FEDERAL ENERGY REGULATORY COMMISSION

TECHNICAL CONFERENCE

DEVELOPMENTS IN NATURAL GAS

INDEX LIQUIDITY AND TRANSPARENCY

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FEDERAL ENERGY REGULATORY COMMISSION

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COLETTE HONORABLE - COMMISSIONER
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DEXTER STEIS
J.C. KNEALE
MARK CALLAHAN
TOM HAYWOOD
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ORLANDO ALVAREZ

APPEARNACES AFTERNOON SESSION:
ADAM BEDNARCZYK - MODERATOR
JANEL BURDICK
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THIRD PANEL
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MARK CALLAHAN
JOE BOWRING
COREY GRINDAL

PROCEEDINGS

MS. BURDICK: Good morning everyone. If people will take their seats we will get started shortly.

Good morning. I'm Janel Burdick, the Director of the Division of Energy Market Oversight and the Office of Enforcement. I would like to welcome you all to the Developments in Natural Gas Index Liquidity and Transparency Technical Conference.

We very much appreciate the interest that has been shown in this topic and we are really looking forward to having a discussion with the panelists and we thank you all for attending.

We also thank the audience for participating today. They have also demonstrated a lot of interest in the topic. Our goal today is to solicit feedback and begin to develop a record on the topic of natural gas index liquidity.

I'll just cover some housekeeping items first. Please refrain from eating or drinking during the Conference. There should be no food or drink other than bottled water in the Commission meeting room.

There are bathrooms and water fountains behind the elevator banks on each end of the building. Please turn off your mobile phone or put them in airplane mode while in the Commission meeting room to avoid interference with the audio visual and the sound equipment.

If necessary, although we may not need it, we have arranged for a spillover room and a place to put your bags. It's a trial room to the right. We also have a staff presentation today and three panels lined up. We will break for lunch at noon and reconvene at 1:00 for the two final panels.

There will be a 15 minute break between the afternoon panels. For panelists, if you would like to speak if you could just turn your name card up. Make sure you turn on your microphone and turn off your microphone when you finish speaking so we don't get interference between the microphones.

If you don't do that you might get a signal from behind the black glass over there to tell you to do what you are supposed to do. The Technical Conference today is being transcribed so please say your name when you start to speak.

When you are not speaking please turn off your mic -- oh sorry, yes, when you are not talking turn your mic off. Panel discussions will not include opening remarks but will consist of a discussion based on the questions posed by Commission staff in the notice.

And finally, depending on the direction in which the conversation progresses we will not necessarily cover every single question in the Notice, however, we have members from staff who will try to keep us on track and we will also be inviting post-Technical Conference comments if there are topics that you wish to provide additional comments on.

And now I will turn it over to Acting Chairman LaFleur for opening comments.

ACTING CHAIR LAFLEUR: Thank you very much Janel and thank you to all of you for being here. It's good to see such a great turnout and I appreciate all of the panelists both in this morning's panel and the rest of the day for being here with us.

It's nice to be here with Commissioner Honorable after all the gooey words last year -- last week about how it was our last Tech Conference together we forgot today. So maybe we can pull together a Tech Conference tomorrow so we can get you one more time.

COMMISSIONER HONORABLE: Yeah.

ACTIVE CHAIR LAFLEUR: So as Janel said today's Technical Conference is going to help us to develop a record on the role of natural gas price indices in FERC jurisdictional markets.

We know a lot of agencies have things to do with price indices, certainly the CFTC and other agencies as well as FERC but our focus is on the impact they have on the markets and on our setting just and reasonable prices.

And what we will be looking at is how they are working in the markets and whether there are any changes we should consider. I wanted to set the stage a little because I think there has been a little bit of concern about do we have some plan of what we are going to do, and we really have an open mind on this, but I think it's something that's entirely appropriate for us to be looking at because the markets w regulate are so dependent on robust and proper natural gas indices in order to set just and reasonable prices.

80% -- approximately 80% of tariffs that are set under the Natural Gas Act refer to these indices so the depth and robustness of those indices is very important to those tariffs being fair. And they are also -- with all of the interdependency of gas and electricity, they are increasingly used to set electric prices, including in mitigation rules and the calculation of the cost of new entry in setting fuel costs for other reasons in the electric markets.

