues.

Thank you very much.

MR. SAUER: Thank you. Joe, give us a moment while we load the presentation.

MR. BOWRING: Thank you for the opportunity to be here this morning to talk about this topic. You

will be relieved to know that I will not go through the whole slides, but I may rely on them later on for examples to highlight parts of the discussion.

I will be very brief and talk at a somewhat high-level about the FTR Forfeiture Rule.

The goal of the FTR Forfeiture Rule, and I agree with Stu, was and is to prevent manipulation of the market by market participants, taking frequently, losing, and relatively small virtual positions in order to make larger FTR positions profitable or more profitable.

So it is about manipulation.

The FTR Forfeiture Rule is a clear rule with defined consequences, but there are trade-offs when using a rule-based approach rather than a case-by-case approach.

No rule is going to be perfect. There will always be some Type I, Type II errors catching some people who probably should not be caught and not catching those who should be caught.

A rule that is clear, is known ahead of time, and automatically enforced, and that is the way the FTR Forfeiture Rule works, but obviously, a rule may miss some specifics of particular situations.

A case-by-case approach in my view creates more

uncertainty. It increases the chances of different outcomes. It is much less efficient and much more time-consuming for monitors, for RTOs and ISOs, and for market participants.

In applying a rule, it is possible to deter some benign behaviour, some benign ritual activity, and it is also possible to permit some manipulative activity.

But it makes sense, again, in my view to err on the side of over-enforcing rather than under-enforcing - I know that that comes as a great surprise to you - but the reason is that there is no evidence whatsoever, and we do have a strong rule in place, there is no evidence whatsoever that that has deterred any virtual activity, that is, there is no reason for only FTR holders on particular paths to engage in virtual activity to cause or to take advantage of price difference between dead and real-time.

There are very low barriers entering that market and there is no reason to believe that having a strong FTR Forfeiture Rule has had any consequences whatsoever.

The consequences of over-mitigating are very small and the consequences of under-mitigating are

quite large as to permit the exercise of market power.

Nonetheless, it is possible to make the rule better, and I will suggest some ways to make it better in the details of the conversation, it comes up and we have some other more precise approaches.

The FTR Forfeiture Rule should be applied to Up-to-Congestion transactions in exactly the same way it is applied to other virtual transactions.

Currently, that is not the case as there is a significant difference in results and my last two slides just demonstrate the difference between the way that PJM has applied it in a way we think it should be applied.

The FTR Forfeiture Rule should also be applied to counterflow FTRs. There is no reason that counterflow FTRs should be left out of this process and currently that's not the case.

As I indicated, I do have slides that show how the FTR Forfeiture Rule works, how it would work with UTCs, how it works under PJM's view of the appropriate way to apply of UTCs and how it works under the way the market monitoring unit thinks it should apply to UTCs. Thank you and I look forward to the discussion.

MS. SIDHOM: Thank you for the opportunity to be here today. Back to our forfeiture rule. It simply does not make any sense as it stands today.

For INC and DEC transactions, the rule takes into account MIDEC and the worst deposing INC placed by another market participant and vice versa.

I have no idea what that data looks like. My FTR trader does not even know what my virtual trader's transactions are let alone virtual transactions placed that by another company.

There's no other market manipulation mitigation rule in any market that assumes collusion and intent.

For Up-to-Congestion transactions, IMM proposes that we take the transaction apart, pretend the other side does not exist and treat it like a separate INC/DEC. That is a lose-lose scenario for any entity with a trading arm.

UTCs are less profitable than INCs/DECs because they don't include the energy component, so I am now putting on a less profitable transaction that has twice the chance of forfeiting my FTR position.

The only reason I would propose this approach is to kill the UTC product which it already tried to do on several occasions.

There have been two battlegrounds to this UTC

debate. The first is the fee debate which is the subject of the second panel.

But just to give you some background.

We have had not one, but two task forces to address this issue about UTCs paying fees.

Both task forces were initiated by the IMM and both task forces voted down the idea of UTCs paying the fee.

I really wish we had collateral estoppel in the PJM stakeholder process because we would save a lot of time.

Market participants want a short-term hatch. The uplift for INCs and DECs is too high and too volatile and the credit policy is overly onerous and now with the proposed change to tax UTCs at the highest rate there are no other short-term products.

This ties into a lot of other things that the Commission really cares about, infrastructure development, distributor generation, and reliability.

There are a lot of participants out there that don't have the funds to transact an FTR market. They are highly leveraged due to development costs and they can't get the credit facilities.

We get approached by wind facility owners all the time that have projects that are coming on 2016,

the end of this year, and they want someone to provide a credit backing for them so they can hatch.

The second battleground was ensuring that UTCs and INCs/DECs have equal treatment under the rule even though they are not equal transactions. This is when PJM discovered how the IMM wanted to implement the forfeiture rule to UTCs.

The debate amongst the stakeholders was not about applying the forfeiture rule to UTCs, it was about how the forfeiture rule is being applied in general.

Market participants did not understand how the IMM wanted to apply it.

All it wanted was a transparent rule and a way to tell if they were tripping the rule to avoid an enforcement action because the enforcement action is a much bigger risk to our business than the financial implications of forfeiting your FTR position.

The rule as designed is punitive and it hurts the short-term market.

Furthermore, the only case as of late where we have had a market participant utilizing an INC or DEC to increase the value of its FTR position was the Louis Dreyfus case in MISO, a market that does not have a rule.

But if we have to have a rule, the rule should only take into consideration each company's position and not positions put on by another unaffiliated entity that we do not have any information about.

The rule should also take volume into consideration and right now it does not matter if my DEC is 5 MW or 100 MW.

The rules should only clawback the increase in that entity's FTR position and not the entire profit.

This removes the incentive for bad behavior, but it does not penalize the market participant for taking a short term position.

That is what California does. Expedite the process for putting the market participant on notice that they have triggered the rule.

Right now I do not see that forfeiture on a billing statement until two months out.

And finally. Transparency, transparency, transparency.

As a compliance officer in my company, I need to know the screen for tripping a tariff rule and right now we can't do that.

There are a couple of suggestions that have been made in the stakeholder process that we think are worth further dialogue.

First, is looking at a market participant's entire portfolio for its effect on its FTR position. I do not know what that data would look like to be able to tell you, that, "Yes, that's a good idea or is a bad idea."

We need to further explore that.

Second, is utilizing a load weighted LNP or a generated LNP as opposed to the words opposite positions as this approach could be a good compromise.

There is one last issue that I want to set the record straight on. Up-to-Congestion transactions do not have a harmful impact on the market and in fact the very opposite is true.

Up-to-Congestion transactions highlight the modeling in inefficiencies in the network model and they are profitable when they highlight those, the modeling inefficiencies, unless they get a payment out of the balancing congestion bucket.

I want to be very clear. They don't know that that is a modeling issue. All they see is the price spread.

But more importantly if it is not UTCs that are getting paid out of that balancing congestion bucket it will be INCs / DECs or for imports / exports or

several types of transactions that get paid out of that balancing congestion bucket.

Those arguing that UTCs get paid out of the balancing congestion bucket is harmful to the market is essentially saying, "Don't take money out of my pocket, take it out of theirs," and that is the fundamental problem with the stakeholder process and that is exactly why we need the Commission to step in and ensure that if an FTR Forfeiture Rule is in place that it is clear and transparent and that both INCs / DECS and UTP's are incented by their appropriate allocation of fees.

MR. SAUER: Thank you. Give us a moment while we set up your presentation.

MR. SINGH: Thank you for the opportunity to participate. I want to make three points.

Turning to Slide 2, my first point is in looking at the big picture on the relationship between virtual transactions in general which includes INCs, DECs, UTCs, and uplifts, I happen to share the IMM's concern that there is on the one hand a benefit in terms of price formation improvement from these transactions which, for example, Noha highlighted, and on the other hand, there are instances where they contribute to uplifts.

The place where I differ, and I hope this is the question that someone will discuss in the second panel is if, for example, you can show that virtual transactions contribute to an uplift such as a negative balance to congestion, should there be an effort to assign that particular uplift back to them, or do you want to go and double charge them for the BORs, or instead make the forfeiture rule more punitive to address it in a different manner, so that's a question that I will put off to the second panel.

Turning to the next slide. There has been a lot of discussion on inconsistencies in the application of the forfeiture rule to UTCs in these proceedings, so I wanted to highlight another inconsistency that I noticed and this is something that relates to the definition of the FTR that is assumed in the forfeiture rule and the actual definition of the FTR and PJM.

The actual definition of the FTR and PJM is a combination of day ahead and real-time but the definition assumed in the application of the forfeiture rule is an ideal target revenue-based definition that only looks at the day ahead market and the two looking at the past few years can be very

different.

I will not say anymore on that given that that question relates to another proceeding except to say that until one can understand what the definition of the product is as it's kind of hard to discuss the forfeiture rule.

Finally, turning to a disagreement between PJM and the IMM on whether the application of the forfeiture rule is being done correctly to UTCs, and whether this approach that is in place now amounts to a contract path approach, and ignores physics, I wanted to highlight on the next slide the concept of how shift factors works in a network.

If you have a constraint between the two yellow dots and that network that you're interested in, and you want to know what the impact of an injection at Bus-A will be in terms of the increase in flow on that line, you typically ask the question, "What is the sensitivity or the shift factor or the power transfer distribution factor, the PTDF, for that injection at that node and that line?

The answer to this question inherently involves making an assumption on a Reference Bus or Slack Bus, and depending on what assumption you make, you will get a different answer and the approach that has been

in place for INCs and DECs is to make the worst-case assumption so the most conservative assumption which gives you the highest impact.

That's not something that's consistent with physics. That's not how the power flows, but it's a design choice and we have chosen to do that and that's fine.

When you look at the question of UTCs you actually know the location of both the injection and withdrawal.

In this case you have two shift factors and the impact of the Reference Bus cancels out, so when you ask the question, "What is the impact on flow or what is the sensitivity of the flow on that line or constraint relative to the injection and withdrawal?" the reference is irrelevant.

From the way I studied my electrical engineering texts, and I'm happy to lend them to Joe if they will help, PJM is doing it exactly right.

That doesn't mean that that's the choice that we should make. If our objective is to make the forfeiture rule more punitive and more stringent, it's fine to do it as a separate INC and a DEC, but I just wanted to clarify, for the record, that what PJM is doing is not the contract.path approach, it is the

correct approach consistent with physics.

Thank you.

DR. PATTON: I will give you a slightly different view than have some of the panelists.

There is effectively no forfeiture rule in any of the markets that we monitor. There is technically one in New England, but it is applied in such a way that it effectively never forfeits FTR revenues and we have never recommended that any market put one in.

It is not because it didn't occur to us to think about it. Every time we have evaluated a forfeiture rule, I have come to the conclusion that the costs are greater than the benefits for the following reasons.

One is, at any time we design a market power mitigation rule we try to adhere to a principle of designing a rule that is not going to impede competitive behavior and I don't think it is possible to design a forfeiture rule that doesn't impede competitive behavior.

With regard to virtuals and the ownership of FTRs, virtuals that are profitable are in general competitive and beneficial to the market, they are profiting because they are bringing about convergence between day ahead and real time.

If in bringing about convergence happens to increase the value of somebody's FTR, then most forfeiture rules will kick in, so that violates my principle right off the bat, and you could say, "That is easy to deal with, just have a screen that we don't forfeit FTR revenues from profitable virtuals," and while that seems like it would make sense, the problem is you have to recognize that the way virtuals make money as they are arbitraging day ahead and real-time differences where the real-time is extremely volatile, and we have had a problem with congestion in particular being convertual in MISO where we don't have Up-to-Congestion transactions. I have been proposing them for three or four years to try to resolve that.

What if you had congestion that on a constraint were it bound 60% of the time and the shadow price was $1,000, and the other 40% of the time it is at zero, so the average shadow price is $600.

You see someone put in the UTC transaction saying, "I'm willing to take this position as long as the congestion doesn't exceed $500," so they are going to expect to make $100 on the flow on that constraint.

To me that is clearly competitive, so what would

a forfeiture role do?

A forfeiture rule, if I happen to own an FTR that impacts that constraint, 40% of the time it would look like the participant has a virtual transaction that's losing money, contributing to congestion and they would lose FTR revenues.

Now that is unambiguously bad because the convergence that that transaction brings about causes me to commit physical resources to help manage that constraint in real-time.

This is manipulation and the Commission has rules on manipulation and enforcement activity that can easily be applied to this which is why it is not necessary to have a rule and it gives you a false sense of security to even have a rule.

What I like to tell people on the side is, "I'm not worried about the bank robber who comes wandering in without a mask on and stands in front of the security camera," and that's effectively the people that would be caught by this rule because it is very easy to see what they're doing.

The participants I'm worried about are not the ones that hold FTRs and then engage in transactions that I can easily see are impacting their FTRs.

They are the ones that somebody else holds the

FTRs and they have a financial contract with them, they have a contract for difference or something else that is the vehicle for reaping the profit from the transaction.

If I rely on enforcement to address that which is the much more serious concern because those are the sorts of strategies that could actually be successful, applying that same framework to strategies that would increase the value of FTRs is relatively straightforward.

It is noted that FERC took enforcement action against this sort of strategy in MISO, and I will say from the time we referred it to the time the FERC took action, it took a couple of years and probably it could have gone quicker.

What that illustrates is that it is hard to design a bright line test that will give you the right answer, that it is fact specific, that you have to look at what the prices have been, and what the congestion has been in the region, to really be able to determine whether the virtual strategy you are seeing is actually manipulation or is not.

I would be happy to address the detailed question on design questions during the question and answer period.

MR. SAUER: Thank you all. Let me just follow on a couple areas where I sense some possible disagreements among the group and turn it over to other brighter minds at the table and certainly brighter minds than mine.

Both Joe and Stu. What seemed to be the primary goal of the FTR Forfeiture Rule, an august one, which is to prevent manipulative behavior from happening?

Are there other goals that other panelists see that any FTR Forfeiture Rule should accomplish and how is the application of the forfeiture rule, the current application of the forfeiture rule on PJM is it consistent with those goals or inconsistent with those goals?

Volunteers?

MR. BRESLER: I would agree with both Dr. Bowring and Dr. Patton regarding the goal of having a rule. Joe referred to two types of error in the rule, was it Type I, Type II, or Type A and Type B, but one of them is catching the ones you should not have caught and the other is not catching the ones you should have.

As to Dr. Patton's point, the only way to effectively design an FTR Forfeiture Rule in a market like what PJM operates is really to catch the obvious

ones because the less obvious ones are going to take much more analysis and you can do any bright line bid by bid, hour by hour type analysis, as it is more a longer-term sort of behavioural type to analysis.

The way I see the goal of the FTR forfeiture rule that PJM has been executing is to essentially filter out the obvious and to do so in a way that you minimize the obvious ones that you miss and at the same time minimize anything that was really not intended in any way, shape or form to be manipulative behavior, but got caught up in the net anyway.

That articulates the two goals of having the rule. I don't see anything outside of those goals that are specific to manipulative behavior that the goal is trying to address.

That is really what it is limited to.

MR. BOWRING: We want to catch the guys who walk in with not a mask as well. That is my primary comment.

The second is, of course, and I agree with what Stu said, but of course the rules don't find every possible form of manipulation, that is not the intent, they catch what they can and that does not mean that we are not going to continue to look and David is not going to look for other forms of

manipulation.

MR. SAUER: There was something indiscriminate that I had heard was whether the existence of the FTR Forfeiture Rule is limiting liquidity?

Certainly, Joe seemed to say, "No, it is not." Some of the other panelists, Dave and Noha, they said from what I heard, "Yes, it is."

Would you expand upon that and particularly touch on instances where there might be limited liquidity or where that rule might be limiting liquidity for virtuals, UTCs that are essentially a false negative or might be deterred from even participating in the market for one reason or another.

Anybody?

MS. SIDHOM: Essentially, if you are going to participate in both INCs, DECs and FTRs, right now I cannot tell if my DEC position is going to cause me to forfeit my FTR position.

FTRs are more capital intensive. They are more profitable. They are a totally different animal.

Why would I want to take that daily position? That is probably not going to bring as much profit for me if I could risk the position that is more long term that I have invested more capital.

That is where it is hurting liquidity.

Market participants cannot screen for it so they essentially are saying, "Maybe I will transact INCs / DECs in one region of the ISO and FTRs in the other, or I am only going to do one or the other.

MR. BOWRING: Even if that were true, and it might well be, the question is: Does that have any negative impact on the market? The answer is no.

There are very low barriers entry to participating as INCs and DECs. There is reason to know the company has to do both in the same area. There is no reason that you cannot have different participants doing both.

There is no demonstrable impact on liquidity, and I have not heard anyone suggest any evidence that there has been any impact on liquidity.

DR. PATTON: Yes, a couple of comments. I agree 100% with Joe. It does appear there are low barriers to entry to INC, trading INCs and DECs, although in the real world the sort of analysis that Polanski had identified where to buy and sell FTRs is very similar to the analysis on where you should be trading virtuals, what our experience has been is that there are not a huge number of companies that have developed that capability at this point to do that

well.

Not obviously because the Forfeiture Rule, but we have seen a number of companies feel compelled to make a decision whether to trade one or the other and think that that's been harmful in MISO.

Secondly, any rule that creates risk that is not really related to the purpose of the rule is going to impact liquidity.

One thing that seems bothersome potentially in that regard with the PJM forfeiture rule is this idea of choosing some other point when you are evaluating the virtual position of a trader, the most harmful point.

That most harmful point happens to be on the other side of a radial constraint and I don't think this has happened in PJM from what I understand because very little FTR revenues are being forfeited, but that assumption could cause a whole bunch of people to lose FTR revenues where their side of the transaction really has no impact on the radial constraint.

It is just this other side that you happen to have picked, but to the extent that would create risk it is going to affect people's behavior and liquidity.

MS. SIDHOM: First, I completely disagree with Joe that there is nothing bad about people in transacting splitting the market up or not transacting a certain product.

You want to have a mix of both long-term positions and short-term positions. It is better for diversity for the company and it is better for diversity for the market. It's just good hedging.

That is exactly why I said the volume piece of my example, because if I have a 5 MW DEC, and someone else has a 100 MW INC, and that is what causes me to forfeit, why would I have ever put on that 5 MW DEC? That does not make any sense.

If I can screen for the rule, fine, let's have a rule, but do not have a rule that I completely cannot screen for. That is punitive.

MR. BRESLER: I really have a hard time speaking to the liquidity issue only because I cannot speak for what market participants would have done if they hadn't done what they did as it is a very difficult estimation for us to make.

I would point out as others have said, really, the sole issue that PJM has with the rule, and we will get to it later, I do not want to jump ahead is this issue that been brought up about the evaluation

of one market participant's activity against another's activity to determine whether or not they trigger the rule.

That is really problematic. It seems to me we ought to have a rule that market participants can determine going in whether or not they are at risk of tripping and I don't think they can do that today.

MR. SINGH: My concern would be that a lot of market participants such as ourselves are really involved in trading that relies on the price formation on the spot markets, but is not necessarily trading in the ISOs themselves, so this is longer-term.

To the extent there is impact on liquidity that impacts price formation, that would be a concern. I don't have the data, so I can't speak to it and I'm not someone who is a primary virtual trader to get the perspective that Noha gave.

MR. SAUER: This is a similar question, and maybe we can flush it out a little more.

One thing David mentioned, and do correct me if I am wrong, it sounded like one of the reasons not to have a rule is because an FTR rule or a forfeiture rule has been in place can possibly improperly limit virtual or UTC transactions that bring about price

convergence.

I want to explore how often has that type of behavior fallen under this forfeiture rule in PJM and whether that is in fact having an impact on the pricing of participation?

MR. BOWRING: Would you mind clarifying the last part of the question?

MR. SAUER: The question is: How often are we seeing INCs and DECs fall under the FTR Forfeiture Rule or trip FTR Forfeiture Rule when they are in fact profitable?

And does that have an impact on market participation and price convergence and price formation in general?

Is that clear now?

MR. BOWRING: Yes. I actually don't know the answer off the top of my head, that is, to the extent to which they are profitable, to the extent to which the virtuals that are tripping over triggering the FTR Forfeiture Rule to profitable.

As Stu pointed out, there are relatively few FTR forfeitures. My last couple of slides have the numbers on them and we can certainly check that, so rather than speculate we can get you that answer.

MR. BRESLER: For the record, I do have a direct

answer to your question either as far as statistics are concerned, but I agree with Joe, as Joe pointed out, there's an evaluation as to the profitability of the virtual transactions themselves in the trigger of the rule that we will probably get into later, the fact that although the rule could be improved, the fact there is so little FTR forfeiture going on today the practical impacts are relatively small.

MS. MASTRANGELO: The next set of questions will get to the consistency of the rule as applies to INCs, DECs, and UTCs. Many of your spoke to that during your five minute presentations.

The first question: One of the potentially big differences in how the rule is applied is the selection of the opposite BUS, the opposite injection withdrawal BUS that is paired with the transaction to estimate power flows.

With INCs and DECs it is currently the worst case scenario BUS. There has also been mention of using the load weighted reference BUS.

For UTCs, and the transaction itself already has a source and the sync, it is using the actual transaction to estimate the power flows.

Could you speak a little as to whether or not the methodologies should be applied consistently in

the selection of that BUS and really specifically why or why not?

MR. BRESLER: PJM's position on the consistency of the rule, is that from the standpoint of the selection criteria of both the FTR paths as well as the virtual transactions themselves, there is consistency today between the applications of INCs and DECs and to UTCs.

The place where there is a difference, is exactly like you stated, the math behind how the impact of a given virtual transaction on a constrained path and an FTR path is actually determined.

As Harry pointed out in his opening statement, the primary difference between an INC or a DEC and a UTC is an INC and a DEC is solely an injection oral withdrawal, you cannot evaluate the impact of a singular injection or a singular withdrawal without assuming where the injection is being consumed or where the withdrawal is being generated.

As you pointed out, Erin, today's rule uses a worst-case assumption.

It is not just a worst-case assumption.

It is a worst-case assumption of any market participant's activity and that is where we see a

primary issue with the way the rule is applied today in that one participant cannot determine whether or not they are at risk of triggering the rule because they have no idea what other market participants are doing.

From the standpoint of how the rule could be improved, and again, from a practical standpoint, it is a small impact because so little triggers rule in and of itself today.

The primary way the rule could be improved is to enhance the way, or change the way that an INC or DEC is evaluated from the standpoint of that assumption as to where the energy from an INC is being consumed whether the energy from the deck is being generated.

With PJM's primary proposal, it would be a shift to a load weighted reference to be utilized for INCs so that INC goes to a load weighted reference and a generation weighted reference for DECs so that there is a generation source for DECs that are consumed.

For UTC you don't need that.

As Harry pointed out, a UTC has a defined injection and withdrawal and you cannot remove one side of the UTC without also removing the other side, so you know exactly where the energy is being injected and where it is being withdrawn.

The evaluation of the impact of that UTC on either a constraint or an FTR path is therefore very straightforward.

From PJM's standpoint, that is where we see the issue with any kind of consistency between the two evaluations and how we would improve it.

MR. BOWRING: May I now prevail upon whoever is doing the slides to bring up my Slide 4.

The slide shows an example of a UTC in the constraint and the way in which we propose to treat it consistent with the current rule and in how PJM is treating it.

If you look at the UTC which is B to A, there is a distribution factor at B at .5 and a distribution factor at .2.

The result of that UTC on the system with respect to the constraint is .3, it has a distribution factor of .3, so the result of UTC is a net injection and what we propose to do is to treat that net injection just like an INC and follow the rest of the FTR forfeiture rule.

The fact that there's a source and sync on the UTC does not mean that it does not have a definable electrical impact on the constraint and this is what this illustrates and what we have proposed to do is

use .3 to .3 injection distribution factor equivalent to an INC and then compare that to the worst case, and in this case, the worst case is .5 and the difference would be .8 and therefore would fail the test.

PJM is simply looking at the difference between .5 and .2 on the UTC identifying that as .3 and saying that it does not fail the test.

Electrical engineers, to the contrary, notwithstanding, this is the consistent way to do it consistent with the INC and DEC and forfeiture.

If you would go to the next slide, this is another illustration of the issue, in this case, is a UTC which is actually sourcing on the unconstrained side of the constraint and syncing on the constraint side.