So it is very important that if we are going to so heavily rely on these indices that they be robust and working well. I look forward to a good discussion today. It seems like we were able to attract some of the big experts on this. I literally just walked in from Mexico City.

All my bags -- I didn't put them in the bag room, they are in the green room right behind me. So I am not going to stay for the day but I will be very interested in the results. We have all the smart people in front of us and all the smart people behind us and the record.

Not only what we will hear today, but I really do invite comments from anyone who has an interest in this topic who wasn't invited to participate, we are very interested in what you have to say because we know this topic touches a lot of people so thank you very much.

MS. BURDICK: Thank you Acting Chairman LaFleur, Commissioner Honorable?

COMMISSIONER HONORABLE: Janel, good morning everyone. It's great to see such a wonderful room. Thank you for your interest in this issue. I want to thank Janel and our entire FERC team for your work in pulling this together, good morning Melissa.

We have been working on this issue I would say over the course of my tenure here. And in part it is because of the men here and men and women, either in the audience section or watching on the webcast. Thank you for all that you have done to educate us not only about how the indices are working, the history of them but also how we can improve this process to provide greater transparency and certainty.

So yes this is my last FERC Technical Conference I believe unless there's another one that appears tomorrow.

ACTING CHAIR LAFLEUR: As a Commissioner, not your last at all.

COMMISSIONER HONORABLE: Thank you for that. I will be banished I think for a couple of years and then I will resurface here. So really I am pleased that as I am literally headed out the door that I could also join Chairman LaFleur.

I agree with Cheryl's comments in total because this is an important issue and it is important that no matter when we take it up that we do it and that we educate ourselves and the sector about the state of play, where we are now and more importantly, where we need to be headed.

So I do want to express appreciation to the FERC staff, our team, Eamonn Mahoney has been taking the lead in my office and we were talking about the fact just yesterday that literally since I began here some of my first meetings were with you all and you have raised some of these issues for our consideration and edification and I greatly appreciate it.

We are here today to discuss liquidity in the physical natural gas markets and we are developing a record to determine where we are and how we got to this place. And

I know that the men before us will help shed some light on that and what our next steps should be.

I agree that there is greater reliance on indices today than in the past and it is important that these indices work as intended to provide as I mentioned transparency and certainty and a robustness that is needed to ensure that markets are operating as intended.

And although I won't be here to see the results of the Conference as Cheryl mentioned, we are creating a record so whether you are participating in the Tech Conference today or you would like to submit comments, please do.

And I want to thank each of you for the ways in which you continue to educate policy makers and regulators about this important work. I want to single out Orlando Alvarez for your Doggett determination in making sure that this got our attention and no good deed goes unpunished, that's why you are sitting at the table today.

On that closing note I want to thank each of you for the work that you do each and every day. It's been a pleasure and we won't be mushy here today because we have done that already. And I too will have to go about -- so Cheryl's coming back with bags.

I'm going to start packing boxes which is a sad, but certain task that we all must take up in transition but

I want to thank you and I look forward to reviewing the transcript of this Technical Conference, thank you.

ACTING CHAIR LAFLEUR: But in case I'm not here I also want to thank staff for all the work in pulling this together. I know we talked a lot about when we should do it, I seriously thought to be honest that by now we would have a whole panel of Commissioners here but I am very glad we are doing it today nonetheless and thank you very much.

MS. BURDICK: Thank you Commissioners. To begin our day I would like to have the staff at the table introduce themselves so I am going to start with Jamie Marcos.

MS. MARCOS: Good morning I'm Jamie Marcos, I'm the Deputy Director of the Division of Analytics and Surveillance.

MR. ELLSWORTH: Good morning I'm Chris Ellsworth. I'm in the Division of Energy Market Oversight in the Office of Enforcement.

MR. MARANVILLE: Good morning David Maranville with the Office of the General Counsel, Energy Markets.

MS. ZERBY: Good morning I'm Elizabeth Zerby with the Office of Energy Markets and Regulation.

MS. WOZNIAK: Hi I'm Caroline Wozniak, also at the Office of Energy Market Regulation.

MR. COLLINS: Sean Collins, I'm Director of the

Division of Analytics and Surveillance in the Office of Enforcement.

MR. BEDNARCZYK: Adam Bednarczyk, Division of Energy Market Oversight, Office of Enforcement.

MR. PINKSTON: Tom Pinkston, Branch Chief for our Natural Gas Surveillance Office of Enforcement.