You will notice that on the constraint side, it has a distribution factor of zero and that has no effect on the constraint whatsoever.

This looks exactly like electric. It is exactly like an INC on the unconstrained side.

We would say that the difference then is the difference between the injection distribution factor .25 and the worst case on the other side .5 which the result is .75.

Whereas, the PJM approach would say, "You only look at the net injection," which is .25 and ignore the fact that it looks exactly like an INC and an INC that looked just like the UTC would fail the test as PJM applies it.

We think this illustrates the ways in which they are not consistent.

We also agree, and this may be for later, we also agree that there are ways to make this better.

There are ways to make the rule better and there are ways to include portfolio considerations and there are ways to include flow consideration, some of the things Noha mentioned, but for purposes of applying the rule as it is done right now we do not think the way that PJM is doing it is consistent with or the way that the INC / DEC is applied.

MR. SINGH: But, of course, we know that the way it is being applied to the UTCs is not consistent with the way it is applied to INCs and DECS.

We know that.

All of us agree with Joe.

The question is should it be consistent because I think Joe had also made the point in his written comments that there is the issue of consistency with physics and how power flows and the way it is being

applied to INCs and DECs is not consistent with how the power flows.

The power does not go and sync at the worst-case location so it is a design choice in the end.

I have never been able to convince Joe otherwise if he has a preference. so I will not every try, but I would just state that you can look at consistency in more than one way here.

DR. PATTON: I agree with PJM, in general, choosing the worse point or the worst corresponding injection or withdrawal, I cannot see how that makes sense.

We settle with all generational load, all virtuals at a nodal price and that nodal price reflects the value or harm to the system of the injection or withdrawal.

To the extent that the injection or withdrawal affects congestion, it is embedded in that nodal price.

There is no need to rack your brain about, "Where's the other side of this?" The other side of this is always a distributed reference BUS which is what PJM is recommending for this rule.

I cannot see why that is not accurate and why that wouldn't allow a participant to understand the

risk when it puts in a transaction at its location.

It is going to settle based on the congestion component at that location then it will better be able to evaluate the risk of putting it in on that transaction because there is not some point, but it is unaware of what is on the other side that is going to be used to evaluate its transaction.

With regard to the Up-to-Congestion, there is a reason to treat Up-to-Congestion differently and that is that it is not the same as an INC and a DEC.

After the fact it is, but before the fact it is not because these two positions are linked and an INC and a DEC are not linked.

In other words, when you evaluate an Up-to-Congestion transaction, it is logical to recognize the fact that either or both sides are going to clear or both sides are not going to clear.

In the example, the .3 that you get when you take the defects of the source and sync point, that is not a net injection, that is a net flow across the constraint.

If you were to take that and treat it as an INC, and pair it with a DEC, you would no longer have power balance.

In other words, your INC and your DEC have

already matched each other and then you are introducing a second DEC, so I am not sure how that makes sense.

The .3 will always represent the impact of that transaction, if I take away a third of a megawatt goes away, if I put it on, a third of a megawatt appears, so it seems logical to use that. I can't see what the problem.

MR. BRESLER: When I put my card up, I was not sure exactly what Dr. Patton was going to say, so I hate to sound like I am saying, "Me too."

Weaving back and forth with the market monitor and staff for a long long time about this particular issue, I promise I will only respond once, but I want to make sure that you're aware of what PJM's viewpoint is on the example that Joe presented. It is essentially the same as what Dr. Patton just said.

Once you evaluate the net distribution factor of the source, and the sync of the UTC that is the impact of that UTC on the constraint or on the FTR path.

To say then that that net distribution factor represents either a net injection or withdrawal that needs to be evaluated against another virtual transaction is to say that you actually have an

injection and withdrawal that is being consumed or being sourced somewhere else.

That simply is not the case, that is where PJM has been on this issue, and why we believe that the UTC evaluation is consistent the way it is currently execute.

MS. SIDHOM: Just to give you some background here, when we were talking about the application of the forfeiture rule to UTCs in the stakeholder process, one of the concerns was, do we want to take a flawed rule and apply it to another transaction?

That is something FERC should keep in mind, and until we fix the forfeiture rule, I am not sure it should be applied to UTCs. That's the first part.

The second part is we already know the path. We cleared the path. There's no reason to take another opposite position into consideration. It is not a three-way transaction. It is a two-way transaction.

MR. SAUER: You mentioned the FTR Forfeiture Rule is broken and I believe some of your previous comments illustrated that, but I just wanted to make it clear.

I think it was because, do correct me if I am wrong. you are looking at INCs and DECs independently

and not looking at net impacts?

MS. SIDHOM: The fundamental flaw is basically taking someone else's position into consideration, that is the part I cannot screen for, and then also not taking volume into consideration. Those are the first two things that need to be addressed.

MS. MASTRANGELO: I just have a follow up to one of the comments by David Patton. You were talking about before the fact versus after-the-fact.

Before the fact, UTCs are different from INCs and DECs because both sides have to clear.

Can you talk a little bit more about why that is so important to not being able to split up the transaction into source and sync and evaluate them separately, whereas after the fact it seems like you think they can be split up?

DR. PATTON: No, no. I am saying the INC and the DEC that cleared after-the-fact you might say, "Well, what's the joint impact of that?"

But x-ante when you are evaluating an INC and a DEC, one may clear, both make clear, neither may clear.

Always the case for UTCs is that the injection and withdrawal are linked and there is no way that one can clear without the other clearing, so there's

no reason to ever evaluate a UTC as if it is an independent INC and DEC.

MS. MASTRANGELO: You are not saying that the impact on the system has any difference between the UTC and if it wasn't an INC and a DEC?

DR. PATTON: There are cases in MISO where somebody made, because there is no UTC, somebody may put in a price in sensitive INC and a price in sensitive DEC, and when I say price in sensitive, they are putting in bids and offers that force that INC and DEC to clear so they may clear 10 MW on one side of a constraint and 10 MW on the other.

In essence, they are trying to create a position that looks like a UTC.

That is a case where in their minds those two are tied together and maybe it even makes sense in a forfeiture rule context to tie them together, but a UTC is always tied together, the source and the sync are always linked, you can never clear one without the other.

So from an evaluation standpoint in the forfeiture rule, the net impact of the injection which is always ought to be the basis for your evaluation.

MS. SIDHOM: I wanted to follow up on Dr.

Patton. Do they have the same impact on the system?

I cannot clear one side without the other. I just want to be really clear about that piece of it.

The other part it is there's no impact on power balance. I know the second panel will get into some of that, I don't want to get ahead of them, but there is no energy component, so they are fundamentally different transactions.

I just wanted to clarify that.

MS. MASTRANGELO: My next question is similar to this. With the UTCs we are talking about, how it uses fee net distribution factor between the source and the sync, but alternatively you could evaluate the injection of the source independently of withdrawal from the sync, the reference BUS or some other BUS.

We have touched on this already, I realize, but specifically what are the advantages of using that net distribution factor for the UTCs rather than independently evaluating the two sides?

DR. PATTON: Just to be clear. There are four points involved in a UTC transaction. It just happens that two of the points cancel each other out.

When people show the defects, the injection withdrawal, you calculate those by going from the

injection point to a reference BUS, and from the reference BUS to a withdrawal point, so the reference Bus washes out and you end up with just the source and the sync.

MS. MASTRANGELO: If you use the reference BUS to independently evaluate the source and the synch, you are saying it is the same thing as using the net distribution factor?

DR. PATTON: Yes, and the only way to evaluate against a reference BUS, we would need to break the transaction into two separate transactions and evaluate them independently.

The point I was making earlier is that would not really make sense since they can never clear independent of one another.

MR. BOWRING: Somewhere in there I get the feeling people at least are assuming that we were treating them separately, and of course, we are not, but there is nonetheless a net impact of a UTC on a constraint, sort of an energy balance that's about the impact on the constraint and therefore it can affect the price across the constraint and therefore the value of the FTR.

MS. SIDHOM: What you are asking is, should we treat this like a paired INC / DEC, and I do not

think we should because there I am not taking on any energy risk.

I want to be really clear about that because I think you are going to set that precedent by doing that because if you do that in the Forfeiture Rule, then you can also make the same argument for the fee issue and that makes this whole conversation moot because if you apply a punitive fee to UTCs you will see exactly the same thing that happened when FERC started this 206 proceeding volumes declined by 80%, there was no volume in the INC and DEC market and you have lost your liquidity in the short-term market because you are trying to treat it like it is two separate transactions, but it is not, it is one transaction.

That has been a really big debate and I frankly don't think it should be.

MR. BOWRING: Without getting into the afternoon's panel, clearly, it is not the same thing as an INC or a DEC separately.

It does have two sides too. It can be a cause of constraint. It is not purely energy neutral in all cases, so let's not confuse an issue by mischaracterizing from what you see is completely different than an INC or a DEC, but consists of an

INC side and a DEC side, and they do have to clear at the same time but it can be a cause of constraint in which case it could affect price, it can affect lots of things about the system.

MR. SAUER: I do promise we will raise that question to the afternoon panel. We certainly are aware of the impact to the market, we want to hear about that as well which should give other people around the panel the opportunity to address that at that time.

MS. COLBERT: David Patton, you mentioned UTC. What we are talking about is the net flow across the constraint and I think that everyone is comfortable with that and when we compare that to the worst-case scenario BUS, realizing that you do eliminate the two reference BUSes, when you are making this net difference, one of my questions has always been, "Is there more than one goal to use the worst-case scenario and where did the choice come from originally, because as Harry Singh says, based upon physics there is a reference BUS that the model uses to estimate power flow.

I have always been curious why we take one additional step since I have already solved estimating power flow, are there additional goals

embedded into the worst-case scenario that we should be considering?

MR. BOWRING: The reason for the worst-case being selected at the beginning was precisely to have a worst case.

What is the worst possible impact that the virtual can have on the constraint and therefore the respected changing the value of the FTR.

It was erring on the side of catching a manipulation, rather than missing it, and there is wrong with that, and there is nothing wrong with the math or the engineering of it.

It simply is an assumption, and as Stu said, its' a policy choice and it was a policy choice made back in 2000 right after the day ahead market was introduced and these issues arose and they had to be addressed and the .75 is a relatively high-impact number, right, so you have to meet a pretty high impact test, you against the worst case distribution factor of corresponding withdrawal or injection.

It was a policy choice and it was designed to minimize the amount of manipulation, so it's reasonable to question it and there are certainly ways to improve the rule and looking at that may be part of it.

MR. BRESLER: I agree with Joe, really, I don't think there was any goal to be advanced in the selection of the reference for INCs and DECs, other than to minimize whichever type of error is where you don't catch the ones you really wanted to catch - Type II - so I do not think there was anything in the past. It was just an assumption that was made the details behind the implementation of the rule were initially designed way back in 2002.

Unfortunately, there are some competing goals associated with that, and I think the lack of transparency with respect to, again, all participants activities is one of the downsides of the current assumption.

DR. PATTON: An interesting question to ask. There are only two impacts that you can get in any particular case, or using the worst-case corresponding DEC.

In the case of an INC, and that is, that you would have forfeited the revenues anyway had you just used the reference BUS in which case choosing the worst-case point made no difference, or it actually affected your decision to forfeit the revenues, and in that case, you have to wonder how the forfeiture is not a direct result of bad behavior at the

worst-case scenario point rather than the participants point, so it is either irrelevant or it is leading you potentially to a bad decision.

MR. BOWRING: If the DEC owner also owns an FTR, of course, that would be considered as part of the rule, so with the worst-case DEC, or INC, is owned by someone who owns the FTR then, of course, that would be evaluated, so I'm not sure what you meant there at the end, David, but it would be addressed.

DR. PATTON: What I meant was, if the worst-case's participant is B, and you are evaluating whether to take away participant A's FTR revenues, and you would not have taken them away against the reference BUS, but you are taking them away of participant B's activity, I can't see how that forfeiture is not in fact a direct result of participant B, in which case, how can it be reasonable to penalize participant A?

MS. COLBERT: I hate to be repetitive, but there's something that Noha said. I believe in your opening statement you felt there was a collusion component to the rule which is to some extent what we are discussing.

So I would like to ask pointedly if you intend for there to be a collusion component to the rule, or

if you intend to compare only, if this was a consequence is my question?

MR. BOWRING: I don't think it is a consequence at all. I am not sure where the collusion notion came from, but there is no assumption of collusion.

This is simply math that asks what is the worst case withdrawal corresponding to injection and what's the worst-case injection corresponding to withdrawal does not assume anything about collusion.

MS. SIDHOM: It does assume collusion. It assumes collusion because it is basically saying, "Here is your transaction and someone's transaction and now you are going to get punished for that behavior.

It assumes that I am going to gain some sort of profit from participant B's transaction, but I do not even know what participant B is doing.

MR. BOWRING: That is not collusion.

MS. SIDHOM: It is assuming that both parties colluded to that and then you suffer the consequence. That is collusion.

MR. BOWRING: It is not.

MS. SIDHOM: I guess we will not get far about what collusion is, but I think you get my point.

DR. PATTON: Maybe I can mediate this.

In my example where you are penalizing participant A because of participant B, the only way that can be reasonable is if you do the same for participate A and B are acting together, otherwise it is just arbitrary and capricious to penalize participant A.

MR. SAUER: I don't know if that mediated it, if that is mediation, I would hate to take a side.

MR. BRESLER: I was going to try to get away from the terminology of collusion as well which is what David went by, the attempt to mediate.

We said it before. I hate to sound like a broken record. You need make an assumption as to where the energy from an INC is being consumed, the energy going to a DEC is being generated.

There needs to be an assumption as to what that is. I agree with Joe. The intent of the original design of the rule was because of the relatively high threshold of impact to make sure that we didn't miss anything that was really representing manipulation.

PJM's opinion at this point is that we probably went too far with that because we are evaluating one participant's activity against somebody else's of which assumably they have no knowledge.

If they do have knowledge and they are trying to

inflate their FTR values by virtue of their combined activity, that sounds a lot, and I do not know what other term I would put on it other than collusion, but that is what that would represent to me.

I will not go as far as saying that the original design of the rule was an attempt to identify collusion per se, but that would be the impact of getting caught in that type of a scenario.

From the standpoint of looking at participant by participant, getting all affiliates all combined into a single entity, right, participant by participant behavior, and whether they are engaging in manipulative behavior we ought to be looking at each market participant's activity as opposed to one participant's against another's.

MS. SIDHOM: It is important for us to take a step back about when the rule was implemented.

We are talking before e-PAC 2005, before a very robust enforcement office and so it made sense to have something that was more all-encompassing and it was also done very quickly.

I went back and did some research on the docket in the stakeholder process at that time, and essentially, Stu correct me if I am wrong on this, PJM saw that bad behavior in early December and made

the filing in late December.

They were trying to come up with a solution to stop that bad behavior because they did not have the enforcement that we have today.

MR. BOWRING: It was quick because we know that PJM never does rule changes quickly as a general matter, so that clearly stands out as a counter example.

I am sorry, I just lost my train of thought. Never mind. Thanks.

MR. BENNETT: My understanding is that the Forfeiture Rule does not account for portfolio effects of a participant's activity, so setting aside collusion, and if we move away from the worst-case scenario, do we still need to take into effect the account portfolio impacts of a participant's activity?

MR. BOWRING: We have spent some time thinking about how to make the rule better, we do think it should be made better.

We do think it should be made better, but it has been the same for quite sometime and we do think it needs to be made more sophisticated.

One way we think to make it more sophisticated is to take account the entire impact of the

participant's portfolio and submit that along with every other aspect of what we do think, that it is appropriate to look at portfolios and not simply adding actually a current rule but as part of rethinking the rule.

MR. SAUER: Let me clarify. Correct me if I am wrong, but one approach to that would be to redefine the worst-case to that entire market portfolio.

Are there better ways to do that?

MR. BOWRING: Yes, I agree that the part of re-evaluating the rules, looking at the .75, and looking at the worst-case, without any question, that is one of the things that has to be looked at.

The entire rule needs to be rethought. We need to figure out whether there is a better way to get to the intended result which is to have a strong rule against manipulation.

It's important to have rules rather to simply have case-by-case. We don't want every case to be the two-year process that David went through and what my facility described.

You want to have it be automatic and there are some limits to that, but I think it's a much better more transparent approach for the market.

MR. BRESLER: PJM stops short of saying that we

need to overhaul the rule that we have today.

As I said in my opening statement, we do think that the rule has achieved its objectives and it continues to do so because of its intended goal.

It is intended to find the guy without the mask, that is right in front of the security camera, it's the relatively obvious manipulation recognizing that there are other ways especially with the evolution of various monitoring capabilities in the Office of Enforcement to look for more pattern behavior, sustaining behavior, collusion, and those types of concerns.

There is already some portfolio affect evaluation because, again, we are looking at not just a participant's INCs and DECs against each other, but also against everybody else.

That needs to be improved so that we are looking at participants, but by taking each individual in account and evaluating it against that participant's worst-case INC, or DEC, that would be a portfolio approach if we decided we needed to go all the way to that extreme.

Trying to expand the rule, if you will, to even more types of portfolio approaches, really risks probably more than we want to the other type of error

which is catching market activity in the net, and you don't really want to, because you cannot really say with any reasonable certainty that it is representing manipulative behavior.

That's the risk of going more towards and becoming even more comprehensive, if you will, as to how you do these evaluations.

Looking for the obvious and the outstanding is really the intent of the rules we have and what it really should be.

MR. SINGH: By portfolio, do you mean looking at the portfolio of virtual transactions, so for example, if I have an INC and a DEC, you could ask the question? "Should that be treated like a UTC because you have both the source and a sync now?"

Conversely, did you mean by portfolio, Portfolio of the Arts, where you are increasing the value on one and decreasing the value in another, the application of forfeiture?

MR. BENNETT: My question is more towards the portfolio, virtual transactions and not looking at the FTR is one.

DR. PATTON: It does make some sense to look at the portfolio if you thought this process is going on.

The problem is, you still cannot get away from the essential point that you are going to have false positives, and the more you look at the portfolio, and select out individual transactions to pair together the more false positives you are going to get.

Let me tell you how I think about this in MISO. The logic applies exactly to the Forfeiture Rule.

When I look for virtuals, I look for virtuals that are losing money over some period of time, not at one point in time, but either dramatically for a short period or at small levels for a long period of time.

I try to figure out why they are losing money whether it is the energy component or the congestion component, are they contributing to congestion and then if they are contributing to congestion and losing money, I am still not even close to identifying whether this is manipulation.

I then evaluate the bidder offer price, and I say, "What has the real-time price been at this point during these types of hours for the last few days or a week or more, and if the virtual transactor is putting in an offer price that represents a reasonable expectation of the real-time price, then I

say, "That is what I expect competitive virtual traders to do."

On the other hand, if they are putting in a virtual load, and saying, "I'm willing to buy at $100 when the real-time price has been $30," or you are willing to buy 1,000, basically an offer price, that is forcing the transaction to clear and then the transaction is losing money. Then you start to have an indication or you have a pretty good indication that you might have manipulation.

All of those things have to be the case.

Then we have to do some other evaluations of how that affected positions they may have and so forth to get to a manipulations finding.

If I were designing a forfeiture rule, I would want exactly the same criteria in there to avoid mitigating people who are not actually engaged in manipulation.

My personal opinion is almost nobody is doing this because they recognize that it is easy to spot and having your FTRs forfeited has reputational effects plus it doesn't exempt you from having FERC Enforcement come after the fact and impose a penalty on you.

If we live in a world where nobody is doing

this, then you would want to be pretty content that you are designing a forfeiture FTR that is very surgical and you know you are catching somebody who is actually engaged in bad behavior before you start Forfeiting FTR revenues.

MR. BOWRING: On the last point. There is a reason that no one is engaging in the behavior and that is in large part because the rule exists.

You take away the rule. Behavior is going to change. You cannot observe the behavior and then say people should behave the same way, but if for the rule had not existed.

The rule clearly does change people's incentives and does change people's behavior and people will stay away from engaging in transactions that they think run the risk of forfeiting FTRs and that is a positive in my view, a positive outcome of the rule.

DR. PATTON: Let's be clear. I was saying that I don't believe the conduct exists in the markets we monitor none of which have this rule.

MS. SIDHOM: I do not think you have to have a forfeiture rule that is preventing behavior from happening in the market.

It is exactly what Dr. Patton said which is, it is too easy to spot and people don't want the risk of

an enforcement investigation.

Having a rule in place, I am not getting immunity from the office on enforcement or if I am, somebody should tell me that.

I do not think that is true.

What it is doing is disincenting market participants from participating in the short them market.

To your question, I don't have a good answer for that because I don't have the data, but I would be really careful to have a rule that covers more than what is already covered.

Because that was not really the original intent of the rule as I think it has more damaging impacts on the market.

Dr. Patton does well with all of those things that he looks at. But that is an analysis that has to be done by a person who is looking at people's positions for a certain amount of time.

That's why we have an IMM, an IMM with a very healthy budget by the way.

MR. BOWRING: A lot of what is being talked about here is really the tension between having a rule and having enforcement actions.

I do find it hard to believe that you know how,

or David, believes it is really more efficient and effective to do individual enforcement actions incentives to have a rule.

It is very hard to make that case.

Whether you think the rule should be fixed, or modified, that's fine, obviously reasonable minds can differ about that, but the notion that individual enforcement actions are a substitute for rules, I find it astonishing particularly given some of the complaints about individual enforcement actions and people's inability to understand them.

If there is a rule, it's clear.

You can argue about the rule, but the rule is clear. It gets supplied automatically. It seems to me that is a significant benefit to the market.

MS. SIDHOM: What I was saying is, it is not the rule that is the deterrent. It is the enforcement action that is the deterrent.

Because the rule enforcement, my position is, great, take the money, I do not want the reputational risk of an investigation.

MR. SAUER: Let me go back to a point that Stu and David made. I am probably just being daft, but I want to better understand it, and that point was, would applying a portfolio approach for an FTR

Forfeiture Rule, what it sounds like is by definition will be a stricter rule or a stricter interpretation of the rule and you will have more false positives from what I understood.

Let me tell you exactly where it is I am confused. There are probably multiple ways to implement it, and I may be thinking of one that is overly simplified and won't work, but certainly under their current approach you are looking at the worst case of a market behavior, clearing some DECs from the system so you were to look at just the clearing, so you were to redefine that worst case to clear INCs and DECs for only that market or for affiliates for that matter, that would seem to be a Looser rule or a looser screen in my simple interpretation, but please correct me and let me know if I am looking this in the wrong way.

MR. BRESLER: You characterize it as a looser rule or a looser implementation of the rule.

If I utilize just a market participant's portfolio, virtual transactions to do the analysis as opposed to that participant against everybody else's worst case, I do not want to quibble with your terminology, so please don't take it that way.

To me it is a much more appropriate

implementation of the rule because, again, what you are looking for, or at least the goal of the rule is, we have all agreed it is the goal of the rule is to identify manipulative behavior on the part of a market participant.

I don't see how that market participant can engage in manipulative behavior with respect to virtual transactions that are made by every other market participant in the market, so I think you have characterized it as bit of a looser rule because there is less chance that they would get caught up in it because by utilizing every market participant's worst case, you cannot possibly find more with less impact than that market participant's own portfolio.

What you can find with using that portfolio is one has less impact than everybody else's does.

Understand why you say that, and I think that it is true from the standpoint of you would identify less forfeiture candidates by changing the rule that way, but again, unless the rule is designed to look for the interaction of multiple market participants virtual transition activity, transaction activity on a single market participant's FTR values, I don't see the appropriateness of using that worst-case scenario assumption for all market participants.

DR. PATTON: If you're just looking at a single participant's portfolio, let's say that it is the worst case point that is causing you to want to take FTR revenues Away associated with some DEC over there, it seems like having a forfeiture rule where you take away FTR revenues because of the transaction that is actually at the worst point.

It already accomplishes what you need to accomplish. You don't have to pair that point with other points necessarily. You can look at each transaction independently and get a reasonable outcome.

MR. BOWRING: I agree with you for the reasons that Stu was referencing, that it is looser, if you just take it, a standalone and you substitute what is in the portfolio for the worst-case.

As Stu said, the worst you can do is to have the same worst case, so INC or DEC.

But by looking at the entire portfolio you are potentially strengthening the rule. It needs to be through. It needs to be scouted out carefully, and in addition to listen to the portfolio it also makes sense to look at the impact on a constraint.

I said at the beginning where you have a tenth of a megawatt impact on 100 MW constraint that

probably should be looked at differently than a 10 MW impact on a 10 MW constraint or on a load MW constraint.

We think all of that is part of rethinking the rule.

MS. SIDHOM: I think John and I disagreed on some things. As to your question, we need to do more analysis on some of these before we can make a determination because we don't know what that portfolio effect is going to do, so some historical analysis is necessary.

MS. MASTRANGELO: Let me circle back on the consistency issue and close out this section.

From what I am hearing, there is somewhat agreement that the rules should be equally applied and the disagreement is over how that should be done.

This might be a short answer, but one of the consequences to applying the rule differently, maybe the FDC does it as INC / DEC specs, is the strictness, one might be kind of what we have been talking about that might over identify cases and another might under identify.

Is it important that any role has the same level of stringency on both, or is there any justification for a rule applied to UTCs to be more strict or less

strict than a rule applied it INCs / DECs?

MR. BRESLER: My opinion is, I don't see a reason why one would need to be more strict or less strict than another. They are both different forms of virtual activity, but they are fundamentally different forms of virtual activity for the reasons we have discussed.

There needs to be a difference in how the impact of one or the other is evaluated because of the fundamental differences of the products themselves, but I don't see one product or the other being at more risk, if you will, of being utilized for manipulative behavior, and therefore, one evaluation needing to be more or less strict than the other to use your terminology.

MS. MASTRANGELO: This is kind of the same point, but is it important for them to be the same levels of strictness?

Kind of the same question.

MR. BRESLER: Yes, the evaluation should be consistent, yes.

MS. MASTRANGELO: Yes.

MR. BRESLER: The question is in the detail of how you determine what the impact of one or the other is, but yes, the evaluation should be done on a

consistent basis, yes.

MR. BOWRING: Not to belabor that. Yes, I agree with that, and part of the reason is so you are not creating artificial incentives to engage in one form of transaction over another.

MS. SIDHOM: The rules should be the same level of strictness. I do agree with Joe that you want to incent both types of transactions.

There has been a lot of discussion on the stakeholder process for the second panel, but essentially, a market participant is intended to do more UTCs is because the rules are less strict because there is not a fee, that is not the case.

All of my UTC guys were former INC and DEC guys. It is just no longer economical to do INCs and DECs.

PJM's approach of applying that FTR Forfeiture Rule to UTC is consistent to its application of INCs/DECs. It is just that with one transaction you have to make an assumption and with UTCs you do not have to make that assumption. You already know the process.

MR. SINGH: It is an excellent question, but it really comes down to what is the right level of strictness for the rule.

If you believe the current application to INCs

and DECs is the right level of strictness, and I heard Dr. Patton essentially classify that as an arbitrary and capricious rule absent a showing of collusion, I guess Joe is right, then the application to UTCs would have to be done in the same way as it is done for INCs and DECs.

But if your answer is that that level of level of strictness is not the correct level of strictness or it is more important to be consistent with physics and how power flows, then you would reach a different conclusion.

MS. MASTRANGELO: Yes, I agree, that concludes the consistency injection, and to your point, after the break we are going to be talking more about design issues and that gets into more of what should the rule look like.

Perhaps my colleagues have some questions more on the consistency and if any of the panelists want to make any last comments specifically on consistent treatment issues?

Then, we are finished.

MR. SAUER: Hearing none, we will take a 15-minute break. I see 10:48 as our target return time, so do please try to be precise.

(On resuming after a recess.)

MS. COLBERT: We will talk about the design issues. Let us revisit what we have already been discussing which is portfolio approaches.

I though maybe a good place to start was to direct questions first to Harry and Noha, but, of course, this is open to anyone on the panel.

Noha, you suggested that we take a step back from 2000 to revisit 2015 and see how things are going on in the market.

I understand, when the rule was created we may not have contemplated portfolios.

Can you discuss how trading currently in the markets is being done for the virtuals and UTCs? It is, at least in some of our world views, that they are in fact trading on portfolios where some of the portfolios may be FTR based, some may be virtual based, but that the portfolios are being optimized across all the transactions for a profit perspective.

Is that a fair assessment of the markets or would you have us characterize it differently?

MS. SIDHOM: I have a virtual trader and I have an FTR trader. They do not really talk, not necessarily because we prevent them from talking, but most medium-size shops are taxes, the traders are not working until they have made it into their own books.

There is my virtual portfolio and that could include up to the INCs / DECs and when we look at portfolio in that sense we are looking at the risk of the portfolio, we are looking at the credit for the portfolio, so that is a portfolio analysis we do.

Then in our internal risk system like the back office people, we will take a look at, "Do we have any virtual positions that could have an impact on our FTR position?

We try to avoid triggering the rule, but that's done in the background and the traders do not see that piece of it.

But as far as the portfolio as fact now, on how much forfeiture would occur in the market, that is data that we do not have access to partially because of this whole third-party dynamic.

That's the portfolio analysis we run.

I don't know that it is two separate analyses and then see if there is any issue that could trip up any triggers. That is pretty much the extent of how we analyze it.

MR. SINGH: I don't believe I have anything else to add.

MS. COLBERT: Not a problem. We appreciate it. In all of your opinions you have said that you have

been discussing the stabler process about considering a portfolio approach.

We would like to get some insight into some of those discussions and what you think whether or not a portfolio approach should be integrated into the rule.

MR. BOWRING: Yes, we have been thinking about ways to improve the rule to make it better to make it a little more sophisticated.

We do think that for the entire portfolio it does make sense. It would be possible, if you put your mind to it, to put in multiple links each with a very very small distribution factor or constraint which collectively could have a bigger impact.

Just taking an obvious example, clearly, it makes sense to look at the portfolio and is exactly what the end rule looks like.

We are not quite there yet, but it is pretty hard to see why it would not make sense to look at the entire portfolio.

MR. BRESLER: From PJM's perspective, we go into this evaluation with a presumption that the vast majority of the market is competitive and liquid at the various locations on the system.

I go back to the original design and intent and

purpose of the rule which was to find those outlying locations and that outlying activity that was definitively manipulative in nature, so to make sure we catch as many of those as we possibly can, but also on the other side, that do not catch market participant activity that is competitive, and is not manipulative and has, again, the inability to be competed away by other market participant activity.

The concern we would have with taking a more sort of system wide aggregate, if you want to call it portfolio approach toward designing the rule, is we would stray from the original intent of what the goal of the rule is and significantly increase the risk of catching more participants in the net than what we really want to, what has been called false positives, during the earlier discussion this morning.

DR. PATTON: The significant missing screen that we apply that is not part of this rule is the expected profit or loss from the transaction.

It is useful to look after the fact, and say, "Did the transaction make money or lose money?' but that's really not appropriate because you really have to look on the next ante basis, and say, "Given the bidder offer price was this transaction rational?" For that reason we have only been able to usually

screen a virtual transaction on a transaction by transaction basis.

It might be useful later in an investigation to combine transactions, but you can't have any meaningful expected probability screen on a portfolio because each transaction that is an evaluation that has to be done based on the offer bid price of the individual transactions.

MS. SIDHOM: You are asking about the stakeholder process regarding this issue.

There is a task force that is supposed to look at that task forfeiture rule and it has not met since last February.

It just has not been a very pressing issue, and frankly, the application of the forfeiture rule is a moot point if we do not get the fee point right, so we focus most of our attention in the EMU Task Force.

MS. COLBERT: Thank you for the explanation about the profitability screen. I recognize that there is value in that, but I will transition a little bit away from that because currently PJM does not incorporate that.

I want to focus more on Stu, that you don't look at some of these liquid hubs in the way that the rule is intended. It already excludes certain kind of

transactions.

If we were to look at the net flow of a market participant's portfolio of a virtual action on a given constraint, would you want to retain that same thought process or would moving to this net flow approach mean losing most of that foundation that you already have with excluding the liquid hubs?

MR. BRESLER: Yes, the exclusions really served to highlight the intent of the rule, again, that is going to presumption, and then going in presumption was where you have liquidity in competition at locations on the system where you can, obviously, say that that is the case and there is no reason why that should not be the case, why even look at them. That was explicitly recognized in the original design of the rule.

The significant risk is, and in his opening statement Dr. Patton referred to it as a cost-benefit type analysis.

The significant risk with expanding the rule to include portfolio effects, that impacts a lot of virtual activity on FTR positions or on constraints, and then FTR positions like I said significantly increases the risk that you are going to catch more in the net than you really need to because it really

did not represent manipulable behavior in the first place.

MR. BOWRING: We are in the early stages of thinking and talking about how a portfolio approach would work, but to rule it out because we might do it badly does not make sense. Of course, it could be done badly but I think it could be done well.

The goal is not to significantly increase the amount of people we are catching. It is to make sure that we are not missing anything.

There is a reason why under the current rule with the .75 in the worst case you have excluded hubs and zones, but whether that makes sense in our portfolio approach needs to get talked about.

It is in the early stages of it and so it certainly makes sense to think about the portfolio approach and analyze it carefully and do some sensitivities to see if we think it works.

And that includes everybody.

The goal is to make it work for everybody so it should be reasonably transparent to market participants and people should not feel like they are being penalized unfairly and at the same time the goal is to protect the market from manipulation.

MS. COLBERT: Thank you very much. I understand

that this may not have been fully vetted already, but I am asking you for your opinions as industry representatives.

From your own opinion, what exemptions do you think, if any should, and when I say exemptions, let me clarify because there may be confusion.

When I say exemptions, what I am hearing is any virtual transaction that is done at a zone hub, liquid point, is not being evaluated under the rule.

There are other scenarios where there may be other virtual transactions that are from the beginning excluded from being evaluated under this rule.

We would like to better understand how that evaluation is done currently and how it might change if you did a portfolio approach?

Might it not make it easier to just clarify for transparency across the board what virtual transactions, in addition to the liquid points to those cleared to the liquid point, are not evaluated currently under the rule first, then we can build up on that and discuss how it might change if you looked at the net flow of the portfolio.

MR. BRESLER: Under the current rule, aside from the virtual transactions that are at those points,

you mentioned a rule at hubs, interfaces and zones, virtual transactions that serve to relieve the flow on a binding transmission constraint, are not evaluated for FTR forfeiture because, again, the rule is intended to look for transactions that increase congestion in order to increase FTR values.

We do not look at constraints on our regional transfer interfaces, so those 500 kV transfer interfaces, again, because they involve such a wide swath of the transition system we do not evaluate anything on those constraints.

But those are the exemptions that I can think of from the standpoint of the bids or the constraints that we look at today.

It is very difficult to speak for how a portfolio approach might look at exemptions because I am not sure if you are going to look at an entire portfolio transaction activity, if you would want to exclude certain transactions, you only look at the rest or if that would defeat the purpose of the portfolio evaluation or not, so it is difficult to speak to that.

MR. BOWRING: What I would add that complements on what is being left out, it is not only effectively the counterflow of INCs and DECs, that is in large

part because counter flow FTRs are not being evaluated, so it is a question about whether counterflow FTRs should be ignored by the rule which they are at the moment.

MS. SIDHOM: I agree with the counterflow exemption. It should remain because counterflows already take a lot of risk.

We want to encourage them in the market because they encourage prevailing flow and it is a good exemption to have.

Then look at the second exemption that we talked about which is zones and hubs.

Why do we have that exemption. We have that exemption because of the liquidity, so what we really want to do is incent more liquidity and essentially prevent the need for and one of the ways we can do that is to fix the problems with INCs and DECs, but also expand the UTC product.

When FERC said, "Go for it, then come up with a congestion product," they said, "Give market participants an opportunity to bid on congestion the same way energy market participants can bid on energy."

What we have now is a product where you can bid on congestion at 400 points out of 6,000.

I don't know that it's very robust, and if you had a more robust UTC product, essentially, you don't need the forfeiture rule because you are going to have so much liquidity in the market that if somebody is trying to put on a position that is going to lose money, the market is going to push against that, so it will be a self-correcting problem.

But the exemptions, going to your question about the portfolio, we need to study that more but keep the exemptions.

DR. PATTON: Largely, I agree with that. It is important to recognize that this strategy is impossible, right, in a liquid well-functioning market.

It is impossible because every transaction that I would try to do that loses money creates profit opportunity for everyone else in the market to come and basically sell me virtual power because I am willing to buy it irrationally or sell it irrationally.

Really, the only places where this is a possible strategy is at the illiquid points, so the exemption for hubs is very rational and is an important component of the rule as it helps prevent forfeiture of competitive revenue.

DR. BOWRING: Let me just comment about whether that characterization of when this issue can arise is correct.

Certainly, there is a liquid virtual market, I can take an irrational position. There are lots of people willing to take the other side, but the question is, "Why am I taking that?"

I am taking it because I have a short-term monopoly position on it and FTR.

I have FTRs on the path that nobody else can get for at least a month or for the balance of the month, so it's important to remember both sides of that, that the reason I'm taking what looks like an apparently irrational position in the virtual market is precisely to lever my FTR position.

The fact the INC and DEC market, or virtual market, is very liquid does not mean that the incentive or the ability to affect the value and the FTR goes away.

MR. BRESLER: Dr. Patton and I are ready to jump and say something similar. I am not sure that the point of liquidity was that there was always somebody willing to take a position on the other side.

What we are looking for, as far as manipulative behavior here, is the ability to consistently elevate

congestion along a participant's FTR path above what would otherwise happen and above what happens in real time.

The point of liquidity is that as soon as somebody does that in a liquid area of the system with a lot of competition, somebody else will come in and compete that away because there is an opportunity to bring that the day ahead and real-time back together again.

That was the point of the liquidity and the competitive nature of the virtual trading.

DR. BOWRING: Not to belabor this too much, but as we know from looking at the way real people behave in the markets, it is not instantaneous.

There's always a lag. There is an information lag. It takes time. In fact, if you have multiple FTRs you can switch your virtual positions around to take advantage of what we see and we see people do that.

While a perfectly liquid instantaneous market would solve the problems in the way described, the actual market not matter how liquid will not because of the timing differences in the lags.

DR. PATTON: I have to disagree with that. If I look at a hub and somebody says, "I am willing to buy

power at $1,000," to me that is going to look irrational and maybe it will affect an FTR position.

The problem is that with a liquid hub you have a bunch of bids and offers sitting there so real-time price averages $40 at that location and somebody is willing to buy for $1,000, that looks irrational.

It would be problematic if they cause congestion that caused the price at that location to go from $40 to $200, but it doesn't cause prices to go from $40 to $200 because there is a virtual supplier sitting there saying, "I'm willing to sell for $42 and another on at $43," so that irrational buyer ends up buying, but not having the impact on the market because there are bids sitting there waiting to sell to him and there is no lag.

That's the point of the liquidity. Where there is a lag is at illiquid points where they can put a price in a node that is maybe not heavily traded or the area is not heavily traded, so it takes a while for the other virtual traders to spot the divergence and then be drawn in. But that's not the case. That should not be the case at hubs.

DR. BOWRING: I agree with the last point, and that is, that is the reason for the exemptions at the super liquid hubs, and trading points, there is

enough activity such that it is very difficult for a small one individual participant to move the price but that is clearly not true with all of the other nodes.

MS. SIDHOM: The response time issue is something that I have always been really interested in is how long does it take, just by looking at it from what we can see, and discussing it with my traders. it is basically about two days when it is in a illiquid path that they can respond and they can see the shift in the market.

It is not a very long lag time.

MR. SINGH: I don't have anything to advocate here, but I generally agree with the exemption on the hubs and the more liquid points because I see the rationale for that.

Clearly, as we heard from Dr. Patton in some markets we do not even have the rule in the first place.

It is in the case that an exemption does not have something else to rely on in dealing with the underlying concern.

What is more interesting to me is the exemption for the counterflows and that issue figures in a number of proceedings where if you have efficient

transactions that help reduce congestion as people admit the case that there is not the same manipulative concern as you would if you had an inefficient transaction using a congestion.

It is not that I have a view at this point one way or another, but I would be curious as to what has changed since when the exemption was put in place to today that has caused Dr. Bowring to now suggest that it should be rescinded?

MS. COLBERT: A great question.

MR. SINGH: This being the exemption for counterflows, should the forfeiture be applied --

MS. COLBERT: Perhaps let me readdress the question as I also have that question, so we thank you for bringing it up.

You suggested that you advocate or support counterflow component to the rule and when the exemption is relieving congestion.

If we incorporated counterflow at FTR positions, we are looking at virtual trading that relieves congestion in order to increase the value of those positions.

Harry will ask, what has come about for you to now support that where it seems it wasn't previously considered a part of the rule.

DR. BOWRING: We have been saying it for a long time. It was just ignored. It was ignored at the outset. That was not the initial issue that was being seen. It was left out and simply has not been incorporated.

We have been saying it for a number of years. There is nothing special about a counterflow as they don't have magical properties. They are just an FTR in a different direction and they could also be made more valuable by using INCs and DECs to lever that position.

We think that should be looked at.

MS. COLBERT: This is a good time to open it up and kind of in the same way should we consider a portfolio approach?

We also want to know your opinions and should we be considering or should PJM be considering these counterflow FTR positions, and if you could share your views, I would appreciate it at the time.

MR. BRESLER: From PJM's perspective, Joe is correct, that the original rule is to implement because we actually saw the behavior occurring and so we implemented a rule in order to identify and mitigate the impacts of that behavior occurring in the future.

I do not think that counterflow FTRs are really in the same situation as prevailing FTRs in this regard.

If you look at the confluence of factors that needs to occur for a market participant in order to successfully engage in a similar strategy in order to manipulate the values of our FTRs in the day ahead market on a counterflow basis, it is much more difficult because, by definition, the counterflow has to be in the opposite direction of congestion, and therefore, from everything that we have looked at, the magnitude of the virtual trading that is necessary in order to move the market in order to benefit a counterflow likely makes the strategy unprofitable in total.

From PJM's standpoint, we have not seen or observed or of sort have been notified of market participant behavior that would require the implementation of the FTR Forfeiture Rule on counterflow FTRs.

Until we did it, I am not sure that we would support -- that we would not support the implementation of the rule for counterflow FTRs until then.

DR. PATTON: The difference with counterflow is

the artificial impact on congestion is more bounded than in the positive direction.

You're limited to on a path where there is no congestion, I can maybe create a shadow price of $500,000, $2000.

On the counterflow direction, I am capped at zero, so wherever the real-time shadow price is averaging, the best I can do is move it to zero, so the potential impact is smaller.

With regard screening for manipulation we do look in both directions because manipulative strategy could involve expected losses on virtuals that eliminate congestion and counterflow FTRs could benefit or other financial positions could benefit.

This is one thing to think about is that if you don't expand it to counterflow FTRs you still have the backstop of work enforcement on anti-manipulation.

So if you did see the strategy it is not as if it's unaddressed.

MS. SIDHOM: If you remove the counterflow exemption, you are broadening the original intent of the rule and doing so in a punitive manner because you are basically taking a behavior in the market they are not engaging in and it is engaging in as Dr.

Patton said, enforcement you certainly have screens for that, taking that rule and expanding it to all market participants.

You are punishing them for potentially bad behavior by the making of one or two market participants.

But we have not seen that behavior, so why create the rule and disincent transactions?

MS. COLBERT: Do you have any thoughts, Harry?

MR. SINGH: No, I will hold until after I understand what an FTR is!

MR. BENNETT: David, just one follow up question. You talk about relying on the backs of enforcement, so in your mind were you envisioning where a referral is made by you to enforcement because the screen has tripped, do you see that?

Would you talk a little bit more about what you think a good scenario is in terms of surveilling the markets?

DR. PATTON: Yes, that is what happens in all of these other markets as we screen for manipulation, there is almost none of this conduct that actually passes all of our screens when you fold in things like the expected profitability of the transaction.

But to the extent we do see conduct like this,

then it gets discussed with FERC Enforcement and referred.

Because it is not hard to detect, FERC Enforcement is a very effective deterrent against any strategy that would have a material impact.

MS. COLBERT: We discussed a little bit when Wil was asking questions about the goals of the rule and balancing our interest in price convergence as well as deterring the creation of artificial congestion when we implement the rule.

David, it is interesting how you have explained the way that you screen your market and you do that with a profitability component.

One of the things we would like to discuss is whether or not virtual transactions that are profitable should be given an exemption to being evaluated under the rule, if virtual or if there should be la longer time horizon analysis like you did.

It seems like you do that over a much longer time horizon in an hour which is what PJM is currently evaluating. What are your opinions on whether or not how profitability should be evaluated under the rule?

DR. PATTON: You can evaluate an hour at a time.

You don't have to look at profits over a long period of time and you can do that because having an ex-post profitability screen would be better than nothing, but much better than an ex-post profitability screen in this transaction, actually make or lose money is in an ex-empty screen that compares the bidder offer price against the real-time prices that have been prevailing at that point.

Not to be too detailed, but we break up those average real-time prices by time of day and look over the recent time frame.

To the extent that congestion has been incurring in real time, maybe it is volatile and occurs and goes away, and so forth, the net would affect the average real-time price at that location, so if there are better offers consistent with that pattern of real-time prices then we say on the expected value basis this is a rational transaction.

That's how we deal with the profitability and we are looking at every transaction and every hour.

The market impact does take a time component because if someone has an irrational transaction for one hour and it creates a price of impact for one hour that may not be sufficient to get anybody concerned about it and may not be material.

MR. BRESLER: From PJM's perspective there are probably two different paths we could take.

One of them would be to sort of abolish the FTR Forfeiture Rule or a rule like we have at PJM and go more towards the strategies that have been employed in the market to Dr. Patton's group monitors in which case we would want to do all of those kinds of screenings that maybe Dr. Patton is doing in addition.

But to the extent that we maintain enough FTR Forfeiture Rule like we have and PJM would advocate that we keep it as narrowly focused as it currently is in order to make sure that we are really identifying behavior that we can reasonably be assured is at least along the lines of what would be considered manipulative behavior, then I am not sure that adding another screen of the virtual probability is necessary because, again, with the very narrowly focused screen that we have today, really, I do not think it can be reasonably triggered without the kind of virtual behavior that would otherwise constitute manipulative behavior.

From PJM's perspective, we would advocate the continuance of, again, a very narrowly tailored, a very focused, a very targeted rule, that is to the

greatest extent transparent to market participants recognizing that beyond that there is a backstop of potential for additional analysis and enforcement action, if necessary.

DR. BOWRING: I would agree that there is not a need to have a profitability test and there are a couple of reasons for that.

One is the fact that an INC or DEC transaction may be profitable, that does not mean that it is not manipulative.

Clearly, if you are losing money to effect the value of FTR, then that is a problem. But if it is profitable, if both parts of the transaction are profitable, that does not mean that using the virtual transaction to make the FTR more probable is an acceptable strategy.

The second piece of it is when you listen carefully, what David says he is doing, ex-ante profitability means he is trying to guess what is in the mind of the market participant and decide from using his screens whether or not it is a rational offer.

I don't think we can do that sensibly, and I agree that an ex-post review of it is not really relevant because it is about developing people's

expectations because they are expecting to lose money and that is different than expecting to make money.

But in either case, it does not add anything worthwhile to the screen that is currently placed in the PJM market.

MS. SIDHOM: I agree with Stu. One way where you apply the screens or you have a rule in place, and if you have a rule in place, then that needs to be clear.

Profitability aspects, I have to put more thought into it only because there is recent enforcement of precedent for the transactions to be profitable or not, but that does not mean that I prefer a bright line rule as it all depends on how that rule is structured and whether or not I can screen for it.

You need to look at the overall package rather than just that one piece of it to make that determination.

MR. SINGH: The motivation for the forfeiture rule is the concern that people engage in a transaction that impacts a related transaction, just the FTRs and the question has been asked in that context, I believe by Dr. Holladay, on whether there should be a safe harbor for transactions that are

profitable in a standalone basis, but which happen to impact price because every transaction impacts price in some way.

That is a question for the Commission and I do not know what the answer was.

DR. PATTON: I want to clarify that adding a profitability screen would make this a more narrowly focused role which is probably consistent with what Stu's philosophy of making it as targeted and focused as possible and it in no way broaden it.