MS. LOZANO: Melissa Lozano with the Division of Energy Market Oversight, Deputy Division.

MR. DOYLE: Matt Doyle I'm with the Division of Energy Market Oversight and the Office of Enforcement.

MR. PRIMOSCH: Eric Primosch, Division of Energy Market Oversight and the Office of Enforcement.

MS. BURDICK: So Eric and Matt agreed to be starting off by giving us a presentation on some analysis they have done on the FERC Form 552 data as well as some analysis on indices that appear in Commission jurisdictional tariffs.

Before they get started I would also like to recognize the people who aren't at the table who helped prepare for this Tech Conference. I would also like to thank Adam Bennett, Al Padrone, Katherine Liowe, Omar Pasemi, Asurred Rapp, Mike Deliso, and Sara McKinley. Thank you all for your help in getting ready for this Tech Conference.

And now I will hand it off to Eric.

MR. PRIMOSCH: Today's presentation will cover three topics. First we will provide an overview of the FERC Form Number 552 submissions for calendar year 2016 and recent trends.

Second, we will present our analysis of natural gas and mixed liquidity as it relates to the Commission's standards for natural gas and mixed liquidity set out on the 2004 Price Index Order.

Finally, we will discuss our analysis of physical natural gas indices referenced in Commission-approved tariffs.

On May 1 of each year the Commission collects aggregate transactional information from natural gas market participants using FERC Form Number 552. The data that market participants submit using this form provides information on the overall size of the traded fiscal natural gas market.

The volume of fiscal natural gas bought or sold at a fixed price on a physical basis and the volumes traded at and sold off us, a published natural gas index. The annual filing of this information provides transparency regarding physical natural gas transactions that settle off of an index and transactions that contribute to or may contribute to natural gas indices.

In 2016 market participants reported annual volumes for 5 types of transactions;

1 -- Transactions that sold off of natural published gas indices both in the next day and next month markets;

2 -- Transactions for fixed price next day delivery completed prior to the day's timely nomination deadline;

3 -- Transactions for fixed price next month delivery completed during bid week for transactions that settle off of NYMEX's plus and/or trigger agreements completed during bid week; and

4 -- Physical basis transactions that settle off of the closing price of the NYMEX Henry Hub natural gas futures contract price plus or minus the negotiated adder during the first three days of the week.

All market participants that file Form Number 552 also indicate where they voluntarily report their transactions next to dollars. Out of the 1,234 market participants who submitted Form 552 for themselves and their affiliates, only 134 market participants indicated that they reported their transactions to index developers.

In 2016 aggregate natural gas sales and purchases totaled 126 TCF -- the volume of transactions that settled off with next day and next month indices totaled 97.8 TCF and represented 78% of total sales and purchases.

In contrast fixed price next day, fixed price next month and fiscal basis volumes that helped contribute to the calculation of those indices totaled 25.7 TCF and represented 21% of total sales plus purchases.

The remaining 1% was sold off of a NYMEX plus Orchard Agreement. Specifically, the 2016 data shows that transactions that settled off of a next day index represented 33% of total sales plus purchases.

And the volumes that may have contributed to the formation of those next day indices represented 12% of total sales plus purchases. Volumes that settled off with the next month index represent 45% of total sales plus purchases, almost half of the physical natural gas market.

However, the volumes of fixed price, next month and physical basis transactions that may have contributed to the formation of those next month indices represented only 9% of the total sales of those purchases.

Fixed price next day volumes totaled 15.3 TCF in 2016, an 18% decline from 2009, the first years of complete data. We estimate approximately 10.1 TCF of those fixed price volumes were reported to index developers and thus contributed to next day and next formation in 2016.

Volumes of transactions that started off with next day indices totaled 41.8 TCF, a 50% increase from 2009. Thus, for every MMBTU bought or sold in the next day market at a fixed price, reported to an index developer -- there were approximately MMBTU's that settled off of those fixed price transactions.

This was an increase from 2009 with a ratio of volumes that settled off of next day index relative to the estimated fixed price, next day volumes reported to index developers was approximately 2 to 1.

Fixed price next month and physical basis volumes totaled 10   TCF in 2016, a 33% decline from 2009. We estimate approximately 7.3 TCF of those fixed price next month in physical basis volumes were reported to index developers and thus contributed to next month and next formation.

Volumes of transactions that settled off in next month indices totaled 56 TCF, a slight decrease from 2009. Thus, for every MMBTU bought or sold in the next month market at a fixed price or a physical basis, reported to index developers. There are approximately 7.5 MMBTU's that settled off of those transactions.

This is an increase from 2009 where the ratio of volumes that settled off of the next month index relative to estimated fixed price next month and physical basis volumes reported to index developers was approximately 4.91.

MR. DOYLE: The Commission requires that one of the three following liquidity thresholds must be met on average over a 90 day period for a next day index or 180 day period for a next month index in order to be used in a FERC jurisdictional tariff.

1 -- The daily weekly or monthly volume traded must average at least 25,000 MMBTUs per day.

2 -- The number of transactions must average at least 5 transactions per day for a next day index. At least 8 transactions per week for a weekly index or at least 10 transactions per month for a next month index; or

3 -- The number of counterparties must average at least 5 companies per day for a next day index, at least 8 companies per week for a weekly index, at least 10 companies per month for a monthly index.

We examined the liquidity of indices published by the two primary index developers who are referenced in FERC tariffs -- NGI and Platts, based on two criteria -- the volume of trades and the number of transactions.

Only if an index fails both criteria on a rolling 90 day average for a daily or weekly index or 180 day average for a monthly index, does the analysis consider the index liquid.

Although the 2004 Price Index Order lays out three criteria thresholds for index liquidity, the Price Index Order did not require index developers to publish the number of counterparties due to the sensitive nature of confidentiality agreements between reporting companies.

As a result neither Platts nor NGI publishes the number of counterparties. This table -- the table on this slide summarizes the overall liquidity status of the indices by publication. Overall, we found that 13 of the 125 Platts and NGI indices referenced in Interstate Natural Gas Pipeline tariffs or NGA tariffs were found to be illiquid at some point from April 2016 through May of 2017.

As of the last publication used for this analysis, 8 of these referenced indices were still found to be illiquid. We reviewed both NGA and RTO/ISO tariffs in order to gain insight into how these tariffs reference physical natural gas indices.

As of May, 2017 a total of 75 difference price point locations are used throughout the RTO/ISO and NGA tariffs. There are 169 NGA tariffs and roughly 80% of these tariffs reference at least one natural gas index.

These tariffs use either a single natural gas index or a combination of several indices to price out various rates, reimbursements and penalties. The most commonly used index developer in NGA tariffs is Platts which publishes off a daily publication, Gas Daily and a bi-weekly publication, Insight for a Gas Market Report.

RTO/ISO tariffs use natural gas indices a little differently than NGA tariffs. Generally, RTO/ISO tariffs reference these indices to calculate fuel costs for natural gas generators. These fuel costs are in turn used to estimate start-up cost, minimum load costs, cost of new entry and other reference levels.

Additionally, some RTO/ISO's use natural gas indices for net benefits tests for demand response resources and also in constructing demand curves. In general, RTO/ISO tariffs are less specific about which natural gas index is used for the various applications stated above.

For example, market participants in both PJM and MISO can choose an index for their reference cost calculation but their choice is subject to review by the internal market monitor.

In conclusion, the 2016 FERC Form 552 data shows that market participants continue to rely on natural gas indices as a primary way to price physical natural gas transactions. In 2016 the volume of fixed price transactions was as much as 7 times smaller than the indices they created.

The relative low number of fixed price volumes reported to index developers may impact the overall liquidity of natural gas indices. This concludes our presentation. We are hopeful that this presentation has provided a clear description of natural gas index liquidity trends and our concerns based on those trends.

We are looking forward to a thought provoking discussion that could potentially help shape industry Commission action. Thank you.

MS. BURDICK: Thank you Eric and Matt. Now we will move on to our first panel which examines our robustness and our liquidity of the natural gas market indices, the degree of industry reliance on index-based contracts rather than fixed price contracts and the decline in fixed price reporting to index developers and whether natural gas indices reflect market conditions.

I'll start by asking our panelists to introduce themselves starting with Dr. Kaminski.

MR. KAMINSKI: My name is Vince Kaminski. I teach classes on energy markets and energy risk management at Rice University Business School.

MR. STEIS: Good morning I'm Dexter Steis. I'm the Executive Publisher of Natural Gas Intelligence.