But I did want to note profitable virtual transactions are essential in these markets particularly where you have modeling issues, so just as an example.

One thing you will see if you look back over the last eight, nine years at our New York ISO, the report is that there is virtual load, and particularly in earlier timeframes there is sizable virtual load locating in New York City and sizable virtual supply locating outside New York City and in part the reason that is is because there is tremendous congestion going into New York City or into southeast New York that without the virtuals would not be well reflected in the day ahead market.

What are these virtuals doing? They are

increasing congestion and anyone who holds FTRs which are lots and lots of people that are going into southeast New York, or New York City, are having their FTRs become more valuable because of its virtual behavior and yet these virtual transactions are absolutely essential.

We are not going to commit the system efficiently in New York if we somehow come to the conclusion that virtual trades that are making money by bringing day ahead congestion into alignment with real time are somehow manipulative because they impact the FTR portfolio of the person placing the virtual.

That is just a real world example.

The reason that that is not a problem probably in PJM is the 75% threshold, but if you were to lower that threshold and start looking at virtuals that have smaller level impacts like these impacts a forfeiture rule could be a disaster.

DR. BOWRING: It is an important point. First, there is no reason to think that other participants will provide the virtuals.

It is important to remember that the FTR Forfeiture Rule and PJM only forfeits FTR values hour by hour if congestion day ahead is raised above that

in real-time, if the effect of it, as you said, to bring day ahead congestion into line with real-time, then there are no forfeitures.

MS. COLBERT: Some of the modeling limitations, I would like to change tact a little bit from the exemptions that you would evaluate before applying the rule to an actual evaluation.

I noted that you said things similar to, "The rules are consistently being applied," and we asked a question about how to make the assumption for the opposite location injection withdrawal when we were discussing the consistent treatment of the UTCs INCs, DECs.

I want to look at it from a different lens, from the lens of designing the rule what would be the most effective way to design the rule and make that assumption.

In the model it appears that the assumption is already made and it is made with the load weighted reference BUS and you are then in the forfeiture rule making a different assumption.

When we are designing this forfeiture rule, please explain your reasons for which approach for making this assumption you would advocate?

MR. BRESLER: PJM would advocate utilizing a

broader reference for each of the virtual transactions.

For UTCs you do not need one because you have a source and a sync, and again, in PJM's opinion.

For the INCs and DECs. For an INC we would advocate utilizing a load weighted reference and for a DEC we would advocate utilizing a generation weighted reference.

The reason is because for what the rule is targeting to find which is those locations on the system where this manipulative behavior is possible because of the isolated nature of those locations of the system you are going to find in transactions that have significant impacts on the constraints and the FTR pass utilizing those broader references.

But you are not going to catch the ones that not necessarily you would otherwise find by utilizing a worst-case reference as Dr. Patton went through earlier.

We think that achieving the best balance between, and again, those two types of errors in the implementation of the rule, is best struck by utilizing those broader references for each of the INCs and DECs as opposed to a worst-case scenario.

MS. SIDHOM: I agree with using the broader

reference BUS, so basically let's use that for INCs and DECs and for UTCs, just use the path.

We already know what the path is.

Actually, I was thinking about Aaron's question about strictness during the break.

Just because you are using a different methodology for a different transaction does not mean it is any less strict. I wanted to circle back to that.

It's just a more appropriate application for that particular transaction.

We are that far off on the forfeiture rule. There are just some parts of it that you tweak so it can be screened for. I don't know that we need to have wholesale changes here.

MS. COLBERT: Looking at the individual transaction by transaction in reference to these more broader general reference BUSes, would that facilitate considering a portfolio net effect on the constraints?

MS. SIDHOM: I do not think so because you are still just looking at the paths that do not fall into the exemption piece.

I am thinking of it as you are using that broader reference, only on the transactions that you

are using the worst opposite scenario for now.

MS. COLBERT: Correct, yes, I understand how you are interpreting that so maybe it would be a good time to ask. Perhaps we have different definitions for what a portfolio approach might he.

If I could ask you how you would explain in one sentence evaluating the net effect of a market participant's entire portfolio of virtual transactions impact on a constraint, how would you characterize that?

Is there any ambiguity in that question?

MS. SIDHOM: When you say "in that portfolio," you are looking at all of the INCs and DECs and all of the UTCs.

No exemptions?

MS. COLBERT: Assuming that exemptions have already occurred. I assume the exemption as they have been defined by PJM, you are not looking at any liquid locations.

That was one of my questions on the exemption and I am sure that we gained enough traction on it, so it is good to revisit it which was, if you did a portfolio about valuation, does PJM still want to retain those exemptions?

I believe Stu said you would want to revisit and

think about it a little bit more clearly. That was one of my questions.

If you did a portfolio effect evaluation of all of the virtuals, INCs, DECs, and UTCs impact on a constraint and what it should be in reference, do you think the exemption should change?

Do you think you should be looking at portfolio? How does looking at a portfolio change the fundamental nature of how the rule is designed today?

MS. SIDHOM: I would have to see data for all of that, so I could make a determination and see whether any of those triggers are necessarily effective for us to spend our time on applying those screens?

That is the first piece of it.

The second piece, ideally for me, if you are going to look at it in that portfolio, you do not want to broaden the rules so you would still have all of the exemptions and then take the transactions that don't fall in the exemptions and see whether or not they have an impact.

But I would have to look and see whether or not that would make because there are other positions that fall within the exemptions that might have an impact.

We are going very far from the intent of the

rule. It was just to catch those radial paths to those transactions where there is not a lot of liquidity and you can impact your FTR position.

MR. BRESLER: I will not say anymore about the pros and cons of the portfolio approach because we have been there.

But your very direct question was, does the choice of the reference make a difference in how a portfolio approach would impact on the forfeiture rule, and I have had all of 25 seconds to think about it, unless I am missing something, as long as a market participant's total INCs and DECs were not the same, so they had a different quantity of INCs and DECs, the reference matters because it doesn't drop out of your INC and DEC evaluation.

In other words, you have more on the DEC side or more on the INC side, your choice of reference is going to matter as far as the impact on any given constraint, right?

Yes. The answer to your question is yes. The reference matters even in a portfolio approach.

DR. PATTON: I thought your question was: Do people have different notions of what a portfolio approach is?

Was that your question?

MS. COLBERT: I followed up that question because it appeared that I might be misinterpreted.

DR. PATTON: I had the same question because I have heard people think of it two different ways.

There are two alternatives that I have heard implied on a portfolio approach.

One is to take all transactions and add together all their effects and get one net effect.

For purposes of, and Stu is right, if you are out of balance on the INC, or DEC side, then you still have to make an assumption about where the remaining power is coming from and you will be implicitly assuming the reference bus which is fine.

What I have heard other people, and frankly, with the design of this rule where you are really looking at the impact on a radial constraint, what you are probably going to find is a couple of the transactions affect that constraint and every other transaction throughout the footprint essentially is going to be zero, so whether you add them up or you do not add them up, it probably will not make a big difference.

What I heard other people say is, "What we do today is we look transaction by transaction. We pick the worst points."

So maybe a portfolio approach is to go transaction by transaction and pick the worst point within somebody's portfolio as the matching the other side which was a much different idea of a portfolio approach than just adding everything up.

Frankly, choosing the worst point in someone else's portfolio or your own portfolio is not as rational as evaluating each transaction against the reference.

DR. BOWRING: I have to assume that the person he is referring to is the person who said, "That had to be me because I am the only plausible person who could have said anything like that," perspectives and I did not say that.

Just for clarity, I did not say that. If you go to a portfolio approach, you would probably substitute, and in rethinking the entire rule a substitute for the worst-case INC or DEC withdrawal or injection point.

I think of the portfolio as looking at the net impact of all of the participant's virtual transactions including UTCs on constraint by constraint and then by definition any distribution fact has to do with reference, it is defined by reference to a reference BUS, so really that has to

be done consistently.

MS. MASTRANGELO: Just for clarification. We talked before about transactions that relieve congestion are excluded and went to a portfolio approach.

I would assume you would want to include transactions that relieve congestion to get full effect on a constraint?

DR. BOWRING: Absolutely. If someone is in that position, if someone could fail the current rule and pass on their portfolio approach because they had something going in the opposite direction, or offsetting it, yes, that could absolutely happen.

There should not be a presumption of the portfolio approach that it has a more draconian effect on people. They might have exactly the opposite. It depends on what the position was. It depends on what the net position is.

MS. COLBERT: I will expand on another approach that was brought up that could also have mitigating effects which is looking at the volumetric impact of the transaction on a constraint as opposed to just looking at its proximity represented by the distribution factor.

What do you think are the pros and cons of using

the distribution factor only, versus considering the volume that the transaction injections withdraws from the market?

MS. SIDHOM: You should have some sort of volume assessment, but I don't know if you have read of the worst opposite tenth action scenario that you do not necessarily need the volume piece of it because then I already know what my other position is or I know what is the load reference bus is.

Really right now it is really punitive because my DEC could be for a very long small volume and the opposite INC is what is causing me to forfeit and I don't know anything about that.

That's why I say we need to have some sort of volume consideration.

DR. BOWRING: If we are going to rethink it, and go to a portfolio price that it does make sense to try to have a metric for what the volume impact is on the constraint.

As I said before, if you have a tenth of a megawatt impact on a large constraint that is very different than having a very large proportional impact on a smaller constraint, so I do think that in a rethought rule including incorporating a portfolio approach that it does make sense to think about what

the actual impact is.

MS. COLBERT: At this time is there anyone on the staff's side of the table who has additional questions?

MR. GOLDENBERG: We have been going over this now for a few hours with all sorts of things discussed, but I would like to find out from you all how you think we should proceed?

There is, apparently, a PJM stakeholder process, that is not clear that a steinmeter is stuck or a DEC is moving forward, if the Commission were to handle this under 206, and we get the data that everybody says they need to see what time frame?

MR. BRESLER: From the standpoint of the PJM stakeholder process it is, I would say, on hiatus, if you will.

The way I recollect the stakeholder discussion in early 2014, there were obviously competing opinions from PJM and the IMM on how the rule would ideally be either adjusted or potentially redesigned and they asked us to sort of go in and come to a single mind as to a recommendation on a restructuring of the rules, if you will, and come back to the stakeholder community.

We have met a lot and discussed a lot. We have

not yet come to a single opinion as to exactly how the rule ought to be what changed, so we have not reinitiated the stakeholder process, but to answer your question as to whether the stakeholder process stands.

That is currently where it is.

From PJM's standpoint, we do not see a significant redesign of the rule as being necessary.

We do think that there are a few changes that would improve the rule from the standpoint of transparency to the market participants as well as, for lack of a better term, the rationality of the assumptions and how INCs and DECs are evaluated against the rule, but in large part, again, its very targeted nature we think is still applicable and you have significant Commission actions is at this point necessary with respect this rule.

To the extent that we continue discussions with the IMM, it is possible we might get back to stakeholders and come up with smaller changes that would make sense and we can move forward.

DR. BOWRING: Our recommendation to the Commission can be that the current rule, if it is going to be retained be applied in exactly the same way to UTCs as it is to INCs and DECs, and secondly,

that the entire rule be rethought and the portfolio and the flows considered.

In answer to your question about where the day will come from, I am sure we would be happy since we have access to the data to answer any questions in doing the analyses that would be useful to the Commission which we could submit publicly.

MR. GOLDENBERG: What kind of procedure would you envision, a settlement judge?

How are we going to process this and make a decision on exactly how to design the Forfeiture Rule? That was my question. If we are forced to do it, how do we do it?

DR. BOWRING: Other people are anxious to jump in. I really do not have an opinion on what the best process is.

DR. PATTON: You recognize that this rule is somewhat unique, it's an anti-manipulation rule.

I mean, what I would be inclined to advise is that you evaluate the transactions that have had revenues forfeited, and any transactions that the IMM wants to put forward that didn't forfeit revenues, but nevertheless look manipulative, probably should have been forfeited.

And based on the evaluation of those two groups,

make a decision on whether you need a rule or whether it should be modified.

Obviously, my position, generally, is we believe this sort of rule is more harmful than it is helpful.

Looking at real data on what transactions are being impacted by the rule would go a long way to helping FERC think through how the world potentially should be changed or whether it should still exist.

MS. SIDHOM: In trying to consider your question, there are a couple of things. I don't think we need a settlement judge proceeding on this just because I do not think it is a good idea.

I am concerned about delay in this docket mostly because of the market impact and what has happened with the decline in UTCs in the market.

The Commission is going to take action, that forfeiture rule was not heavily debated. It is not a big issue for us. The fee part was the big issue.

The main sticking point for stakeholders about that, the affect, that is a minor change that we can make if you make that change and use a load reference. That makes a lot more sense.

That is a minor tweak that you could do without us having to look at data, without having to delay the docket, and then focus your attention on the fee

issue and getting PJM back to a liquid state wherein you have got short-term transactions that markets want to engage.

That would be my recommendation.

MR. SINGH: The starting point of this debate was whether the application of the rule to UTCs is somehow incorrect and is the contract path or some such thing.

Pretty much everybody here agrees that it is not. It is the correct way to do it, notwithstanding Joe's objections.

What I took away was, if anything, more questions were generated on whether the application to INCs and DECs which assumes a worst-case reference is the best approach.

Dr. Patton had some thoughts on that, so it is hard for me to say what the best rule is.

The approach that Dr. Patton recommended on looking at the data, and then answering, "Has the current application failed to catch some things that he would like to catch?"

Perhaps that is the best approach and that will take a lot of time and I don't think a settlement judge or such a mechanism would be conducive to that.

DR. BOWRING: I certainly agree that looking at

data and analysis makes sense.

I don't believe that changing nodes has been characterized that this is only by radial lines. That is not correct.

It is about all lines in the system with the exception of, as we talked about with sources, at hubs and so on.

Changing that one part of the rule about the .75, and the worst cases, is not a line or a tweak, that is a radical change of the rule.

If that is going to happen, then we should also consider more broadly ways to make the rule more sophisticated including the portfolio approach which, again, could be done through the submission of analysis data on which the Commission would base a conclusion.

MS. COLBERT: Are there any additional questions from staff? At this time, we have 15 minutes left after this panel and we don't have any additional staff generated questions.

We want to give you the floor if you have any closing remarks that you would like make on anything that has been discussed this morning.

MS. SIDHOM: For about the last decade and a half, I feel the Commission has done so much to

incent competition and I do not want to see all of that rewinded, it is very important, and as Dr. Patton said, it is so important to have virtual transactions in the market.

They send the price signals. They help the spot market. They are necessary for good price formation which is the other big docket that is sort of looming out there about what are we going to do about price formation and uplift.

PJM was the poster child and still is the poster child for liquidity - sorry Dr. Patton - I would just hate to see a lack of liquidity in the short-term market in PJM.

It is very important that we get these rules right and that we get the allocation piece of it right.

As far as the forfeiture rule application to UTCs, as I said in my opening remarks, it should apply to the transaction as is, the path that you clear.

That is important because you do not want to set a bad precedent and we do not want another negative aspect to this transaction.

We have been talking about UTCs and PJM for four years. We have better things to be talking about.

We need to resolve these issues and move on.

MR. SINGH: When you make decisions you should not listen to me or to anyone else. You should do the right thing.

Often we get caught up in different people advocating a particular position, but at the end of the day, there are some facts and then there are some preferences and so is the case in this proceeding.

For me, the things that I really care about perhaps I should not mention because of ex parte rules and the definition of the FTR is one of them.

It touches upon submissions here.

In terms of this proceeding, the second panel deals with issues that are much bigger and are of much greater concern to most of us than nitpicking on the slackness of the reference bus in the forfeiture.

MS. COLBERT: I agree. Thank you. This is all we have to discuss for this panel.

We will break and reconvene at one o'clock and discuss those issues that you just brought up, Harry.

(On resuming after the luncheon recess.)

AFTERNOON SESSION

MR. SAUER: We hope everybody had a good break, is filled up, and caffeinated.

The second panel, as everybody knows, is on

uplift and the specific questions are whether INCs and DECs and UTCs transactions contribute to uplift, and if so, how to allocate any cost to those transactions.

Those will be the two primary areas that we will dig into. We will also ask the panelists to talk on a couple other areas.

One is the PJM Energy Market Uplift Senior Task Force. We would like to hear a status report on that.

The other area, certainly, the market has been impacted by Order 206 that was issued so we would like to hear a little bit more about the impacts and any concerns, the takeaways or items that we should be thinking about.

It says that the last panel will do presentations first, so let me introduce the panelists and then we will turn to the presentations.

Thank you all very much for joining us. I will start with Adam Klein from Appian Way.

Dr. Bill Hogan representing the Financial Marketers Coalition up from Harvard University.

Joe Bowring from Monitoring Analytics.

Adam Keech from PJM.

David Patton from Potomac Economics.

Wesley Allen from Red Wolf.

Stephanie Staska from Twin Cities.

And Scott Holladay from Yes Energy.

Thank you all.

For the order of presentations, we are going to start with Adam, then go to Joe, then David, and Scott, and for the last half we will do Bill Hogan, Wesley Allen, Adam Klein and then Stephanie.

MR. KEECH: Good afternoon everybody, my name is Adam Keech from PJM.

As I look through the conference agenda and I try to put together some preconference materials, I put together a lot of slides to try and address all the questions, and I have more slides than I have time to give them, so I will jump through the presentation.

If you could bring up Slide 2 on my presentation. Why do we have uplift? It really comes down to two high-level things, and the first one is we have physical constraints on the system and the system changes is faster than the resources we have can follow those changes.

We have generators with things like minimum runtimes and minimum output levels, and because the system is not infinitely flexible, we end up in

scenarios where we are running equipment that we may not necessarily need from an economic standpoint.

But in order to preserve that incentive to follow the ISO, RTO instructions, we make those generators hold to the actual costs that they incur, even if that means they were running that wasn't necessarily ideal, we sort of know that going in, we make that commitment.

So just by the nature of the system, we've accepted that there is going to be some amount of uplift and part of it is driven by that.

If you want to jump down to Slide No. 3.

The other main reason I think about is we have clearing prices that are based on marginal costs. If you think about generator offers specifically, there are three part bids.

The clearing price is only set based on one of those parts and that is the marginal costs of the generator.

Even when we commit a generator, it is needed for its entire operating period.

There are still costs outside of that marginal cost that need to be compensated, mainly, the startup and the no load costs even if that generator set price its entire run period, if it has a non-zero

startup and no load cost, the way we calculate the clearing price today it still will be a make whole payment.

That is another piece of the issue that feeds into this. So when we are running this equipment calculating these clearing prices, the clearing prices only cover a portion of the cost of those generators.

If that generator doesn't accrue info-marginal rents in excess of those costs, it will again do a make whole payment assuming it is following the ISO's and RTOs instructions.

That is a couple of the reasons why we have uplift, but if you look at it from a transactional basis, there are really not many transactions that I can think of that under some circumstances can't create uplift payments.

Virtually any of them in the market, INCs, DECs, and up-to-congestion transactions included, if they shift megawatts around on the system which we all know they do, they can shift clearing prices, they can shift funds from uplift into the actual market clearing prices and back and forth.

It is tough to pinpoint a single transaction, and say, "This one doesn't cause uplift, and if you

work on the premise of cost causality for allocation that it shouldn't get an allocation of that."

The real complicated pieces determining how much each transaction is causing of uplift and therefore what would be its "fair share of uplift" that becomes a very complicated problem to solve, and that is somewhat the EMU, STF, or the Energy Market Uplift Senior Task Force of PJM has been trying to solve for probably about a year at least.

That group has met twenty-six times and it has been really since July 2013, so it has probably been about a year and a half.

And if you want to jump down to Slide 12. The EMU SCF is the Energy Market Uplift Senior Task Force and PJM really came about for a couple different reasons.

One of them was the fact that we saw higher up-to-congestion transaction volumes and they were not receiving the uplift payment.

The other one was we had in 2013 a couple significant winter months, January and February, where we had high uplift payments, and so those two things combined really spawned that group and that group has been working since July 2013, probably meeting once to twice a month since then.

Where we are right now within that group we tackled the problem in two different phases. Phase I is, "How do we determine how much uplift gets paid to resources following PJM's direction?"

Phase II is, "How do we allocate that cost once we know it?"

Also embedded in Phase I was: "Are there any methods that we can employ to minimize uplift?" and we have talked about that in some of the other price setting conferences and so I will not get into that here.

Those are the two phases we have and right now that group is at a point where we have composed what we call solution packages that will eventually get to voting in the coming months, so we expect that in the first quarter of 2015 and we will vote through our member process and we will see whether we get consensus or not, but that is essentially where we stand today.

Thank you.

MR. BOWRING: Thank you for the opportunity to talk on this topic today.

If we could pull up Slide 10 which really is the only one I want to talk about.

As Adam pointed out, uplift is really

unavoidable on LNP based wholesale power markets, units are lumpy, reality is lumpy, and there will be times when a unit's full marginal costs are not covered by LNP.

The goal should not be to eliminate uplift. The goal should be to eliminate unnecessary uplift, for example, uplift associated with conservative operations.

We talked about that in prior conferences. And the opportunity on cost issues and unrelated matters which should not really be part of uplift at all.

The goal should also be to identify and to appropriate and allocate parts of what has been treated as uplift, but really not uplift, Black Start, again, we have talked about all of that.

Some uplift is unavoidable. In those cases special or extraordinary approaches to uplift should not be taken as you can do more harm than good by trying to make uplift go away when you really can't make it entirely go away.

In addition to taking all the appropriate measures to reduce the amount of uplift, uplift should be spread and this is the allocation side to all market participants.

The goal is to minimize the numerator of the

uplift calculation and maximize the denominator to make it have as small an impact as possible on any market transactions to make it a fairly predictable annoyance, but one that does not have a significant impact on market participants decisions.

No participant, no group of participants wants to pay uplift, and in fact, all transaction types can and probably have from time to time made a legitimate argument that they should not be forced to pay it.

It would be better if they didn't have to pay and someone else did pay. They would have more vision transactions, their costs would be more closely related to price, and all would be well with the world if only that particular group did not have to pay for uplift.

Our view of it is that uplift should be spread as widely as possible, but consistent with some basic principles and so far only up-to-congestion transactions have entirely successfully avoided paying uplift.

But virtuals do affect unit commitment and unit dispatch and we have that fairly well established to everyone's satisfaction.

Virtuals affect unit commitment and dispatch decisions in the day ahead market and the day ahead

reliability run in exactly the same way that other transactions in the day ahead market affect it.

We cannot really distinguish between a megawatt of load in day ahead and a megawatt the DEC in the day ahead market.

The day ahead market does not distinguish between the injection side of UTC and an INC and so on, but as a result uplift resulting from commitment decisions of the day ahead market and reliability run should be allocated to all transactions that affect that uplift.

One of the points we are making in the EMU is that those transactions should pay that but they should pay only that, and so far, historically, we think and you will see from the numbers that virtuals have paid more than that and their allocation should be reduced if you apply that basic principle, but there is no reason to exempt any participant type including UTCs from allocation of the uplift.

There are three broad considerations and you have spelled them out in your document. These are just broad characterizations.

One is cost causation, one is incentives, and one is what we can either refer to as simplicity or predictability, implementability, if that is a word,

or transparency. Those three are all appropriate to take account of.

The approach that we were recommending and have been recommending that EMU tries to address cost causation not by pretending we can identify the actual impact of any particular transaction, but by trying to identify categories of uplift and assign it to the appropriate participants.

For example, we distinguish between deviations that are associated with day ahead and reliability run from deviations associated with things that happen in real-time.

The real-time deviations go to load and those who are in real-time. The day ahead deviations go those who are in the day ahead market including virtuals.

But the result of that would be, as I said, to significantly reduce the amount of deviation charges that are paid by uplift transactions.

If you look at that table, I don't know if you can see it, but the key part of that table is that it shows in some detail the difference between the current uplift rates by type of transaction and what would occur, and what the rates would be under our proposed method.

You can see that the reductions for virtual transactions are in the 80% to 85% range.

One other thing to focus on is the difference between the rate that is called deviations in the rate for INCs and DECs.

You will notice under the current rates they are the same. Under our proposal they are very different, the deviation rate is substantially higher than the rate for INCs and DECs.