MR. KNEALE: Good morning J.C. Neale with ICE. I am the Vice President of the North American Natural Gas Energy Markets, gas and power specifically.

MR. CALLAHAN: Good morning Mark Callahan with Platts. I'm the Editorial Director with responsibility over natural gas price assessments.

MR. HAYWOOD: I'm Tom Haywood. I work with Energy Intelligence at Houston Bureau Chief.

MR. CRAIK: Good morning I'm Euan Craik. I'm the CEO for the Americas Region for Argus Media which is an international price reporting agency.

MR. ALVAREZ: Good morning, Orlando Alverez. I'm President and CEO of BP Energy Company responsible for BP's North American Gas Marketing and Trading.

MS. MARCOS: Thank you all. I would remind you to lift up your name tag when you would like to speak and keep turning your microphones on and off so as to avoid reprimand from whomever is behind the black glass over there.

So with that I will turn the discussion over to Sean Collins who will begin asking questions.

MR. COLLINS: Thank you Janel. Thank you all for being here. I want to start off the questioning talking about trading a little bit and ask you to describe current trends in natural fixed price and physical basis trading that you believe are either positively or negatively influencing price formation in the markets, including discussing any observable shifts in liquidity, other differences in market fundamentals, procedures or policies which you see are disproportionately impacting either overall or regional liquidity.

And I am able to start by working down the line, Mr. Alvarez if you want to begin?

MR. ALVAREZ: Okay, here we go got it. Okay so first off, thank you for putting this together. I think as Commissioner Honorable mentioned BP was -- a couple of years ago we came to the Commission because we saw a trend.

And a trend meaning we were seeing what I would call liquidity both in the physical and financial markets and there is a difference, a big difference there -- and then also as the physical liquidity was going down not only was the liquidity an issue but the price reporting in the number of fixed prices that were being reported into the indices were drastically being -- we saw the trend coming off.

And so for us it was -- it introduces a number of things to concern us right, as one of the major price reporters to Platts, to the indices. So what we have seen to answer your question directly -- what we have seen is that over the last few years less volume being done at certain locations.

On the financial side we are seeing the market in a very difference place. And by that I mean we have a lot of infrastructure that has occurred over the last few years, infrastructure buildout. Obviously where you have infrastructure buildout you see volume depth there is better, it's improving.

It's the areas where maybe you don't have the infrastructure i.e. SOCAL, PGNE -- you do see volumes going up in Chicago and in the Houston Ship Channel because you have infrastructure being buildout. People are trying to hedge volumes and so you see that activity flowing there.

It's in some areas where I think we really need to focus on. And again, I want to make sure that I'm clear. I'm not saying there's something wrong here with how the index is calculated or there is a big problem here, it's about a trend.

And I think we are hitting it -- we are very glad we are doing this to address it. Does that answer your question directly?

MR. CRAIK: I think so yes. So I think we have seen a decline, somewhat, in the number of fixed -- and proportionate fixed price trades. But as a publisher that operates in a lot of different markets, if 15% of the overall market which is the number we came up with for volume weights, dailies and bid weeks is not an inconsiderable proportion of an overall traded volume to be basing indexes off.

Now the reported volumes are a subset of that but still I think it is important to understand in this market, in this meeting that in the context of other energy markets around the world you have an abundance of base -- an abundance of trading volume here.

It may be less than 10 years ago when prices were higher, there was more volatility, the banks were big players in the natural gas markets but there is still plenty of data to produce robust, reliable indexes.

Personally I think Argus doesn't see a problem here. The market has just shifted. We are seeing less volatility, price have come down, shale producers tend to sell at index while the fixed price traders have left the market which again tends to argue for less fixed price trading.

But I think fundamentally you have still got a very, very healthy market. I think where the Commission potentially could help, maybe this is a question that is going to come up later on is the one factor that is constantly cited to Argus as to why companies do not report their trades to Argus -- I think your presentation was great and it showed that companies reporting are a subset of the overall population of 552 respondents.

Where the Commission could help and what is cited as a primary reason why people don't report is the Safe Harbor provision isn't quite safe enough that a fact finger error can result in an investigation and there may be ways that we could examine to make that a more robust provision that would give market systems greater confidence in reporting to index developers.

MR. HAYWOOD: Well Argus just stole my thunder. You know, thank you for your remarks. And I agree with him. But I don't think the system, this is Tom Haywood with Energy Intelligence -- I don't think the system is broken.

I think the system has been weakened by factors that have gone on, you know, some natural shifts in the market, some like the backs he mentioned. But it is still strong enough and it is still robust enough to produce good price indices -- saying that, we could have produced better price indices if we had more depth of reporting and one way that we could do that is for FERC to really look at the Safe Harbor provision.

If you read the Safe Harbor provision and it was written in 2003 in a very stressful period, back before reporting was done as it is today where you have the offices clearing, you know, the back offices clearing the trades and then delivering them to publishers via emails.

It is kind of referencing a period where you would have -- I used to do it, individual traders being called by publishers and you would get their prices and you know, you might have three calls or four calls, you know in the morning and it references the burdensome nature of reporting to more than one publisher.

It keeps repeating this. You know, you don't have to report to more than one publisher. You know, we understand it is a burden to report to more than one publisher and you know, it sets up a situation where a company interprets that and we have come across this where companies say we don't report to more than one publisher, that's what the rule says.

I think you really need to look at that Safe Harbor. I think the Safe Harbor provision should strongly encourage reporting to all publishers who have as it says formatively adopted the standards and policy statement 33.

You know, we took our surveys and we now publish the volumes and under trades and all the other liquidity factors that go behind each index as FERC has asked us to do.

We accept prices according to what FERC says you should tell the publishers. I think it's great. I think it's a wonderful system but FERC needs to be very clear that it wants publisher -- I mean it wants the traders, trading companies, to report to all publishers, not just one you know, publisher but all the publishers that meet its standards.

You know, so I think that's very important and I would encourage you to really look at your Safe Harbor and we will have more comments on that after the Conference.

But that's basically our take. The system isn't broken but it could be made more robust and FERC can do something to do that by encouraging at least the largest of the trading houses to report to everyone, thank you.

MR. CALLAHAN: This is Mark Callahan at Platts. I do echo some of the comments that were made by Argus and Energy Intelligence. I do want to point out just a slightly different take on the FERC 552 data itself.

And Eric and Matthew talked about the longer term trend that we have seen in terms of some lower volumes and also the increase in index trading over the previous few years since about 2011.

What's important to note is that we are seeing a decline in that downtrend. So for example daily fixed price trading in 2016 did increase 4 to 5%. The monthly trading was flat to down 1% or so, depending on which data you are looking at.

So we are seeing an improvement in volumes from that perspective and the previous panelists have touched on some of the reasons for that. So I think it is important to note that we are seeing an improvement there.

You know, in terms of things that have changed from a liquidity standpoint, I mean Platts maintains that transaction data is sufficient to produce indices that are reflective of market conditions, okay. So like I said volumes are not what they were years ago but they are still sufficient and transparency is there to produce those indices.

At the same time the increase in index trading I think speaks to the confidence that folks in the market have to price off of the indices themselves.

So I am less concerned about with the index ratio that you talked about which said the number of indexed to fixed price trading has increased from about 2 to 1 to 4 to 1 over the previous several years. I'm more concerned with the number of fixed price trades that you see in the indices themselves and I do think that that is sufficient.

And we will talk later today about the agreement that Platts and ICE signed which will only help to improve that as we help to incorporate some exchanged data into the indices.

And finally, just to conclude there are ways I think that we can change the policy statement to incentivize people to price report and I have got some ideas for that that we can talk about in a little bit, thank you.

MR. KNEALE: Good morning J.C. Neale with ICE again. Poor Vince is going to run out of new points to talk about I think people are hitting some very key notes here. I think that this is a complex issue obviously and I don't believe there is any one magic bullet that is going to fix any perceived problems.

I would echo some of the things that each of the panelists have just said. One -- I think that in general the market is getting healthier and as it continues to get healthier we are going to see an increased number of trades and an increased number of counter parties.

Over the last 6 or 7 years there are a variety of things that could have contributed to a decline in trading or a decline in total counterparties. Some of those were regulatory, some of those were fundamental -- I am not going to be the person that is going to identify each and every one of those.

What I will say is that the trend was definitely down for several years but in recent years we have begun to see it pick back up. Importantly though while the number of counterparties hasn't necessarily fallen, one of the interesting things you might have some of the commercials talk about is how they have shrunk the number of actual humans available to trade on their desk -- because we certainly have seen the total number of unique individuals drop even as the counterparties stay.