Thank you.

DR. PATTON: If you would go to Slide 4. I will start in the middle of my DEC. The preliminary slides basically say that we are here to talk about cost causation as advocating that as the primary basis for allocating uplift.

If you do allocate consistent with cost causation you get good incentives and achieve the objectives of the Commission, but in order to, and MISO has tackled this issue, if their allocation is not perfect, they have to make a filing to address one remaining thing that FERC did not accept the first time around, but with that addressed, what I will be describing is very consistent to the way MISO does their cost allocation and it's very effective.

We also monitor RTOs that don't do this very

well. There are two basic flaws in areas where this is not done well.

One is not distinguishing between helping deviations and harming deviations and allocating to both classes as if they have the same effect on the system. I will talk about that in a minute.

Secondly, is talking about allocating uplift as if it is one big bucket of cost rather than categorizing so.

Oh my! That is difficult to see.

The first thing you have to do in order to allocate uplift efficiently is to distinguish between capacity-related uplift, congestion-related uplift, and the local reliability needs. Those are three discrete buckets of costs.

The local needs ought to be allocated to the local areas that are being protected.

In the presentation, I talk about how to allocate capacity and congestion and what the implications are of doing it based on cost causation.

Apparently the background got flipped so you cannot see the text, but hopefully you can see the boxes. There are basically two tests for capacity related uplift that should be applied.

One is whether the commitment of the resources.

If you go Slideshow and make the background transparent a little. What this is saying is that there are two tests that should be applied for capacity related uplift.

These are resources that are committed to meet incremental load that wasn't served through the day ahead market.

The first is, was the commitment necessary to meet the capacity requirement? Yes, or no, or did the commitment exceed the requirement?

To the extent that the ISO is committing more megawatts than needed to meet the real-time requirement, then there is no good argument for why those excess costs should be allocated to deviations, but once you get past that the second important screen is to look at the net deviations and determine the extent to which they appear to be causing the commitment.

If the net deviations are actually helping, or they are on net harming, but the megawatts are far lower than what was committed, then the portion of the cost that should be allocated to the deviations should reflect only the extent to which it is harming.

If the ISO commits 2000 MW and the net deviation

is coming from the day ahead to real-time are 100 megawatts, what is that, 5% should be allocated to deviations, everything else presumably is being committed for reasons other than the deviations.

If we can go to the next slide.

That has three important implications. You should not be allocating anything to DECs because they are helping you. They get you to commit more resources in real-time. There's no possible way they could be causing capacity-related uplift and you should not be allocating anything to UTCs because they on net create no power balance impact.

That does not mean you shouldn't allocate anything to UTCs.

If we can go to the next slide.

They do have an effect on deviations over a constraint, and if you calculate flow-based deviations on constraints, then the portion of the uplift that you are incurring to manage constraints you can identify which deviations caused you to not commit those resources in the day ahead.

In this picture what I show you is that UTCs that are scheduled in the direction that increase the flow on the constraint are helping you, that get you to commit more resources in the load pocket, and the

UTCs that unload the constraints are harming deviations.

If you go through the same calculus?

Go to the next slide.

If you ask yourself the same questions as you asked in the capacity context is, "How much relief did I get and how big was the flow deviation?" and if the harming net flow deviation is less than the relief I got from the commitments, then I should be allocating only a portion of those congestion-related uplift costs to the deviations.

By doing this you allocate in a nondiscriminatory fashion to the UTCs, the DECs, and the INCs, that harm you with regard to that constraint.

That is the one distinction that I would say in the MISO allocation that introduces some complication is recognizing deviations you know about four hours ahead versus those that you only find out about 30 minutes ahead or 15 minutes ahead.

That is a distinction that is not particularly important. I will stop there and respond to questions on the details of that.

MR. HOLLADAY: Thanks for having me.

I'm here to present the results of some analysis

that I have done on the impact of the FERC order and the subsequent drop in UTC volume on market performance in PJM.

On the first slide here it just kind of summarizes. There have been some existing research done that suggest that after the FERC order came out, market performance, here defined as convergence, improved.

It looks like the things had been better since the FERC order. But on the next slide I argue that that is an apples and oranges comparison.

You are basically comparing market performance in summer and fall. You don't need an economist to tell you summer and fall are different, but because I am an economist I have built a table that tells you that and up here there are some data points that just show you how different summer and fall are.

That is an apples and oranges comparison just because convergence improved after the order could be driven by any of the changes in those variables.

The good news is that there is straightforward econometric techniques that allow us to deal with the apples and oranges problem.

In the next slide, I define something called "The Difference in Difference."

It is a very straightforward econometric technique that we teach to undergraduates all the time that allows us to deal with that problem.

The way we do it is we take the convergence before and after the order in 2014 and we compare that to the convergence before and after that same date in 2013.

In 2013 there was no order so we can't attribute that improved convergence to any sort of FERC action or any sort of UTC volume.

That's just how we compare. That is how we differentiate the apples and oranges.

That is the "Difference in Difference."

The nice thing about that is it controls for some of these potentially omitted variables that could be driving the analysis.

On the next slide, I present the results of that type of analysis if it is a different analysis.

This one is convergence? Yes. So look at the impact on convergence and you see that convergence was better in the fall after the order, but not by as much better as it was in 2013 and we can quantify that.

Convergence was actually a $1.52 per megawatt hour worse after the order relative to the 2013, the

2013 because it is the most recent year.

I can do the same analysis with 2012, 2011, 2010, you get essentially the same story, the numbers change, but the sign does not. Convergence has been worse since the order.

On the next slide, I talk about the impact of the order on operating reserve fees, and again, the story is similar. We can do that same sort of "difference in difference" analysis.

When you do that, it looks like operating reserve fees have increased since the order.

The goal of the exercise, the way people say it is, we want to increase the denominator and decrease the numerator.

At the very least it looks like the numerator has been increasing because operating reserve fees had been going up since the order and the drop in volume has not helped the denominator a whole lot, right, because the volume dropped so much the dominator has not grown potentially by as much as we hoped.

On both dimensions the impact on the distribution of fees is not as clear as we would probably like it to be.

These results are really robust, I mean, under

control for a whole bunch of things. On this slide, I list the different type of things that we control for.

We look at UTC volume. We look at gas prices, temperature, load, weather, constraints, all those things we control for, the story remains consistent, convergence has been worse since the FERC order. We can put a dollar figure on that.

In conclusion, lower UTC after the FERC order has made the market perform worse in some ways and there are some early analysis that was not consistent with that, but when you deal with apples and oranges, the problem using these straightforward econometric techniques that early analysis does not look spot on, right, and we can fix that problem without inventing anything new and without doing anything that we wouldn't ask a student to do and when we do that, when we fix that problem, the story flips.

Thank you.

MR. SAUER: Before I turn it over to Bill, Commissioner Goldenberg, thank you very much for being here.

MR. GOLDENBERG: Sorry I missed out the morning, but looking forward to the afternoon.

DR. HOGAN: Thank you. It is a pleasure to be

here today. Let me emphasize as I usually do, I do not speak on behalf of the Financial Marketers Coalition or the Harvard Electricity Policy Group or for anyone else.

These are just my own views.

What I wanted to do in at least the initial few minutes was to try to step back with this problem a little bit and think about the principles that you asked about and how to think about allocation of uplift as a first-order approximation to talk about what we would do in practice.

I am assuming here the benefits of good market design, good basic security constraint, economic dispatch in real-time that is necessary is desirable to have day ahead markets, it is highly desirable to have virtual transactions for all the reasons that I have talked about, about price convergence and allowing liquidity for long-term contracting and adjusting those things as time goes forward.

It is very important for the markets that we do this and do it well so we can get the kinds of competition that we want.

I am assuming the principles of open access of non-discrimination which are consistent with economic efficiency.

They are not exactly the same thing, but I am going to take that as part of the story. I am going to talk about it from the perspective of price taking competitive markets so that we can deal with the basic, if we have a competitive situation, and I'm setting aside market power and manipulation with are either important issues, but they are separate from the market design for the basics of what we are trying to do and then and how would we do that well.

What I will focus on therefore is the question of economic efficiency in dealing with these charges and uplift calculations.

There is a lot of discussion about cost causation and what should we do with cost causation. A lot of that is quite muddled and it is a serious problem in dealing with these markets because our current designs are imperfect and there is a whole issue about improving the pricing in the real-time and day ahead markets which was the subject of a previous series of technical conferences and I have written about this and others have and that covers topics like scarcity pricing and operating reserve demand curves and dispatch brace pricing to deal with things like voltage support and operator actions and feasible FTR allocations and extended locational

marginal pricing to deal with the unit commitment.

Those are all extremely important issues. It is a different topic.

What I would argue is that most if not all of the cost causality arguments are really targeted to that problem and that is what we should be doing is fixing the pricing in these markets and then once you fix this pricing the rest of the problems will be greatly substantially reduced.

Furthermore, in terms of the uplift because there will be uplift as many people have said, Joe said, we cannot design these things perfectly and in some cases even as a matter of principle because of lumpiness we can't get them all into the prices and at the margin in the marketplace.

We are going to have left over costs. That is what I call the uplift here and to me at least as a first approximation, I would say having a conversation about cost causality for the costs that are left over after you've done cost causality analysis is circular, so it is not a logically well-formed question and you cannot actually do that analysis and that means you have to have some other principle for analyzing what to do with the uplift.

The principle is straightforward which is from

economic efficiency which is to allocate the cost to the transactions into the actors that have the least likelihood of responding to them and changing their behavior and deviating from the efficient outcomes.

This is sometimes referred to as the inverse elasticity rule, although technically, that is not what I mean, but the idea is to lower elasticity transactions.

What are the implications for the conversation here? I would say the implications are that there is no uplift allocation to day ahead transactions.

None.

And that includes all of these virtual transactions but everything else is what?

The uplift is allocated to the real-time transactions and there it is allocated to the lowest elasticity class which is going to be probably load and there it is going to be allocated to the lowest kinds of elasticity transactions which is probably excess charges, network access charges, and then I would invoke Joe's principle which is once you get within the category that is the lowest elasticity, then you spread it as widely as you can within that category in order to minimize the distorting effect of the lowest elasticity.

It is not that you spread it across the widest universe. It is the widest within the category that is the lowest elasticity, that is the principle that should apply.

That then would solve many of these problems that we have here and would be quite different than the conversation that we have been having.

A radical rethink about the whole problem and a refocus on the problems of pricing which you have already talked about is a much better use of your time.

Thank you.

MR. ALLEN: Good afternoon, Wesley Allen with Red Wolf Energy Trading. Once the slide presentation is up, if you would jump to Slide 2.

I thought it would be a good idea to talk about the differences between INCs, DECs, and UTCs since that is sort of the core issue that we are talking about.

An INC and a DEC is synergy transaction that transacts load and full LNP. A UTC is congestion losses only.

Some of the other differences.

INC, DEC, big caps, is $2,100 plus or minus. The UTC is $50. But probably the biggest way in

which they are different, that I have not heard discussed much here today, is in the way they are modeled in the PJM system when they saw the day ahead.

If you would skip to Slide 6, please.

I do have a 21-page presentation knowing that I will not get through it in five minutes.

INCs and DECs, the way it works, the way it has been explained to us, what PJM does is they did a major transmission constraints, they take the expected load, the generation available into INCs and the DECs and they come up essentially with a base case unit commitment.

After that they do scheduling and pricing in dispatch at which time they incorporate all the transmission constraints and then layered in are the UTCs.

UTCs, INCs and DECs are not modeled the same in the day ahead market, so there is a substantive difference between the two.

Ultimately, when we are talking about the problem that we are facing here, and the question, is there a difference in the way INCs and DECs and UTCs are treated as far as uplift, and there is, we are missing it a little bit.

If you look at how the other markets allocate uplift and have done substantive cost causation analysis, they end up netting their INCs and DECs.

Ultimately, that's the problem we are facing here is that incremental offers in DEC bids that are cleared for the same volume in the same hour are not being netted in PJM.

Not for market participants.

There is some netting in PJM that exists that is available for certain market participants using internal bilateral transactions for that is not widely available, it is not available to financial marketing companies at all. That is the substance of the problem, that there is not netting.

Let's go to page 8 and just talk about this real quickly. There has been an 80% decline in volume of UTCs. Why is that?

Well, there is an expectation of or the possibility of an allocation of fee.

Prior to the refund effective date, analyses show that an average profitability of UTCs is .32 a megawatt.

That is the reason why the volume has decreased. If the fee gets assessed retroactively most of the transactions, and all of the transactions on the

whole, would no longer be profitable.

They are that marginal.

When you think about the broad socialization you spread it that PJM and IMM are advocating for, if you sorted it out so thin that the rate is low and it does not impact anyone's economic decisions, if you spread it out evenly, then it is going to affect the UTC participant's behavior because they cannot support even that thinly spread fee. It is .32 a MW. It is not much.

I should mention that PJM has done an analysis by unit commitment. You heard that mentioned. That is one of the reasons why some people feel like UTC should be charged just because they commit units in the day ahead.

But that does not really mean anything to me. It is like saying you should pay uplift because you commit units, that is sort of a red herring.

What does it tell you? It does not tell you anything. It means you impacted the day ahead.

The unit that is committed by the UTC or by an INC and a DEC, is that needed in real time or is it not? Is it a lowering uplift or is it causing uplift?

That's what we saw from the F's energy data,

that without these transactions the amount of uplift went up, so how is that causing cost causation if you are charging a rate to a transaction that lowers uplift?

Skipping to page 13. This is very similar to what Dr. Patton was talking about where you either charge helping versus harming deviations?

You do not want to charge deviations that help lower uplift. That is contrary to good economic principles.

Similarly, one of the things that exists in the MISO contract of allocation is the differentiation between an energy deviation and a transmission deviation.

Energy deviation would be an INC or a DEC that stands alone.

A transmission deviation is if you had no impact on power balance which by definition a UTC has no impact on power balance.

You can talk about the differences between location of your source and your sync of your UTC, but that is what gets captured in the CMC rate as it exists in MISO, the congestion management charge.

Just to give you an idea of the rates that we see in MISO for the CMC rate is about 2 cents per

megawatt on average on our transactions.

That is all the time I have got and I am looking forward to your questions.

MR. KLEIN: Thank you. I want to thank the Commission's staff for inviting me to talk on uplift allocation and causation.

The focus of my presentation is really going to be on the relationship between uplift allocation and some of the price formation issues that came up in 8014-14.

Could we turn to Slide 3, a market comparison of the uplift allocation.

If you look here, there is really higher balancing uplift rates in PJM compared to other markets and that creates a significant barrier to convergence bidding.

The flaw in PJM's allocation approach is the presumption that scheduled deviations are the primary cause of the real-time balancing uplift.

If you look on the next slide, and these are slides that I actually borrowed from Wes Allen that I should attribute to him the PJM stakeholder process, but you can see four markets there. New York, ERCOT, MISO, and California have fairly low charges per megawatt hour for the uplift and their market

structures that really facilitate convergence bidding, and compared to SBP and PJM where the rates, the actual transactions pay, what the INCs and DECs pay are much higher and it is not necessarily that the uplift is less in these markets, but the allocation, the uplift is better in the other markets, it is more reasonable and more just.

On the next slide we can focus here on the reasons for the balancing commitments that occur and I think there were good comments made earlier about helping versus harming deviations, really what happens in the real-time market particularly after the day ahead market during the day is often unrelated to financial bids most of the time.

You have operator actions, local liability requirements, transmission outages, generator trips, load forecast error, all of these things that were talked about in the December technical conference.

Something I would like to do is acknowledge the Market Monitor's proposal in the PJM stakeholder process that actually extracts those transactions and treats them as a different category and does not charge them, so I would just like acknowledge that.

On the next slide, I would like to turn to the price formation issues and the relationship, that

uplift allocation cannot really be separated from the price formation issues that you have, and if real-time prices were right, there would not be much uplift and a primary cause of the uplift is some of the software issues that prevents units from setting prices correctly in the real-time market.

Some of these on Slide 7 identified in AD-1414 include peekers that are committed and do not set price because of their operating ranges, peekers that are unable to adjust their bids in real-time, if costs increase, pricing and shortage events, cooptimization in reserves in energy that Professor Hogan spoke about.

When you think about those issues, if the real-time prices were right, we would have a lot less uplift and some financial deviations would be paying more and some would be paying less.

But prices would actually be higher.

If you think about that issue from "the beneficiary pays principle," just touching on the allocation issues, and go to the next slide in my opinion you would be better off allocating the uplift to load because there is an inherent price suppression that is implied by the fact that you have marginal units that must be paid outside over and

above the normal market price formation mechanism and we accept in the day ahead market that we should assign those costs to the load.

But in fact in the real-time market all of the load is also benefiting because if the prices are lower in the real-time market they are also lower in the day ahead market and they are also lower in the forward market through the price convergence process and load is really benefiting from that process and from the uplift and just touching on Professor Hogan's point earlier, that is a good reason to allocate them other than the fact that they happen to be price insensitive.

To see that, if you just did a thought experiment of imagining, what would happen if there was a market rule that said real-time settlements should be at zero, what would happen?

I just have two more quick comments.

ISO markets are extremely competitive when and if they are open to financial market participants, facilitating the convergence of day ahead and real-time markets.

There is one issue you have to deal with to deal with load pockets where you need an FTR Forfeiture Rule or bid caps or things like that where there can

be market power.

But when the market is competitive for the broader ISO market, the Commission should promote market structures and cost allocation rules that reduce the barriers to these important and efficiency enhancing transactions.

Thank you.

MS. STASKA: Good afternoon, I am Stephanie Staska with Twin Cities Power Holdings.

I want to thank you for the opportunity to speak today, and for those of you who are not familiar with Twin Cities Power Holdings, they have several LSE subsidiaries as well, the largest of which participates in PJM.

A lot of the perspectives that I will be offering today will be a joint perspective both between our financial operating arms and or load serving arms.

I want to focus on something a little bit different than what I felt some of the other panelists would focus under during their five minutes, so if we can go to the second slide, please.

I want to focus on how our virtuals, INCs and DECs, are specifically being charged today?

They are being charged BOR for deviations,

right, so this is one of several uplift rates that are assigned in PJM, and this rate is assigned not only to financial transactions such as INCs and DECs, it is also assigned to physical deviations.

Those include differences from day ahead positions for load, IBTs, imports, and exports, and deviations from desired outputs such as generation and demand response.

At this current time, it does not include transmission line deviations which also have a very large impact.

Going to the next slide, please.

What is a deviation? This is an undefined term. It is used frequently by PJM, but is not a capitalized term in the tariff, so I was forced to take the definition from the dictionary and deviation came up as "an action, behavior, or condition that is different from what is usual or expected."

Go to the next slide, please.

Physical deviations. These are differences in day ahead positions such as load that was under over forecasted, imports or exports that are scheduled, and then change from desired outputs such as generation or DR. These both meet the definition of the dictionary.

Virtual transactions. When a participant clears a financial contract in PJM, they receive both the day ahead and real-time position.

This is applicable to INCs, DECs and UTCs. For example, you are buying 100 megawatts in the day ahead market, and you are selling the exact same volume at the exact same node or node combination in the real-time market.

These positions are known when PJM clears the transactions which is the evening before the operating day. The transactions cannot be cancelled and the volume cannot be altered.

Next slide, please. No changes are made by the participant after the day ahead market closed which is noon prior to the operating day.

All virtual transactions behave in this manner. The fact that the day ahead market is a buy in the real-time market side of it is a sell is not unexpected by PJM when modeling is known in advance.

Then, obviously, a further definition I read earlier, virtual transactions, are not deviations.

Go to the next slide, please. PJM has over-broadened the application of the term deviations in their market.

Virtual transactions do not deviate in the sense

that they do not differ from what is usual or expected.

Then that leaves us with the question of, if not the BOR for deviations rate, then what? What do we charge people?

I don't want to get into this too much since I know a large part of this panel will be Q and A and we will get into this later, but I want to share with you that during the stakeholder process during he EMU, I have often heard stakeholders and many members of this panel say, "Physical deviation should be charged more than INC or DEC which should be charged more than the UTC."

This is something that Dr. Patton had mentioned earlier as well.

At this point, there has been such limited analysis done by PJM and the IMM that this is less stakeholders questioning what the correct balance is to this instinctual approach.

For on the one hand, during a PJM stakeholder committee, one of the PJM staff said, "A UTC is 1/50th of the impact of an INC or a DEC," and then later on a different analysis said, "Only 1.5% of units committed were up to congestion."

Then we have another filing that says, "They

should be charged the same."

We are left with very little analysis, with very little guidance from PJM or from the IMM, who are the people who have data as to what the right level is.

The Commission and PJM must ensure that a fee is set at the right level to incur the ideal level of participation in the virtual markets.

I had ideal in bold here and I apologize to people who cannot read that in the back of the room.

Ideal is not zero and it is not infinity either. The reason I say it is not zero is because we are concerned as a load serving entity that right now if you have generators offering at cost almost all the load participants in a market are price takers, so they are offering and basically saying, "I will take any price that is available in the day ahead market."

If you fail to have virtual transactions who would fill the gap and who would provide the necessary information for PJM to solve their model and then that leaves us with the question of, "Is there going to be more divergence, and as a load serving entity, am I ultimately going to pay more?"

I heard this at a conference late this past year, I was talking about the benefit of financial transactions and how generally the benefit is that it

is intangible, it affects market participant behavior, so how can we measure it?

Somebody had said to me, and I thought it was a good point, that it's not just intangible because of virtual transactions that are not up to congestion at this point, but FTRs, these financial transactions are providing fee income, will schedule nine fees to PJM and also they are lowering the uplift costs for the other market participants, and I believe that is a tangible benefit they are providing to the market.

Thank you.

MR. SAUER: I was just advised that microphones are left open and we are getting static on the webcast. Please make sure that your microphones are closed if they were left on.

Thank you all very much.

Let us start with some basic questions on uplift causation and later in the day probably after the break we will see how it transitions.

We will move to questions of allocation.

Does anyone want to start with causation so see if everybody is on the same page or not and then go from there.

I believe this is more of an allocation issue and less of a causation issue.

We are in a couple different things. Particularly, from David and Wes, we heard that for INCs and DECs there can be power balance issues and congestion issues that cause uplift and for UTCs.

It is really just congestion issues. It is not power balance at all.

That is one of the big differences between the two products.

We also heard from a number of people, that is not every single transaction, in fact, David said some will help the market and some will hurt the market.

I do not know if there has been disagreement in the past especially in old Docket ER-131654 about whether UTCs do in fact cause uplift.

I just wanted to throw that out for everybody to see if there is disagreement on UTCs can cause some congestion related to uplift.

MR. ALLEN: Yes, an interesting question. If you look at some of the way this is presented, oftentimes what happens is that specific examples are given where a UTC transaction or an INC or a DEC can cause uplift and I cannot argue with that.

There are specific recurrences when any of the two or three, depending how you look at it, can cause

uplift.

The question that hasn't been answered, what is the holistic impact of INCs and DECs and UTCs, or on the whole, is the entire market's transactions, are they causing uplift to be incurred, and if so, how much, and we will pay it?

Conversely, are they lowering uplift and in which case why are you allocating any fee to a transaction that is lowering the total amount of uplift in the system?

As a part of EMU, and I know we will talk about EMU later, I am sure, we have asked for a cost causation study to be done and you heard Dr. Hogan say that cost causation cites end up being circular.

That said, and I don't necessarily disagree with that, there has been analysis done in other markets in MISO, for example, and CAISO, so forth.

In all of those markets they net out their INCs, their DECs, and that is an important component that is missing in PJM.

If I remember correctly from the MISO cost causation study, what they found was what amount of the uplift was caused by virtual supply, meaning, incremental offers, and if I remember correctly, is 1.3% of all the total uplift and that is why they are

charged the DVC rate or the deviations rate in MISO.

And that is fair.

That is just and reasonable. You don't want to throw the baby out with the bath water and charge transactions to a lower uplift.

If you look at the Yes Energy analysis that they did, losing 80% of the volume of UTCs, has resulted in higher uplift.

What is the point of allocating your cost to pay uplift that lowers uplift? We have just asked for a cost causation study in PJM.

In fact, as part of the EMU, there is actually a participant's proposal that is on the table moving towards voting an EMU that is based on the results of a PJM cost causation study that PM refuses to do.