And just as all of us who do work understand, the more people that you have with their own budgets, et cetera, the more they are going to tend to produce. And so for a variety of reasons we have seen those numbers of actual persons declining and that could be one of the reasons that we saw a slippage.

Again, as things have firmed back up and although a lot of people would argue $3.00 gas is not necessarily firmed back up it is perhaps better than $2.00 gas for some folks. We have seen counterparties coming back into the market. We have seen counterparties staffing up.

In general over the last couple of years we have seen about 280 individual counterparties trade in the ICE next day and bid week markets. In general, we actually saw next day trading this year, year to date is actually up 10% versus last year.

I think that's a positive sign.

It owes a bit to what Mr. Alvarez referenced in terms of infrastructure. There are new pipes to trade around and that is creating more opportunity for more customers to be served in unique and new ways.

And unfortunately on the bid week side though we have seen a reduction of about 8%. It's not quite as dramatic as some of the other publishers but it is nonetheless down.

Interestingly on ICE nobody reports trades to us. Our trades are in fact actual real trades done every single day on the system. So I am not necessarily going to echo the idea of required reporting. I'm not certain that adding more regulation or more legislation is always the answer.

I think that there are a lot of very smart companies out there run by a lot of very smart people who will just naturally gravitate towards the best method that fits their needs and I don't think legislated requirements are always the right fix.

Excuse me -- moving on from that. As Mark noted we do work together with a couple of providers to insure greater robustness in transparency for their indices and I'm sure we will get a chance to talk about that a little bit later today, thank you.

MR. STEIS: Dexter Steis at NGI. I wanted to first thank the Commission staff for hosting this Technical Conference. It has already shined a spotlight onto price reporting and market liquidity and that in turn has already helped some of NGI's efforts in recruiting new price reporters to our survey.

To answer the question specifically which is what are we seeing out there and by the way I think it is harder to go next to last in opening remarks than it is to go first. When we started and Orlando went first I said oh good, let Orlando go first because many of my fellow panelists have mentioned some really good points.

So I am just going to try to layer on a few. So we have seen what we will call an isentropic decline in the amount of data that we receive that are indices are constructed upon. That isentropic decline since 2008 when I believe the FERC started soliciting 552 data was fairly steep for a number of years and has sort of come down and we believe is sort of reaching a decline, certainly in the daily market.

The bid week market as J.C. just mentioned is a little bit more tenuous I think -- certainly the amount of fixed priced deals continue to decline in the bid week market.

Mr. Alvarez mentioned infrastructure -- I think infrastructure is helping in certain markets build out more trading and more trading then leads to generally speaking more reporting and more reporting means more robust indexes in certain markets.

There have been a few other trends that NGI has observed. One is volatility -- so volatility was down in 2016 and also production was down in 2016. I believe according to the EIA was the first year production was down in maybe 8 or 9 years.

So that brought forward maybe the last fixed price trading, certainly traders love volatility and they might be interested in trading more fixed price in volatile markets.

We do see volatility improving going forward. We think a couple of things are going to impact that directly.

Certainly exports of natural gas to Mexico and then LNG exports will subject our North American natural gas prices to international supply shocks, supply and demand shocks and that could inject some volatility. Traders like volatility.

Some other things that have impacted the indexes are the amount of information from which we can construct our indexes is the amount of indexation itself. So, you know, I would like to say that natural gas has a high-class problem or that we are victims of our own success.

It is precisely because folks in the room value the reliability and the transparency of the indexes that they utilize the indexes and through utilizing the indexes they therefore are doing less fixed price trading. They are indexing their gas.

So you know you sort of shrug your shoulders and wonder well if they are looking at it and they are evaluating those decisions at a commercial level to use those indexes -- and by the way Platts and NGI and Argus and Energy Intelligence Group -- we all publish liquidity measures in our indexes each day, each week and each month.

So it is caveat emptor. The folks that utilize these indexes can see exactly what at an index level, what's going into those prices, those indexes and I appreciate Matthew and Eric's analysis of the pipeline tariffs. That was sort of a slice into the market that I have not seen so that was interesting.

And we can talk more later about -- you know, NGI has some ideas about how to induce more reporting but I'll save that for a little bit later, thank you.