One last thing I would add.

I saw the Yes Energy data and since we were speaking about the uplifts going up, the $1.52 of increased divergence in the market, on the back of the envelope, the $1.52 times the PJM load, that is $1.2 billion of increased market inefficiencies since the effective date.

That is something else to bear in mind.

Thank you.

DR. PATTON: I want to bring together the

different views of cost causation because I actually agree with almost everything Dr. Hogan said even though it sounds like our views are relatively different.

In a nutshell, what I heard Dr. Hogan say is, "Let's get the price formation right, the uplift issue will be greatly diminished, and at that point there may be no reason to allocate any of it to deviations."

What I said is, you should allocate it to deviations to the extent that they cause it. Those two are not divergent and let me explain why.

Let's imagine that real-time prices are $40, but they really ought to be $45 because you have a problem with your price formation in real-time.

What that means is you are not going to commit your units, and in the day ahead market between $40 and $45, and your loads are generally going to be under purchasing deviating and what are we going to do in response?

We are going to commit a bunch of gas turbines. What should happen, if price formation was good, is those gas turbines would set the price and we would not have to pay them much uplift because the real-time prices would reflect their cost.

We might have to pay them a little bit because of their startup costs, but not much and that would send a signal to the loads to buy more and the prices in real-time would go from $40 to $45.

The fact that prices are $40 in real-time, does that mean we want $40 prices in day ahead? The answer is no.

We don't want $40 prices in day ahead. When people talk about price convergence, when you know you have price formation problems, you don't want the day ahead prices to converge with prices that are depressed in real-time which is what you get when you allocate nothing to deviations.

What we want is the $45 price in day ahead because we want to commit the units that we ought to be committing and not relying on the gas turbines.

Let's imagine that it will take a while to fix the price formation problems, and if anyone has read my State of the Market Report when I recommend changes, it is on price formation the clock starts and it doesn't stop for a long long time.

If we imagine that we cannot fix those things immediately, how do we get the loads to see the cost of the gas turbines that we are committing on their behalf if the gas turbines are not setting the price

in real-time?

You allocate the uplift. You are paying the gas turbines to the loads that are under-purchasing and that causes them to purchase more and it improves the commitment in the day ahead market and that's why it's those deviations that are harming that are causing us to have to commit the gas turbines that ought to get allocated the cost, but they should only get the costs that are associated with the deviations.

They should not get costs associated with load, forecast, errors, and ramping issues that cause us to have to commit gas turbines that have really nothing to do with the fact that load was under scheduled.

MR. SAUER: Adam, I'm going to be unfair here and request that everybody to stick with cost causation. We will talk about allocation later. There will be plenty of time to respond.

MR. KEECH: I want to respond to a couple of comments that were made.

Regarding uplift recently in PJM, we talked specifically since the order came out in August, but it really backs up to coming out of winter 2014 where we had some significant uplift issues in PJM.

Since probably about March 2014, uplift in PJM

has been at historically low levels.

If you look at 2014 compared to 2013 notwithstanding January and February 2014 we are about $30 million a month less than we were in 2013.

The analysis presented here, the discussion about removing UTCs and uplift going up, we may need to look into some more detail around that because from our perspective, and I believe from the IMM's perspective, I do not want to put words in Joe's mouth, we are at historically low levels with uplift for a number of reasons.

We have taken action on a couple things. We had a very mild summer. We had low-fuel prices. There are a few things that are contributing to that, but I do not want to walk out of here where our thinking is we pull UTCs back out of the market and uplift went up because that is not the case.

The second piece is with respect to the cost causation analysis and we did have some discussion on this at the energy market uplift in your task force.

We took a look at an analysis that was done in MISO and there are a couple of roadblocks that we ran into.

One is the MISO analysis. This isn't really causation. It is more of association. It is kind of

like saying there is an accident and then there's a traffic jam, so any car on the road is guilty, and that is not really causality, that is more association.

You are part of the traffic jam and you are guilty by association and that is not a necessarily causality.

What we struggle to define is what that cost causation analysis actually is and from PJM's perspective, we think is extremely difficult to go down on a transaction by transaction basis or even categorized transactions, and say, "You are responsible for this piece and you're responsible for this piece."

The very very tricky problem to unwind, and so to the point that Wes made, we haven't moved for and we haven't done a cost causation analysis, frankly, because we have not defined what that term even means in the context of this discussion.

I wanted to respond to those two comments.

MR. HOLLADAY: Quickly now, on the operating reserve fee question. There may well be at historically low levels, but what we are finding is that in the weeks after the order they are higher than they were expected to be, right, so just to be

clear, it is not that we are claiming that there is a reasonably higher unexplored -- well, "historically high" is the phrase I am looking for. It is just that they are higher than they are expected to be and that is associated with the FERC order.

Is that correlation or causation? I think that absolutely works for further study.

On cost causation, I agree with Adam, the studies that have been done before are cost correlation and not cost causation.

That may be what you want, but just to be clear on what you are getting, if you are looking at the MISO study, you are looking at correlations and there is no guarantee that the correlation you find will be able to kind of unpick the cause of that cost, so just a word of caution.

MR. BOWRING: Let me agree briefly with Adam. I do not think it has been demonstrated here that either uplift has gone up as a result of the UTCs being reduced substantially or that convergence has got gotten worse.

Those are both complicated questions. We looked at them in some detail. I can safely say what presented here was of interest, but it does not demonstrate the claims that were made based on that.

A cost causation again to the agree with most of the peekers, it's very difficult to do it on a transaction by transaction basis.

It is very difficult to do it in real-time and what happens if a load or a transaction causes the unit to be committed which has a 12-hour min-run and that transaction then goes away?

How do you deal with all of that?

That is just one simple example, but it is impossible and is ultimately a waste of resources even to try to go down that path and the more appropriate path is to broadly categorize as we proposed doing the reasons for the incurrence of uplift and then spread it to everyone in that category equally if within that category those participants want to dispute whether some are good and some are bad, then that would be fine you could reallocate within the category.

I do not have any particular interest in doing that, but that could happen. Thanks.

MR. KLEIN: I commend PJM and acknowledge Adam. The uplift has gone down and the reason that uplift has gone down is because PJM has taken some different actions in terms of how they run their reliability commitment and second commitment and just being a

little bit more careful and sophisticated around that.

You have seen uplift go down, but that was unrelated to changes in participation and activity by financial bidders, so to the extent that there is no correlation there, that is something.

MS. STASKA: What is the relative impact of the different types of transactions? I spoke about this in my opening remarks as well.

Physical transactions that are deviating. They are being charged the same rate as INCs and DECs. I will not go into the allocation too much, but those are things like load under over forecasts or generation or demand response was supposed to be there and they did not show up.

That, obviously, has a much larger impact on the market than an INC or a DEC let's say because an INC or a DEC, if we are going to call it a deviation, we should at least call it a planned deviation since nothing has changed since the day ahead market was run.

Then a UTC is a planned deviation with zero power balance.

Like I said before, there is instinctually a ranking system here of what is causing the most

uplift versus what is not, or the most unit commitment or what is not, but we are left hanging as to what that correct relationship is between all of them.

We have PJM saying, "We are not really sure how to do that," or it is, "We are not really sure that we can do that and there is a good road map for us to follow."

I can tell you from a load serving perspective that when I under over forecast load, and then I have to pay the BOR for deviations rate to me that feels like a punishment.

I feel I am being fined with this large fee that is very volatile that comes after the fact. I feel that that's to help me self correct my behavior for under over forecasting alone truly can never be completely accurate and completely correct.

But I feel that that is to help mitigate my behavior and when you are assessing the same fee, that is to help mitigate physical deviation's behavior to planned financial deviations it creates the wrong incentive in the market.

As I said before, I am not saying that they should not pay any fee, and we will go into allocation later, but the same sort of allocation is

what is questionable here because the causation of it is completely different. Thank you.

DR. PATTON: People have referred to the MISO cost causation study. We actually perform the studies, so I would be happy to answer questions about it.

I would like to correct this notion that somehow you happen to be there at the same time, so you are causing it, but what the study actually looked at was the helping and harming deviations that were occurring relative to the day ahead that affected the physical scheduling in the day ahead such that in hours that MISO had to make commitments to satisfy the incremental real-time load.

If you say, "We have load that was under scheduled by 1,000 MW and MISO had to commit 500 MW because the load and real-time is higher than what was scheduled in day ahead, you could say, "The 1,000 MW happened to have been there at the same hour that we were committing 500 MW, so maybe it is just associated or correlated."

It's pretty hard to argue, though, that that deviation did not cause MISO to make the commitment because the best thing you could say is, "If we scheduled a 1,000 MW more supply in the day ahead, if

the deviation were not there, then maybe MISO would still have had to make that commitment, but that would only be the case if the demand and supply were not performing consistent with the day ahead outcome.

I certainly do not think that it is that hard to do the study as long as you are willing to make the assumption that changes in the physical schedules and the day ahead does in fact change the need for the RTO to commit to meet the need in real time.

MR. KLEIN: We do have to be careful and not to focus too much on the physical deviations because one of the things that you have in PJM, and separate from the financial deviations, is you do not want to create a situation where you say everybody has to balance their schedules.

Access to efficient spot market for settling imbalances is one of the critical benefits of having these competitive markets. You do not want to have to be the best load forecaster.

You want market participants to do what they do best and that can be wind units or other units.

One of the problems with the whole approach to this thing that allocates to deviations, whether it is financial or otherwise, is that the denominator gets less and less and less which creates a really

vicious cycle which we saw happening in PJM prior to 2008 for our reforms, and you also had the problems associated with participants using IBTs and things like that to reduce their scheduled deviations even though the IBTs are put in the day afterwards and had nothing to do it with what was actually happening, and everybody, PJM and the Market Monitor and everybody is proposing that IBTs be eliminated.

The better principle, you can get caught in a trap by going for, "Let's just get the scheduled deviations because it is counter to that principle that Bill and Joe were talking about, about spreading it widely.

You do want to try and do it cost-causation based, but you also want to spread it widely and it is hard to distinguish whether that wind unit, even though it deviated, might not have caused the actual commitments that are resulting in prices, the GT that got put on in Pepco that didn't set prices, that is not caused by the wind unit in Iowa.

MR. SAUER: Let's dig into how possible to determine whether an individual transaction caused, and we can debate the correlation versus causation as much as we want here as well, but did in fact cause uplift. Certainly there has been some discussion

about the MISO report.

It is my understanding, correct me if I am wrong, David, is that the MISO allocation process looks at transactions and assesses whether they did in fact cause uplift or not.

I would like to hear a little bit more about that, whether or not that approach could work for PJM and help to determine whether UTCs and INCs and DECs cause uplift.

DR. PATTON: If we were just looking for correlation, we could do an econometric analysis and say what tends to be happening when uplift is incurred and who knows what the result of that would be.

But if you start from the premise that the schedules in the day ahead matter, so if you schedule more physical load, you are preparing the system to serve that load in real-time, then the deviations that move you away from that is in part where you want to focus on and then you want to categorize all the other factors beyond the deviations that could be affecting the commitment of resources.

The way the study was done, it is important from the capacity perspective to look at the net of everybody's deviation because the need to keep power

and balance, and if that's why you are committing resources, then everybody's deviations, positives and negatives, are playing into that.

The first step in both the allocation process that MISO runs, and in the study, is to net all the positives and negatives together, and say, "In this hour all physical and virtual, and everybody together, was the net deviation helping or harming?"

If the net deviation was not harming, then it is very hard to argue that the deviations are causing any of the uplift on the capacity basis.

Then we do the same thing on a congestion basis based on the flow that those day ahead and real-time deviations cause on the constraints.

You can work your way through a process like that, and I understand that people would say, "The more accurate way to do this would be to rerun the day ahead market," to do some sort of simulation where you take the deviations out, that is far more difficult and is not a very useful exercise because it does not account for the change in behavior that you would see if those virtual transactions in UTCs were actually not there.

It is a valid approach, and if you look at the results in the study, there is nothing that comes out

of there that is not intuitive.

I mean there are no results that you say, "Why does that appear to be causing uplift and that not?"

It is pretty well understood why various classes of behaviors cause uplift and not coming out of that study.

That is why, in part, the formulating and allocation around it was possible because it is logical and most people understand how it works.

DR. HOGAN: I am still bothered by the formulation of the question. Frankly, I don't care about uplift.

I care about total costs of the whole system. The analysis you want to do is the cost causation against the total costs.

It could be something came along and uplift went up and total costs went down and that is good. What I am interested in is the total cost.

The uplift is just a story about how the prices work relative to the total cost and then how much is going to have to be collected some other way and you are not trying to minimize that number necessarily.

You might want to minimize subject to the constraints, but nonetheless, that is not it.

Focusing on that question is the better total

cost question is going to help you a lot more. Then when you do that, you want to look closely, and ask, "How much of this did I just analyze of these total cost causation could be attributed to marginal changes?

If the answer is a lot, then that should be in the LNPs because that is what the story is all about, the changes in the total costs.

So we have something wrong with the LNP model that we could fix and then we will end up with something that is left over and then I repeat what I said before.

If you keep reverting back to the problem, uplift, we want to look at the cause of uplift, then you are asking the wrong question.

It confuses me to try to figure out how to answer it. I agree with Adam. There is a much deeper reason why it is hard because it is impossible. Changing the question is what needs to be done.

MR. SAUER: I will only ask one more question on the cost causation and then we will get to uplift and get to the allocation part of it.

Is there anybody else on that question?

We will talk about appropriate allocation later,

but I am thinking of a situation where you have both an INC and DEC and the UTC, and INC shares the same INC as the UTC and the DEC, shares the same DEC when there is a UTC, so fundamentally they are the same transaction.

They settle the same way. My understanding is they have the same impact with a dispatch. We had some discussion with the first panel about why there should be some differences in how they should be treated for FTR forfeiture rule, but from my understanding, they are the exact same transaction.

Certainly one is assessed uplift independently on both INCs and the DECs and the other is not assessed currently.

Am I incorrect in looking at those as being fundamentally similar transactions and that if one causes uplift, the other will cause uplift or the other does not cause uplift the other will not as well?

DR. PATTON: Because they are the same and if you are not charging them the same, then you are doing something wrong and then MISO would under its allocation charge them the same, both of them would be charged only, the congestion related uplift would be charged the same to both of those transactions,

and on the capacity side, the fact that the participant has an INC and a DEC they cancel each other out is recognized in allocation.

The reason it is recognized in allocation is because on a cost causation basis the power balance impact of that is zero.

Before you allocate dollars you have to do that netting or you should do that netting.

MR. ALLEN: You pretty much stole my thunder. This is what I was talking about earlier which is currently an INC and a DEC you clear same hour same volume and PJM is being charged twice for some market but with some others they do net with IBTs.

Current allocations exist in PJM for UTCs is not incidental nor accidental. It was done the way it is because it recognizes the transaction is flat that gets you to the same result as a market participant would get to with an INC and an IBT your net amount and your flats. That is ultimately your problem is you are flat, and it is being charged to energy deviations.

If you have an INC, and a DEC, same volume, same hour, and you are clear on both, you are getting charged two energy deviations and how much did you actually deviate?

You did not deviate. There is no deviation from a capacity standpoint.

If you think about it in basic math terms, as it stands right now in PJM with the current allocation methodology for INCs and DECs, a negative one megawatt and plus a positive one megawatt equals two energy deviations where a negative one plus one equals zero.

That is the core problem.

That's why you have the illusion of preferential treatment is because you are discriminatory with the INCs and DECs and they need to be netted in the system because there is no energy imbalance if you are simultaneously clearing an INC and a DEC, a negative one plus one equals zero.

MR. HOLLADAY: This may not be exactly what you had in mind, but one way that you could introduce potentially uplift is with the execution risk on the INC and DEC separately.

Your goal is to get net zero power balance, right, and when you do a UTC, you are guaranteed to be picked up on both sides.

You try to do that as an INC and a DEC there is a risk that you are picked up on one side, but not the other of that transaction in which case you are

now not zero power balance anymore and you are hoping to have no impact on the market, but in fact you are.

That is not exactly probably the path you had in mind, but that is an avenue through which UTC can avoid affect in the market and the INC and DEC could potentially.

MS. STASKA: This is interesting because, obviously, UTCs, INCs and DECs are defined differently in the tariff, and as Scott said, it is paired so the source and sync always go together.

Something that none of the other panelists have talked about is that they are bid into the market differently, so if you want to do a synthetic UTC using an INC and a DEC, sure, if you clear both sides, then it would settle at the same price.

But the problem is you would have to do an uneconomic INC and an uneconomic DEC to ensure that you clear both sides of that versus a UTC, you can say, "I'm willing to bid up to this dollar amount," and you can clear both sides at the same time.

You are doing an economic transaction in the market. When you look at the physical market participant, you have a generation offering at cost and there are always price takers and so they are not economic either.

If we are going to take an economic transaction and turn it into two uneconomic transactions, I don't see how that is benefiting the market.

They really are different even though financially they settled to the same number, they are not impacting the market the same because the market participants will be bidding them differently.

Thank you.

MR. KEECH: From PJM's perspective, if you look at the way they impact the system as a surrogate as to how you should allocate the uplift, there are times when the UTC is apparently INC and DEC and is up to zero and there are other times when it is not really exactly the same.

Let me define those two for you.

If I bid in a UTC from point A to point B, and there is no congestion, that looks like they are at the same essential location and I can net those out and there is really no impact to the system period, power balance, congestion, nothing.

But when it is bid across a congested path, you essentially have isolated those two ends into sort of local market areas to where now I cannot serve the DEC with a supply from the upstream side of the constraint and I cannot sync the INC with downstream

load.

When you split those two up, it starts to look like a different type of transaction than just an inquiry. It starts to look like two different types.

I would probably argue that there are times when they are the same and times when they are not the same.

Those times when they are not the same, get to the scenarios where the UTC can cause PJM to commit generation that incurs uplift payments to manage congestion and that is sort of how we get to where UTCs may end up creating uplift if PJM commits generation to control flows imposed by UTC.

MR. BOWRING: If I understood your question correctly, the answer is yes, for reasons different to at least they were from some of the others, and what Adam said, the fact that there may be zero power balance at times is interesting, but not really relevant to a lot of the situations where UTCs exist and both our analysis, and PJM's analysis, have shown that UTCs do affect both unit commitment and unit dispatch and therefore we think affect uplift and they should be treated the same.

DR. PATTON: I am a little confused. I have been talking about distinguishing between capacity

and congestion related uplift, so most of what I thought I was hearing was maybe there is an agreement that UTCs don't cause capacity related uplift, they can cause congestion related uplift.

The thing I was confused about is, an INC and a DEC, if I inject one hundred and withdraw one hundred, and it affects congestion, and I have a UTC that is 100 megawatts injected and withdrawn, then it seems like those would have to have the same impact on the congestion-related uplift.

But it sounded like PJM thought they had a different impact.

MR. KEECH: No, I was specifically saying an INC, or a UTC, not a paired INC and a DEC versus UTC. Sorry for not being clear.

MR. SAUER: Thank you. We will go to one-related causation question and then take a short break and jump to some allocation questions.

Some of you mentioned the 206 Order from September and thank you very much for your thoughts on some of the trends.

We just want to hear what the Commission staff should take away from the UTC trends that are cause correlated or however you want stated in this case with that order. The question is what should we take

away from that?

MR. KEECH: PJM did some analysis probably towards the end of last year to try and figure out what the market impacts were from the reduction in UTCs, and I am going to assume that the 80% that has been cited is probably roughly accurate based on a graphic that is shown.

What we really found was, it was difficult to determine whether there was a positive or a negative impact. There were areas where the price convergence looked like it got worse, but there were a lot of other moving parts.

We were changing seasons from summer into fall and some of the other things we talked about.

Something we did see was the number of constraints that we hit in the day ahead market went down significantly, but the amount of congestion dollars didn't go to -- what that sort of infers is you have UTCs taking very small congestion positions in the day ahead market that do not really impact the total amount of congestion, but certainly bind up the day ahead market software and make it a much more difficult problem to solve although the monetary impacts are very small.

We looked at balancing congestion impacts. I

realize I am jumping back to the previous panel, I am trying to summarize.

The balancing congestion impacts. We saw some "levelizing" and sort of minimizing of the extreme sort of negative balancing congestion days.

We saw that for a period of time, but then we saw those days reoccur for unrelated reasons. It is really not clear that the reduction in UTCs has limited highly negative balancing congestion days or that price convergence has really gotten better or worse.

MR. BOWRING: My first six or seven slides cover a lot of this, but certainly it is the case that UTC transactions were down significantly.

One of the interesting points about that is that the profitability of their remaining transactions was substantially higher reflecting the fact that these transactions were facing the risk of having to pay uplift and only those which would have covered the that expected uplift payments were continued to be engaged in.

One of the most dramatic changes is the number constraint hours day ahead and real-time bind and constrain hours of weekly day ahead binding and constrain hours, and Adam mentioned this, went down

pretty significantly, particularly my Slide 6 shows that.

As we already discussed, it is very difficult to say yet whether there has been any measurable impact on either uplift or price convergence, but you can see based on the results of prior analysis by PJM, and by us of the same data that with and without UTCs price convergence varies.

For some nodes it is closer and for some nodes it is farther apart. UTCs are typically more profitable on the source side and tend to lose money for a large proportion of the time on the sync side and their corresponding impacts on convergence.

It is not the case that UTCs uniformly improved convergence at both ends.

MR. KLEIN: It is hard to know given the period that we have gone through and not having like summers and the Yes Energy study sounded very interesting in this score, but it is important, one of the factors that came out from AD1414 on the price formation issues in the PJM market the peaking units don't actually set price, they are not even able to set price.

Years ago PJM actually did a study of, "Should we fix this?" and in their analysis they said, "We

have got enough financial bids in the market that actually make the market liquid enough." and over the last several years you have seen a big increase in UTCs and a decrease in INCs and DECs and now with the Order you have a decrease in both.

One of my concerns in this is that you actually will reduce the liquidity from the convergence bids if you simply treat UTCs like INCs, or DECs, or even treat them as an INC and a DEC and double the charge to them, then you reduce that flexibility without making lots of other changes in the system and the liquidity that those financial bids provide to the market is really important for the price formation.

I have heard some PJM's staff at times say that they would not even want to run the PG market without financial bids.

MR. KEECH: Just to jump in on what Adam said about the modeling of inflexible units. What he was speaking of was the ability for inflexible typically combustion turbine units to set price in the day ahead market.

While I agree with what he said for the large majority of history, we actually just changed that late last year and I want to say maybe November - December time period, so that those units can now set

price.

I just wanted to throw that out there.

MR. ALLEN: Something we heard Dr. Bowring and Adam state they were talking about that number of day ahead constrained hours pre-order, post-order, part of the problem or possible part of the reason why we saw such a decline has to do with the limitation of the UTC product as it exists.

From my opening remarks, I said it is approximately about 300 unique nodes and also into the big caps, plus or minus 50 wherein contrast INCs and DECs were a much wider big cap, much wider availability nodes.

How does that impact the number of constrained hours in the day ahead?

If a market participant or stakeholder notices a point or a node binding in a PJM system in the real-time, and they want to transact on that path, they may not be able to with the UTC.

They may have to do something that is locationally similar, but it is not the same because where the energy prices are binding in the real-time, very likely it is not a UTC available node.

By submitting that is similar, but not the same, you can cause different radial effects.

With all that said we were talking about the number day ahead binding hours and Adam did say that the dollar values minuscule really does not make a difference, but we are talking about hours.

When we were looking at Yes Energy, the data and the difference in convergence and divergence before and after an order, we are talking about $1.52 which, if you extrapolate that for a year, you are talking about, like I said earlier, $1.2 billion of increased market inefficiency due to the lack of UTCs that is available now that has been entered into.

One last point. The IMM stated the increased profitability of UTCs since the refunded effective date and he attributes that to moving to more profitable paths and that is probably a portion of it.

The increase in divergence between day ahead and real-time is another part of it and another reason why profitability has gone up, but at the end of the day, we are really not talking about profitability.

The numbers, if I remember correctly, as he stated previously, it has gone from 32 cents to 94 cents.

If you allocate uplift into these transactions as it is done with INCs and DECs currently, they are

not profitable still and they still are losing money, so why are they being entered into?

That's a good question. I really cannot answer too well. Some market participants are hoping that this turns out right.

It will be interesting to see what happens if they get allocated an uplift twice and you might see something reminiscent of what FM and MISO of a few years ago with the RSG refund and you saw some companies go out of business because of it.

Those are my thoughts.

DR. PATTON: In MISO, I have been trying to get something like an up-to-congestion product introduced for about three years in part because the congestion-related price differences are not well arbitraged between day ahead and real-time in MISO.

Participants are forced to take much more risky positions where they force an INC and a DEC to clear to arbitrage or speculate on price differences that they're seeing that are sustained between day ahead and real-time.

In a situation where you see the up-to-congestion transactions drop by 80% what you really want to focus on rather than general price convergence is convergence on congestion and really

focus in on those areas where the up-to-congestion transactions are having impacts.

Although I will say that a significant reduction in day ahead binding constraint hours is a bad sign and the reason it is a bad sign is to converge the congestion between day ahead and real-time.

What you see in real-time you may see a constraint bind 10% of the peak hours at a $500 shadow cost.

When that is perfectly arbitraged, the way what it looks like in day ahead is more like it is binding 100% of the peak hours, $50, and that is because the transactors are putting in an expected value in order to make money.

You expect and we generally see this, that the day ahead binding constraint should be much higher than the real-time.

The important thing to do, though, is to take the shadow costs and compare them, and see how well they are converging.

If I take 10% times $500, and 100% times $50, I will get exact convergence. That sort of analysis may give you a clear picture of how the reduction in UTCs have affected convergence.

MS. STASKA: I cannot give a great background in

how PJM and their assistance have been impacted by this, but what I can tell you is how market participant behavior has changed.

The majority of traders left in the market have to assume that there is a fee that they need to account for. When they are making their bids, they have to add a fee and they do not know what it is.

Not only is it whatever they expect the fee to be, there is a risk premium for what the fee could be, but they don't know what it is.

Market participants do not know if it is going to end up being the RTO wide BOR for deviations, right, or if it is going to be the rate on the sync which might be RTO wide for deviations plus the west adder, as the regional adder, or it could be the day ahead operating reserve rate or it could be a fixed fee.

Nobody really knows what it is.

What we are seeing is we are seeing people bid at much higher dollar values than they normally would have because they have to include that risk premium in that fee assumption.

What happens when you have to bid on a fee like that is that it can cause divergence in the market because it can never converge more than the fee

assumption because that is what people have to assume they are going to collect from the transaction.

Dr. Bowring and Wesley Allen said something about the profitability of the trades increasing. Well, the profitability is only increasing if you do not take into account a potential fee plus the risk factor whatever that potential fee might be that you are not counting for.

At that point you have to look, and say, "Is it really more profitable?" and since nobody knows what the fee is, are they still going to be profitable or not and nobody knows the answer to that at this point.

Thank you.

MR. HOLLADAY: David is absolutely right. I'm not sure that looking at the darts spread is the right way to evaluate this. The reason why I presented to you today, had the darts spread is that is what had the existing analysis use.

The previous studies that found and proved convergence use dart spreads, so I wanted to use that.

Congestion or potentially the loss in congestion sum together is potentially a much better measure and so buried in that robustness checks, the line I

showed. We have done that and the story does not change when you focus on congestion.

We also looked at just the set of nodes that are eligible for UTC, and again, the story does not change there.

The data exists to do this type of study in a very careful way. There is volume data for all of these UTC transactions across individual nodes and there is volume data for what is still transacting.

With that volume data, you could look very carefully and look at the level of convergence in congestion prices across nodes that formerly were heavily traded, but are no longer. That is feasible and the people who have the data should be doing that for sure, or even better, share the data with me.

MR. BOWRING: Stephanie's point is certainly correct about profitability after any fee, but that is besides the point.

It is consistent with a lot of what I have been saying and I recognize that the net profitability after the fact will depend on the fee because we have a date from which the fee will continue to be incurred.

There's a broader lesson here which is, as we said back at the time, when UTC was produced it does

not make sense to introduce a new product without understanding how the rules apply, what you said from the very beginning in fact so the numbers voted on initially not to have the UTC product because there was no agreement on how uplift would apply.

We are seeing the outcome of that uncertainty. It has been an ongoing disagreement and now it is coming to the fore and the same thing applies to the FTR forfeiture rule.

Everyone has to understand the rules before the product is created and understand all of the rules associated with it and we did not have that in this case.

MR. ALLEN: I hear this from the IMM frequently that the UTC product was voted down in the state court process, and what he is referring to is back in 2008, 2009, sometime around that time frame, there was a spread bid task force in PJM, and UTCs by the way, it existed at that time, UTCs had been in existence for several years at that time.

A spread bid task force was created.

I cannot remember how long it lasted, it was twelve months or so, and when it finally came down to a vote there was a ton of questions that had not been answered that needed to be answered.

I had asked some of the questions at the time as well, one of them being, "Is this a replacement for the UTC product? If we vote for a yes on a spread bid, does that mean that UTC goes away?"

There was no clarity there. At what points would it be available all on the spread bid? Would it be just in the hubs, and the zones, just the interfaces, all of the nodes, how would uplift be applied?

Would it be no uplift like there is for UTC or what was currently at that time? Would it be applied one time or would it be applied two times?

There are all of these questions about it. When it came time to vote, and I trade UTCs, I have since 2007, I voted against myself because there is so much uncertainty.

Why would I put myself out of a job by voting for something with so much uncertainty?

So yes, the spread bid was voted down in the PJM task force that existed several years ago, but the UTC product had existed for years prior to that. It was mandated by FERC. It has been in the market since 2002, or 2000, when day ahead market was created.

To say that it was voted down by the

stakeholders, I take a little bit of exception to that because I voted it down too, but clearly, I want the UTC product to exist in the market, but I could not in the UTC product in order to create a spread bid product when I had no expectations as far as its availability and how charters would be applied to it.

Thank you.

MR. SAUER: We are starting to stray from the question. Let's try to keep the comments relevant.

MR. KLEIN: I will be brief to Joe's point. It sounds like MISO, the Market Monitors, have been trying to produce a UTC type product and have really been stymied.

One of the great things about PJM over the years is that it had been able to innovate so much in so many different areas from expansion to new products to long-term FTRs, and that's a compliment to the PJM staff in how they are able to see things that the market needs that are really beneficial and despite some of the problems that we all know about, to get the process and get them done. I am sure David Patton wishes that he could have UTCs sooner in MISO.

MR. BOWRING: Yes, without responding in too much detail, as Wesley said, everything he said stands for the notion that there was a lot of

confusion about what the rules were, nonetheless, "We got the product with all the confusion," and now today in the time since then we are bearing the consequences of that uncertainty.

MR. SAUER: Thank you all. That is a lot for us to think about. We will take a ten-minute break and come back and talk about allocation.

(On resuming after a break.)

MR. SAUER: Thank you all and welcome back. During the opening statements, I heard a number of guiding principles for cost allocation.

I believe Joe mentioned spreading across, making the numerator as a small as possible and making the denominator as large as possible.

Dr. Hogan certainly talked about spreading the cost to the most inelastic consumers essentially.

I believe David mentioned some cost causation principles and mentioned some beneficiary base principles.

Just to get a sense from the panel, the principles, in fact, even if they are competing or not, which individual principle or which multiple principles should guide cost allocation decisions and how that impacts any rule that would be implemented?

I will not call on anybody first so let the

volunteers come forth.

MR. KEECH: Let me explain what we do today and what the principles are.

The allocation of uplift today in PJM looks at a couple of different things, but in general it boils down to either it gets allocated to load, if it is for a reliability related problem, like we schedule units for conservative operations, the allocation goes to load and the concept is the load is the beneficiary of those to maintain reliability.

There it is a beneficiary.

You could also argue causality in order to maintain low units, so you sort of end up at the same spot.

The other piece is the allocation that we do to what we call deviation, so these are deviations in real time to either the day ahead schedule or in the case of a generator that is not following dispatch, so a component of the allocation goes to them.

The rationale behind that is if everything was scheduled appropriately and exactly correct in day ahead, and all of that happened in real-time, there would be no uplift payments, so any kind of deviation in the middle there is really causal to that uplift and therefore it receives that allocation.

Today when we allocate that deviation charge, and Stephanie referred to it as a BOR, that is a balancing operating reserve rate, we allocate those to INCs, to DECs, to generators not following dispatch at the same rate.

Whatever megawatts you are deviating, if you are a virtual transaction from your day ahead position you get allocated that number times the rate if your generator is not following dispatch, however far off you are from where we wanted you to be you get allocated and that number of megawatts times that rate.

Largely today we work on sort of the high-level version of causality, although in other areas of our market today we use beneficiary principles like reserves and things like that.

DR. HOGAN: Let me play David Patton and point out Adam's argument implicitly assumes that balanced schedules are what you would have and you would have no additional uplift if nothing changed, but everything changes between day ahead and prices.

Fuels go up and down and the weather changes. All kinds of things change.

What you want to look at is what the costs are given the conditions that you have actually faced

when you want to analyze the impact on total cost, the balance schedule requirement, and think back to the Enron balance schedule model of the California energy market with power exchange and the disasters that that contributed to.

We know this is the wrong answer, right, so having a cost allocation methodology that is based on something that we know is the wrong answer is not going to be a good thing.

Focus on the total cost and the real time. Focus on the total cost as estimated in the day ahead and then get the efficient solution as close as you can get and then you can focus on allocating the uplift after the fact.

Try to torque it and get to this balanced schedule argument is very dangerous.

DR. PATTON: I will play myself now.

From listening to the description of the PJM allocation, I would say that that's not at all based on cost causation.

What it sounds like to me, and this is what New England does, and others, is to just simply assume that the deviations are almost entirely the cause of the uplift and then smeared over all of them.

When you fail to distinguish between an INC and

a DEC, there is no way to defend that that is cost causative at all because they are doing two completely different things to your need to commit resources after the day ahead when you fail to distinguish between uplift to what is incurred for congestion versus uplift that is incurred for capacity, then you are definitely not doing anything that looks like cost causation.

We know why we are committing these units or the RTO knows why they are committing the units and they know which deviations from the day ahead solution are contributing to the need.

I agree with Dr. Hogan that balancing the schedules is not the objective because a lot of things change.

What that really means is, if 20% or 30% of the actions that the RTO takes they take because of physical deviations from the day ahead, all these other changes that cause the RTOs to do things, if you allocate on a cost causation basis get allocated somewhere other than to the deviations.

That is the point of having to go through a multistep process to do the allocation. It is not difficult, but it creates much better incentives for the participation.

One last comment on your numerator and denominator.

My guiding principle is the cost causation principle. Some of these other principles, and I do agree we need to get the prices as correct as possible, and at that point, we don't have much uplift to talk about, but if you think about my example earlier where I said that the real-time prices are $45, but they ought to be $50, how do we get the day ahead to clear at $50, so that we have an efficient commitment because there is no getting around the inefficiency of having a bad day ahead solution.

If you do not commit the units, then you ought to commit the commitments that occur after the day ahead. They are going to be more expensive and increase total production costs. You really want the day ahead to clear it at an efficient level.

These numbers are exaggerated, but if I do something to pump up the denominator and reduce that allocation of costs from $5.00 to $1.00 that sounds like a good idea, but that will cause the day ahead market to clear at $46 and so then the only driving principle should be cost causation.

MR. BOWRING: The first point, and the one that

Bill Hogan has made repeatedly, first, you do everything to get the prices right minimizing the amount of uplift.

Second, as part of that you make sure that you assign things that are treated as uplift specifically to particular participants if it is doable, and the examples, there are Blackstarter, ConEd Wheel, things like that which have historically been part of overall uplift, but which really should not be assignable to particular subsets of load, for example, in a particular zone, particular areas, whatever it might be, so that reduces the size of the problem.

Then, after that, I think cost causation, exactly what that means, I am not sure, but cost causation is certainly a principle to be followed, but so is the ability to implement it and do it in a fairly simple straightforward and transparent way.

I do appreciate what is being said about the current PJM allocation. I don't think that does describe what we are proposing.

Potentially what we are developing with PJM is a way forward through the EMU, so we are addressing some of that appropriate criticism that has just been raised here.

Thank you.

MR. KLEIN: To answer your question. Let me agree with Joe. If you are looking at a first best approach, start by allocating the things you specifically know you can allocate like ConEd Wheel or Blackstarter.

But then when you get beyond that there is a benefit to simplicity and then the next thing I would go to as a first best would be the charge to the inelastic participant who happens to also be the beneficiary from the price suppression of the real-time market, as I said, so you can use a "beneficiary pays" argument.

That is how a lot of the markets roughly do it, New York certainly does, California, and ERCOT.

If you are looking at a second best, it would be spread as widely as possible, just load, plus everybody you want to throw in there.

That is kind of second best to try and get the transaction costs down because you know with PJM as we get into these because it is being charged to the deviations, so you have incentive to balance your schedules and everybody creates that vicious cycle where everybody tries to balance their schedules and avoid it and that is inefficient and the charges go

way up.

So it is very problematic.

MR. ALLEN: Broadly on allocation, I would not say the current PJM contract is necessarily based on cost causation.

How we arrived at the current allocation, the Task Force was similar to EMU back several years ago and it was a negotiated settlement amongst stakeholders and there was not a cost causation study, however the MISO study is or was, there was not any sort of study done at that time.

Likewise with this look back, or the look at uplift allocation, there has not been any detailed analysis.

It is of paramount importance, the cost causation principles that creates the proper incentives in the market, it creates transparency in the market.

Without having those proper incentives, there is no incentive to lower uplift.

There are certainly in helping and harming deviations, if a virtual transaction or any other type of transaction is helping deviation, then it is helping to convert day ahead in the real-time. It is helping lower uplift, and if you assign a cost to

that transaction, then you may be precluding transactions from being entered into the market that are improving your day ahead solve from being done.

If you are doing that, then by allocating culture preventing lowering the costs, you are increasing the costs.

Ultimately, the financial transactions as they relate to PJM, since this is what this is about, cannot sustain the uplift for INCs and DECs and UTCs will not be able to sustain it either as it is entirely too high.

As far as cost causation, just to give you an idea, in PJM right now, if I remember the numbers correctly, it is 41% of all DECs and 52% of all the INCs in the PJM market are all clearing at West Hub.

That means they are simultaneously being cleared. That means at the most PJM is acting as a clearing counterparty.

They are clearing one participant's transactions against another participant's transactions. Now are they causing uplift? No.

They are changing unit commitment. They are not changing dispatch. They are not changing prices. They are just clearing the transactions.

But unless they are one of the few that can net

out with IBTs, all of those transactions are paying uplift, uplift that they had no possibility or probability of causing.

The current construct as relates to virtual transactions is calling cost causation a little bit difficult to believe and that's why we like the MISO construct.

The MISO construct handles a lot of these problems as fairly and efficiently as you possibly can where you differentiate between helping and harming deviations, to differentiate between energy deviations and transmission deviations.

The concept of spreading the rate out across as wide as an array of participants as possible while simultaneously ignoring the causal factors, and the inelasticities of certain transactions of the elasticity of others, you are throwing the baby out with the bath water. You are increasing your costs in order to try to be unseemingly fair.

Those are my thoughts.

MR. HOLLADAY: Economists traditionally do a better job at efficiency than fairness, so I will pass for the most part, and tell you about fairness because I am not very good at that.

I have the type of questions that I would ask to

try to figure out what is going on here. One would be, "Did PJM and the market participants expect 75% to 80% drop in volume after the order or was that a surprise?"

That would help us to understand the elasticity of these traders in this market.

Where did all that volume go? That was a lot of money that was going into PJM. Is it sitting a checking account somewhere waiting or is it in other products in PJM?

Is it in other markets? Can we see changes in the performance of other markets?

If we understood whether this was an expected outcome of the order and where the money went that would be helpful to understanding what type of fee structure you could implement that would keep this volume in the market because it appears to be having some benefits.

MS. STASKA: When we look at cost causation that certainly should underpin the entire cost allocation principle at PJM and I agree with Dr. Bowring at the same time it should be simple and straightforward.

As both a financial participant, and a load server, my main concern is having a fee that I can project, that I can anticipate that is simple for me

to understand so that I can put it in my rates, so I can put it my estimates, and I can put it in my bids.

But at the same time we also have to be cognizant of any fee that we set, that will affect volume in the financial market, and essentially, could affect the number of load participants as well, but I will leave that on the wayside because financial participants can easily leave the market, so we have to make sure that we center break this desirable for the ideal amount of participation in the market without discouraging the participation that we need.

We can see this actually in ICE and CME which are two derivative trading platforms where ICE, when they want to change our transaction fees, if they even want to change their credit costs which are an indirect fee to participants, but let's say they want their margin requirement of their credit requirement to go up, their sales team has to approve it before it happens so they compare it to CME Group and they are competitive amongst one another.

What we are seeing, the different markets are so different from one another in how they assess these fees, the financial participants can say, "Credit costs or uplift fees in this market are too high

right now, so we are going to trade the southern markets."

They move their capital. They move their trading business very easily.

What I am afraid of is the load server on the other side of that is, "Then what happens to the market they have left?"

We have seen what happens in New England and we have seen what happens in MISO when people are seeing too high of uplift fees.

I want to ensure that we are not just looking at cost causation, but we are also looking at what is the ideal volume, yet we want in these financial transactions that can easily leave the market.

We will talk more later about what is happening in the EMU process at PJM, but something that people are talking about it should be one uplift fee kind of spread across everybody.

As a market participant, in general, I want to ensure that we have an incentive for load to bid and to bid day ahead market.

I do not want load to not have an incentive and then to have the same feed to be in real time because, obviously, those deviations are causing a large portion of uplift and my concern is that if we

make a change like that or that a change like that it is anticipated that we will see bigger problems.

We work in New England as well and we definitely see more problems with price spikes and divergence there than we do in PJM.

That's one of our main concerns as well which is that those proper incentives not only for financial players, but for load servers are in the market as well.

Thank you.

MR. SAUER: Let's take Stephanie's point and expand on that fee concept. As a non-participant in EMU we are an observer as anyone can be to the EMU process. One idea that has been debated around is a fixed rate fee.

From what I can tell, there seems to be where some proposals have reconciliation after the fact and some of them do not.

I just wanted to see how the fee was received overall by market participants, some of the advantages and disadvantages of the fee?

Any other points?

MR. KEECH: I will try to summarize some of the discussion at the EMU STF.

PJM started with a proposal that looked at a

fixed fee and we said it would be established monthly.

The intention of that was, "Let's make it simple and straightforward and predictable," and there are really two problems.

One was market participants in general had an issue with paying forward for uplift, so if I charged you $1.00 for every transaction, and I over collected today, I was impacting people's cash flows negatively on that day given that that uplift was not going anywhere. It was just sort of holding it in escrow.

That was a little bit problematic for some members, the fact, "I am not paying for what is being incurred today. I am paying for what is incurred on average."

That was one of the issues.

A secondary issue was, if it is a flat fee, everybody is paying the same fee, and therefore, someone is paying for uplift that they are not causing because it is not all caused equally by everybody and we can all agree with that.

Then the last one was, what happens in the months that the flat fee does not collect enough money?

We were just coming off of January 2014 where we

had significant amount of uplift, and if we looked at an average rate over some rolling average period, none of those rolling averages were ever going to cover January, and no one wanted January in the rolling average because it was going to over collect in another month.

When you look at it from that perspective, then you get into this issue of does there need to be a deferred balance where you hold maybe $100 million to cover outliers and what happens with that?

What started as a simple concept, and when you get to there, it gets really complicated and really differing sets of opinions.

That is where we eventually did a poll and we ended up abandoning that because there was a lack of traction with that concept.

MS. STASKA: From our perspective when PJM came out with their original proposal, our main concern was instead of being worried about the rate that is published today which we know is seven to ten days from now, right, so seven to ten days we will know what the rate.

That means in seven to ten days I can respond, so that if all of a sudden rates spike a lot, then I can say, "Maybe this is a trend and maybe I need to

be concerned and I can adjust my bids accordingly as a financial participant or a load server."

But then you go back say a month or two months later, you say, "We are just going to true it up," essentially you remove that time for me to react from seven to ten days to one or two months out which is going to significantly impact my ability to do business, and ultimately, I will have to put a risk premium in when I'm serving my retail customers, so it could increase rates as well.

MR. ALLEN: Adam pretty much got it right. The first time I heard it, the concept of a fixed fee sounded doable, but when you start adding in a recollection which was less of a concern for us in a retroactive pay make whole, and all of a sudden your fixed fee becomes a variable fee you kind of defeat the purpose of the fixed fee, it is variable, so it did sort of fall apart at that point.

There is another proposal that is still out there. The EMU that has a fixed fee for the financial participants.

The purpose of it is you set the rate there then you want to optimize, as Stephanie has mentioned, a couple of times the number of transactions in the market.

You do not want too many and you do not want none, obviously, so you collect some amount of uplift and then the leftover, if there is any leftover uplift that needs to be paid is allocated to the participants who cannot leave the market.

This is not my favorite proposal, but if the rate is set at the appropriate level for financial transactions, it is plausible and it would work.

But ultimately a fixed rate? What is the goal here? Is the goal for simplicity? Are you trying to allocate cost in such way that it is easily understood?

We are trying to have an efficient market and market efficiency matters more than simplicity.

MR. BOWRING: With any of these principles you can take it too far. A fixed rate is taking simplicity too far.

It certainly is simple, but it is also wrong by definition. Everyday it is wrong.

Ultimately it is not simple.

It sure seems that it ought to be simple. If you believe in cost causation you cannot possibly believe that a flat rate is right unless you want to pass the risks onto somebody else.

If you are going to bear them within the group

that needs to bear them, it cannot possibly be the right answer because you are just shifting it across days and weeks on participants.

If you want to shift it to somebody else, then that is not consistent with cost causation. Thank you.

MR. KLEIN: It is actually not a horrible outcome relative to what we have now, so everybody is against it. I know the market participants voted it down, but it is the second best solution there is to try to spread something widely.

As we have heard from PJM, and from others, cost causation is really hard here, so if you end up in that second best, by spreading it widely, then that that's certainly a proposal that we could ultimately live with. I do think that there is better you can get to, I just don't know. It is not what we have now, that is for sure.

MR. SAUER: I believe Adam mentioned that there are a number of competing proposals in EMU that hopefully will be voted out. Was it said Q2 2015 to think back on the date.

What should the Commission and the staff take away from that process? Should we be hopeful? Is it unpredictable?

MR. KEECH: Perhaps I am the one to answer that. The proposals? We have really run the gamut. They go from sort of this quasi-fixed fee and then allocate the rest to somebody else all the way to just sort of tweaking what we have today.

There are a varied number of proposals, and if we were ever going to agree, then there has to be one that we can agree on in the number of proposals we got, but there are a lot of differing opinions.

You can imagine cost allocations is a thorny subject and there are a lot of differing opinions.

While I don't want to sound pessimistic, and I do not want to be overly optimistic either because there are a lot of varying opinions and a lot of those you have heard today, it remains to be seen where it shakes out, PJM and the Market Monitor, are working on a combined proposal still that we hope to put forward in the coming meetings here and hopefully that garners some support.

MR. KLEIN: The cost allocation issues are probably the hardest for market participants to decide on and where they need some help.

There has been a lot of good work that has been done by the Market Monitor, by PJM, in terms of performing what we have.

There are some, PJM starting from the principle of charging to balanced schedules when there other markets that do it differently, and potentially do it better, but ultimately getting something that the market participants actually vote on, it may be tough just because the cost allocation issues are so hard.

MR. ALLEN: We made our own proposal in the PJM EMU. It is actually the MISO construct.

In talking about stakeholder process, and PJM, it is important to think how this all started these markets and what its purpose was.

It was to foster competition, to have competition where there wasn't competition previously.

The unfortunate part of the stakeholder process particularly in PJM is that it is a situation when it comes to allocation cost.

A Fortune 500 company can allocate some of their costs to another market participant and simultaneously eliminate their competition.

Imagine the scenario, just as an example, where Microsoft can determine how much of their costs they can assign to Apple, so not only are you lowering your cost, you are making your competition less competitive.

You are killing two birds with one stone, so unfortunately a lot of the large Fortune 500 companies who are part of this footprint are seeing this as an opportunity where costs that they cause are already being passed onto other companies and then the competition in the market is being reduced.

This is a win-win. This is a no-brainer for them.

Unfortunately, the competition is not coming from Apple. It is coming from small financial marketing companies and we are kind of easy to get pushed out of the market.

This is what is happening and could happen depending on the outcome of EMU.

You have already seen the reduction in volume in UTCs and you have seen the impact of $1.2 billion worth of increased market in efficiencies.

As Stephanie said earlier, where it raises the question of what happens with the money, what happens with the activity, where does it go? It goes someplace else and it goes away and the market is less efficient.

Some of the stakeholders do not have a problem with that. I hesitate to tell this story, but I just feel compelled to.

During a not too distant EMU meeting, a stakeholder chimed in, had called in, he was concerned about virtual market activity.

He had a generator and he didn't like the idea that they were selling power at his power point.

My ultimate point is this.

The stakeholder process is not there to come up with the best results for the market. The stakeholder process is about people, Fortune 500 companies largely, who control the voting managing their costs the best they can limiting their competition mostly as they can.

This is not a simple yes or no vote and the number of companies where you can garner support you get a pass, it is sector weighted, and so these Fortune 500 companies can pick and choose which sector they are today.

They have cross sector voting. "Am I a generation company today or am I a load company today? Am I a transmission company?"

They can shape how the outcome is.

The financial market participants, yes, there are a lot of us in number, but for the most part, we are all isolated to the other supplier sector. It is a difficult space to stay in the stakeholder process.

A lot of the companies didn't mind the way things were before competition.

We are now getting back to that monopolistic state through regulation. We are getting back to it through the allocation of fees.

DR. PATTON: This is the sort of issue where there really is not an efficient way to do it, so asking the question, "What is the probability of the stakeholder process?" is going to achieve a consensus is a much different question than, "What is the probability that the stakeholder process is going to achieve a consensus and that consensus will be efficient and reasonable?"

The second probability is substantially lower than the first.

It sounds like from the discussion that the first question might not even have a high probability attached to it, but certainly, probably not the second, on these sorts of issues, most of the participants are going to invoke their pocketbook.

There are two things that FERC can do and you have seen lots of my filings that ask you to do these sorts of things, my success rate is not extremely high, but there are two things FERC can do to help the stakeholder process when a difficult issue like

this is being worked on one.

One is to give a deadline because that motivates stakeholders to actually come to the table and then work things out.

Second is to give some sort of minimum principles, guidelines, something that would govern how you are going to view what gets filed.

Both of those things were sort of there in the MISO process that got MISO to a point of having an allocation that is pretty efficient.

But open-ended processes where there are no deadlines and no principles, our experience in RTOs that we work on it is very difficult to achieve success.

MR. MEAD: I would like to pursue the point that Dr. Hogan made a while ago.

If I understood it correctly, it was to the extent that we have uplift type costs that are not really marginal, the efficient thing to do in terms of allocating those costs is to allocate them to the people whose decisions will not be affected very much.

If you consider sort of the large groups of loads, generators, and financial players, virtual bidders, virtual bidders are probably among the most

elastic entities, so presumably under that principle you would be allocating relatively little uplift to financial players.

As I understand it, it was the PJM study where you sort of compare the dispatch with and without virtual bidders, there is a certain amount of additional uplift that can come about in the aggregate as a result of financial bids.

I would like to put the question out.

If we were to pursue this principle and end up allocating very little uplift cost to financial players, do we get too much financial bidding?

Is that an inefficient result or is it a desirable result? Dr. Hogan?

DR. HOGAN: An important part of the story was to say we are going to pursue all of those other agenda reforming pricing so that we get as much into the marginal prices as we can.

Then I would say to a first approximation, "If you cannot do any more than that, and that is all you can do, now the rest of it is residual," then you want to allocate it in a way that it does not affect decisions because you can affect decisions because you cannot get it into the marginal decisions that people are actually making.

As to whether or not it produces too much forward trading, this is a concept of which I have a hard time getting my head around, that there is too much to the liquidity, of too much financial bidding in here. I am more worried about the other problem which is too little.

MR. MEAD: For example, to the extent we have a bunch of financial INCs in the day ahead market that may result in additional units being committed after the day ahead market is closed, and that is a cost that may not be considered in the dispatch, or in the prices that are being offered by the virtual sellers, the fact that the virtual seller does not have to pay a portion of the uplift associated with these commitment costs mean that virtual sellers are offering at too low a price.

DR. HOGAN: The analysis I would do, it would not be the analysis of uplift. It would be the analysis of total costs, then that's the first part of the story and how much does this change the total cost?

As I said earlier you could have a situation where the total costs went down which would be good and uplift went up and that would be okay.

Uplift is a second-order issue here.

Just as a logical matter, if you are analyzing the total cost and you have done everything you can do, you have done everything you can identify, by definition you cannot do anymore.

Whatever is now left over cannot be done using cost causation analysis.

You should now allocate that in a way that doesn't screw things up.

It is hard for me to think of a case where the allocation would produce too much financial bidding.

A lot of the analysis we do about what we would like to see assumes away transaction costs and assumes away all kinds of things.

A big problem in a lot of these models is analyzing why we get as little as we get.

It is an interesting question. I just never really thought about that end of the spectrum. The other end of the spectrum is more problematic where you do not have enough for all the reasons that many people here have said.

DR. PATTON: This is a complicated question and the important distinction I tried to draw earlier between what Dr. Hogan is saying and what I am saying is that it is the difference between what you should do if the price formation issue was solved versus

what you should do if it is not solved.

It is definitely not easy to solve and I do agree 100% that we really had to put a lot of effort into solving them and it is a big portion of our state of market report recommendations are how to solve these problems.

The average time to solve them is probably seven to ten years.

They are not the kinds of things that can be solved easily.

If you took my $45 to $50 example where real-time prices are $45, they ought to be $50, but because of price formation problems it is depressed and I have been arguing that you really do not want the virtual traders to offer the price down to $45 from $50, so you stop that by allocating the gas turbine commitment cost to the virtual supply that when they see the $50 price would jump in and sell at $50 and buy back at $45.

The cost allocation to them stops them from doing that, so you get the $50 day ahead price which is, by the way, the most important thing in all these markets is the day ahead solution because it facilitates the commitment of resources.

If you look at the cost causation, whether you

look at uplift, the total cost, you get the same answer.

If actions that cause you not to commit, say, intermediate or combined cycle units in the day ahead, and instead commit higher cost gas turbines in real-time, that is going to be a total cost increasing phenomenon.

It's also going to be uplift increasing because those are the units you are paying uplift to and you would get the same answer.

Unambiguously, the best answer is to get the real-time price up to $50 in that example, but until we get there allocating the uplift efficiently is what you need to do right now.

MR. ALLEN: I agree with what Dr. Hogan and Dr. Patton were saying. They have it pretty much, but I do want to comment on something else.

The entire panel this morning was talking about that FTR forfeiture, yes, we all listened to that.

But all of that was predicated on lack of liquidity. If you have illiquid price points where someone is transacting INCs and DECs, and they have an FTR position, if you have a liquid market, a lot the manipulation concerns that you have currently kind of go away because all of a sudden the market

participant who is trying to manipulate is pushing against the rest of the market.

And who has the size in the VAR in order to be able to do that, because if they try to raise the day ahead price that is higher than it should be, you get rest of the market pushing against them.

We are kind of far away from that right now, so the concept of having too much virtuals when we have so little, I mean so little in PJM right now, and if you look at the volume of INCs and DECs, it is not an ISO New England loan.

Sorry!

But it is relatively low.

And particularly with the amount of INCs and DECs that are being done in order to converge the market, most of what you are seeing, and as I had alluded to earlier, a lot of it is being cleared at West Hub which is the utilities and load serving entities, using INCs and DECs as a hedge against a forward position or what have you.

There is not very much being done with INCs and DECs in PJM in order to converge the day ahead in real time and that is due to the allocation.

MS. STASKA: The question revolved around basically could there be too much financial trading?

Obviously, we do not want that because then PJM would not be able to solve their day ahead model which is clearly important.

Currently, PJM has a soft bid cap in place so they can solve their day ahead model.

What we feel would be the more appropriate means to do that would be to set a fee to encourage the ideal level of volume rather than put in a cap and manually restrict that.

Not only would this help to restrict the volume to the correct amount that PJM needs and to bring the correct behavior that PGM needs, it would also create a tangible benefit to the market which financial participants, as I mentioned in my opening statement everybody always says, "There are intangible reasons as to why they benefit the market, but there are tangible benefits to the market and that includes lowering the fees of other market participants.

That is not only uplift because there is an argument to be made that they do cause some small portion of uplift.

This includes Schedule 9 fees, and up-to-congestion transactions are charged Schedule 9 fees right now, as are INCs and DECs, and up to congestion provide.

Adam may have the specific number, but I believe several million dollars in fees to PJM to help lower their costs and in turn lower the costs of the participants that are also paying Schedule 9 fees.

We want to make sure that we are not just dumping all the costs on load being a load server. That is not what we are looking for.

What we are looking for is to bring the maximum amount of fee income in through financial transactions that we can preferably through a fixed fee in order to create a tangible benefit to the market and an operational benefit to the market.

DR. HOGAN: David's comment about how long it takes to get price formation reforms after he recommends them in his excellent reports is really distressing. It is true but it is distressing.

I have gone through so many meetings in various places where I talk about what you really need to do is to fix this and the most important one is scarcity pricing, and the answer I get back is, yes, we really think that is important, but we are busy working on capacity markets and we do not have time to do this right now.

And that has been going on for a decade.

Fundamentally, I bear some of the blame for not

articulating the story well enough, but FERC bears most of the blame, and FERC is not doing its job in setting priorities in setting these principles and enforcing these processes to create efficient markets. It is deferring too much to stakeholder processes and bottom-up and consensus agreement.

It is a big mistake and it is hurting us more and more and is causing more and more problems. We need leadership at FERC to solve this problem.

If you look at what happened in Texas with the operating reserve demand curve where I, obviously, was involved and have a very strong interest in, that whole conversation, admittedly, they had been doing other things before, but that conversation took about 14 months from my starting to say in front of the Commission, "You really have an opportunity to do something really important here to having it implemented and operating in the market place."

Fourteen months.

That was a big deal in terms of the structure, changing the pricing rules, and thinking about all of these things. It was much bigger than some of the things that we are talking about that David has been recommending and doing what David has been recommending is very important.

FERC is a very important organization and has done many good things and continues to do many good things, but on this issue, its priorities have been in the wrong order for a long time and somebody ought to fix it.

Thank you for inviting me.

MR. BOWRING: I am not sure I want to go after that. On the narrower topic, there are price formation issues in PJM, but there has been a lot of progress made in the pricing area including what Adam just alluded to.

There are more issues to be addressed. We sometimes worry about the lag in our recommendations. I do not think it is quite that long.

I agree that price formation is the primary issue, but when we get to them, then the question that you raise is the narrower question you have raised about uplift.

I don't think there is any evidence that it is efficiency enhancing to have more UTCs and impose all of those additional costs, and hopefully, if we do the pricing right, the costs are not that high on load.

Despite what Wesley keeps saying that numbers has no basis, and as far as I can tell, it is the

$1.2 billion number, there is no demonstrated negative effect on the markets in their reduction of UTC volume, so we have to be very clear about that.

There are ways to get at this problem which address the basic principles which are consistent with what Professor Hogan is doing here without going all the way to saying zero to financials and impose it on load because they are less elastic.

To accept the premise that we have to get pricing right, to treat uplift as a second or third order issue, but then solve it in a rational way that spreads it appropriately.

MR. SAUER: Let's now turn to netting and some of the examples that Wes raised and even one that I am positive during the first part of this panel.

Certainly, under the current construct. If market is INC, and a DEC, the two don't offset each other. They independently assess uplift.

In determining whether UTCs should be assessed uplift, and how they should be assessed uplift is a correct answer to apply the current construct in the sense that one half of the UTC is an INC, the other half is a DEC, they should both be assessed uplift independently or does the answer allow some netting there and even go ahead and change of the netting

provisions for INCs and DECs in general.

Some of the answers or some of the examples that I am thinking about, certainly Wesley raised an example, it was 40% of INCs and 50% of the DECs are PJM, I forget the exact numbers, but it is something like that, yes, so trying to figure out right way to do it.

DR. PATTON: Netting is essential in two regards. The fist is to really figure out how much of the total uplift bucket is conceivably deviation related.

Obviously, we talked about first subdividing between capacity and congestion and local reliability which we haven't talked much about local reliability, but in most of these markets local reliability ends up being a huge contributor of RTOs have areas with capacity, second contingency requirements, they incur huge costs and those definitely should not be allocated in the management that we have been talking about, they should be directly allocated to the local areas.

Whether you are talking about congestion or capacity, the first way in which netting is important is to take everybody's deviations and see what the net impact of the deviations are, and if the net

deviations are X, and RTO committed five times X, then only 20% of the costs really can be argued to have some relationship to the deviations.

But then the second context in which netting is important is the participant level. Once you have the dollars that you are allocating to the harming deviations to the extent that participants have transactions that net against other positions that they have, let's say, on the capacity side they should only be allocated costs associated with their net deviation, and both of those steps, the market wide netting and the participant netting, when you get down to the actual allocation both of those are based on the cost causation principle which when you articulate it will be easier for participants to accept.

MR. KLEIN: I would like to make two points. There has been some really good work in some of the proposals in the second-best area of how do we allocate this market monitoring unit proposing, say, to exclude our financial transactions or convergence bids from the physical deviations of things that are commitments that are happening after the day ahead market.

The one part of that that is problematic is the

notion that you would treat the UTCs as both an INC and a DEC and that was basically charge them twice as much as an INC or a DEC.

What David is saying is don't charge them anything and Wes said minus one plus one is zero, but it would make more sense to even charge them half than to charge them two.

The second point is that there have been filings in this proceeding about the impact of UTC, and causing other uplift, and one of the uplifts that does exist, UTCs have a potential to impact is negative congestion imbalances.

It does not make any sense to say we are going to charge them for operating reserve uplift because they are impacting this other billing factors that is over there.

Charge them for the negative congestion imbalances and charge other market participants for that to the extent that those market participants are causing them.

ERCOT actually has a mechanism when it has Chip Transmission D rates that result in congestion imbalances, it charges them to the market participants who are actually bidding on those pasts, so maybe they make a little bit less money from their

UTC bids. They are called point-to-point in ERCOT and presumably the load inside the close interface.

There is no reason in principle that you cannot charge UTCs, just as Joe said earlier, ConEd Wheel, Blackstarter, things like that where you know what's causing it, charge at that, but it does not make sense to say, "You know because these UTCs have this cost over here, let us impose a fee on them because," well, to me, that doesn't make sense.

MR. ALLEN: Netting, definitely, yes, absolutely. This is basic math from my perspective, the negative one plus one equals zero, it does not equal two energy deviations.

In the UTC product by definition is netted automatically. It is not even transacting energy.

It is important to look outside of the PJM footprint and look at how other markets handle it.

Most of the markets that have done recent analysis have gone to netting.

MISO, obviously, that is work on nets, CAISO nets and they charge different rates.

MISO is a little bit more specific.

If UTC existed in California currently it would not be charged any uplift.

In ERCOT, the UTC or something analogous does

exist and is charged a penny and a half day ahead make whole payment.

MISO with the current construct, if David ever gets it through in another ten years, really, just kidding.

If it ever gets through, it would be charged the CMC rate which is for average on our transactions is about 2 cents.

It is a really small rate to the UTC transaction if you follow netting principles and sometimes it is even zero.

Netting is essential. Without netting then you are charging deviations where there no deviations and it is nonsensical.

I looked it up and it is 52% of all INCs and 41% of all DECs, in the PJM footprint are clearing up one location, one singular location.

If you expand that out a little bit further, if you look at PJM West Hub, which is where all the futures contracts and ICE, not all, but a lot of them are traded on.

PJM West, if you expanded that out, you are looking at 80, or if you look at zones, you find the majority of the INCs and the DECs in the PJM market are simply clearing against another market

participant's transaction and they are being assigned and levied this heavy fee that they don't actually cause.

When we think about capacity deviations, I do not know how you can say you follow cost causation principles that you don't net.

They are energy deviations.

It is common sense stuff that we need to be moving towards and it solves this bid problem. Why are INCs and DECs treated differently than UTCs? It is because INCs and DECs are netted in PJM than what they are in other markets.

MR. KEECH: With regard to netting, we just need to be careful on what level of granularity you net.

We cannot net something in Illinois with New Jersey and act like that is the one-to-one offset because it's just not.

You ignore the transmission flows, and even though from a power balanced perspective it might look like he doesn't impact anything, there are transmission system flows and transmission system losses that cause the commitment of more generation when that happens.

We cannot lose that that impact of those transmission flows, and while they impact on unit

commitment and system losses is not huge for one transaction.

For a lot of them it is a big number. We have to make sure that we don't lose sight of that.

Wes gave a good example of INCs and DECs at Western Hub and 51% and 42%, whatever it is, I can certainly understand the desire to net in that case because the system impact for an INC and a DEC at the same location it is a net wash.

I get that and I do not know that I sit here and say I disagree with that, but if it is the Western Hub to New Jersey Hub, that is completely a different story because there is that underlying transmission impact system losses and things like that.

MR. HOLLADAY: Most of the arguments here have been from a fairness perspective, but also the argument that the risk of not netting and being charged two deviations can kill volume in this product and it looks like that that has affected market performance.

My argument would be more cold hearted. I want the market to perform well and it looks like the fear of this fee not being netted has caused the market to stop performing well.

Whether it is netting or some other structure,

anything that has this big impact on volume, could hurt market performance.

MR. BOWRING: The assumption that the high volumes that resulted from zero fees or some other right number is not a correct premise, and it is a premise that is being assumed fairly widely here, so I just want to point out that it is not consistent with our view at least.

Let me now respond to Abram.

To the extent that a UTC is not a wash, which they are really not when they are going across a constraint, which is typically why they are being placed, it is not a wash.

It does affect commitment and therefore it looks like an INC and a DEC and it should be treated like an INC and a DEC.

DR. PATTON: In response to Adam and maybe to Joe also. When people say you cannot net that over there with this over here, because it creates flows in the system, you need to recognize that the implicit argument there is that you are not first subdividing the uplift between congestion related and capacity related.

And that is essential to do that first because once you have done that, then there is no problem

saying the UTC causes no power balance impact, or that an INC and a DEC that are on opposite sides of the system, have no effect on power balance.

They do affect congestion, but there should be a separate process to allocate that uplift if you intend to do it efficiently.

MR. KLEIN: There probably is a second or third best solution where UTCs are picking up some share, some small fee, as some of the other market participants as Stephanie has mentioned.

The notion that comparing an INC to UTC, I would have to believe that UTC is not double in INC or double a DEC.

It is something less would be the appropriate billing determinate in that and that is one of the key parts of the whole discussion that came up around the allocation could be the same or less but not double.

MR. SAUER: One element that has been mentioned a couple times a internal transactions, IBTs.

From my casual observance of the EMU process, from my recollection, is that a lot of the discussion has been centered around getting rid of that.

Let me rephrase.

A lot of the discussion has been in agreement on

getting rid of that provision or that netting capability.

Please let me know if that is not correct and whether it makes sense to keep in place or get rid of in fact.

MS. STASKA: The IBT issue is more broad than just should IBTs be allowed to net, because as a load serving entity of 515 MW load, and I buy a contract the day ahead settles from another counterparty, they put in an IBT, it should net because instead of paying it on the day ahead load, then I am paying it on the IBT.

I should not be paying it on both the day ahead load and the IBT because I purchased the power from another counterparty outside the market.

As for all of IBTs not being allowed to net, I don't think that is generally what people are looking for, and in this instance, I just want to ensure that the use of IBT is to serve load. It is protected.

MR. SAUER: You are right. From the current concept, my recollection is some IBTs can be assessed uplift, so part of the discussion is getting rid of that uplift and also the ability to net with virtuals.

MR. ALLEN: Ultimately, we should be looking to

get rid of IBTs, but IBTs are used for netting.

Netting is automatically within the system within the footprint. If issued on the market why basis, it should occur on a participant basis and have an IBT that is entered in days after the fact in order to enact that netting behavior, or to have a transaction be netted after the fact, it should be done automatically and it should be available to all market participants and not just a subset.

MR. KLEIN: It is interesting. When PJM introduced e-Schedules, as they were starting up the market, really most of the forward market liquidity that happened in the market, this was probably in 2000, in that timeframe there was very little transacted at the day ahead market price.

All of the forward market transaction settled at real-time and market participants had a desire for PJM to do this and create these IBTs that would net off.

Over time the markets have really evolved in such a way that now there is a very liquid day ahead forward product and a real-time forward product and people can move their hedges between the day ahead and the real-time, so that really they don't have the need to use it as an offset for deviations or how

much they get charged.

We have seen cases where market participants do use it as part of that vicious cycle of lowering, balancing my schedules, using something that has no impact whatsoever on commitment or dispatch.

It is simply a financial e-Schedule.

PJM wants to eliminate that from the calculation of uplift allocation and the market monitor wants to eliminate it form the allocation of uplift.

Most of the market also would like to see that eliminated. It has been very very inefficient. Thanks.

MR. SAUER: Any others on that? What we are also trying to find out is, getting back to the harming and helping our discussions, there are certainly some and this is where UTCs and INCs and DECs can improve uplift.

Are there ever instances and, it sounds like there could be, based on the principles of applying an uplift allocation.

There are other instances where anyone could see that uplift should be indeed allocated to a UTC or INC and DEC that actually does improve uplift essentially.

MR. KEECH: The way we calculate who is due an

uplift payment in PJM is on a "making whole" to your costs when sort of the LNPs that you were running at did not justify what your offer was and that never happens with an INC incurred a career UTC, so as far as a make whole credit is concerned, which is really what gives rise to uplift payments in PJM, there would be no scenario where an INC or a DEC cleared with an LNP higher or lower than their cost depending on the bid type.

It seems that it does not apply in this case, but my understanding is they get credits elsewhere.

DR. PATTON: I will answer your question. I cannot think of a scenario where you should be charged an allocation, if you are helping deviation.

The one distinction in MISO is helping deviations that occur very late in the game.

Right now MISO allocates cost to them and we obviously argue that that is wrong.

They should not get the benefit of netting because they may or may not have netted out the harming deviation, and the decisions that MISO had to make leading up to real-time, they shouldn't be charged anything either.

MR. ALLEN: No, you should not be allocating any sort of uplift to help deviations and deviations that

are helping lower uplift.

If you are lowering costs, then that is the activity you want to incentivize, and if you allocate to those types of transactions that help minimize uplift, and help converge the day ahead and real-time is sending out bad price signals, it is incentivizing behavior that is an overall good for the market.

As far as the problem with the way things are entirely done for INCs and DECs, particularly in PJM, it is that the allocation is so high that the market is not getting the benefit of the deficiencies, so those products could bring if the allocation was not such as it is.

MS. STASKA: This question is hard for me to answer because I don't know how a market participant would know when they entered the transaction whether or not they are helping or harming uplift.

If you don't know when you enter into the transaction, then I don't know how you can put that into your bid assumption, and I do not know how that self corrects any behavior if you don't know in advance if you are helping or harming.

Theoretically, it is a great idea to not charge uplift to transactions that are helping to obviously decrease uplift, but I don't know how you would be

incentivizing any of the right behavior by doing that.

I just don't know how it would be implemented in a way that would help.

MR. KLEIN: When MISO implemented its system, that you knew to do is do not INC inside a load pocket because then you are going to be subject to the charges that David is talking about.

That is how we, at least as a market participant, would respond to that kind of thing because you just knew that if you were, again, not INC'ing inside New York City or some other load pocket, you were probably going to be charged very little.

MR. SAUER: Any questions from around the table? I do not want to take up everybody's time anymore with more questions that I could throw out and then be poorly thought through.

Thank you all very much for participating today. We appreciate it.

For the next steps, certainly, staff will be issuing a request for comment sometime in the near future, so keep an eye out for that or for anything else.

Thank you for being with us. It is a tough time

around the holidays, so thank you for bearing the cold weather and traveling over the ice and snow.