MR. KAMINSKI: Vince Kaminski, Rice University. I want to thank the Commission for the opportunity to participate in this Conference. You know this is a very important topic. The Institution sets business processes behind price formation and price discovery into commodity markets and is a very important part of the planning of the markets.

But this is always the case with strumming is it doesn't get much attention unless it malfunctions. So for the last few years we have seen some negative trends. I agree with other panelists that it seems that this downward trend, this reaching talk at this level -- so this is good news.

The bad news is that it may continue for some reason I want to mention later in my presentation. You know the second observation I would like to make is that an efficient and transparent market is a public good. But since the case of any public goods there are two problems, two problems that have been identified by the economists quite a long time ago for the first time by with the Swedish economist, Claude Vixa.

So he identified two problems with the public goods. First of all there is always a problem of a free rider -- people who want to take an advantage of a public good but they don't want to participate in funding, supporting the supply of public good.

And second, there will be always market participants who would like less of the public good, you know, those are the market participants who can take advantage of a symmetric information to dominant market positions and they are probably not as much interested in transparency because they have access to better information than an average market participant.

So when it comes to the indices I can identify two basic problems, you know, two sides of the same coin. You know the first problem is strong preference for entering into the index years. And I can identify two sets of reasons why this is the case. You know, the first reason is as a result of great success.

You know, this is the shale revolution but the shale revolution has created certain conditions which lead market participants to have a strong preference for indexed years and I can elaborate on this later.

You know the second problem is that we are really dealing with an integrated natural gas electricity system and this is a system which is very complex and that sometimes minor changes, and minor changes of rules or some minor developments in part of the system can have unexpected and amplified consequences in other parts of the system.

And I think that there were certain developments quite positive in some parts of the integrated electricity natural gas complex, you know, which effected the willingness to provide the data towards index publishers.

And again I will be glad, you know, to identify a few specific examples. You know the second side of the coin is the reluctance to a report to the index publishers. You know, and I think that again one of the reasons behind it is it is a great success story -- this is the shale revolution.

You know the shale revolution collapsed the prices and along with the prices the margins collapsed. So the outcome is that we have many small producers and the marketers who are struggling to survive and if you are struggling to survive the reporting prices and incurring additional costs is probably the last of the things on your mind.

And sometimes we don't realize you know, how much pressure producers and marketers of natural gas -- I was speaking to one trader and he mentioned that some producers they are dealing with cannot afford to buy data, price data information published by the industry, the price reporting agencies. So what is the solution? You know, the solution is just to follow the transactions on ICE, early in the morning, let's say leverage and this becomes a price at which they transact.

And such a transaction will be reported as a fixed price -- will be booked as a fixed price deal but it doesn't necessarily mean that this transaction and the price will be reported.

You know the second problem is you know, there were somethings brought up before by the Department and this is Safe Harbor. I talked to a number of traders you know when they say you know, given that I am, you know, struggling to keep my job, you know, it's the last thing I want to have are some problems with errors and reported prices.

I was talking to a trader, a big financial institution and they cut their role, I think it was an internal role and that three mistakes through their self-reporting to the FERC. You know, but of course the traders don't want it so probably one solution for the Commission, you know, would be to revisit as what's been pointed out by other panelists is the question of Safe Harbor, expunge the language.

You know, it sends a message to the market participants you know, that trespass errors will be treated -- and I will be glad you know, to talk about other issues like I brought up and give specific examples of the developments I have been talking about, thank you.

MR. COLLINS: Thank you all. I want to start a discussion on packing a few of the things that we heard, starting with something that Mr. Alvarez mentioned about shifts in liquidity regionally and from point to point he mentioned based on infrastructure buildouts.

I wonder if you all can discuss what you are seeing if those shifts are significant where the liquidity is shifting and are there certain points now that are just not liquid and in the past -- maybe 13 years ago when the Commission first looked at these issues, how the shifts of liquidity are affecting the indices you all are publishing, you can just turn over your cards.

MR. ALVEREZ: I'll start. So -- and again I will try to make sure the word liquidity -- I'm using it the way you are using it. So I will use an example, so TEDCO, Texas Eastern M3 which is a very -- what I would call for those that have been in the market a long time is an area where a lot of volume moves around.

In December of 2016 bid week, which ended November, in January of 2017, end of December the volume that Platt's used for their first of the month index to calculate TEDCO M3 was 53,500 MMBTU's per day, basically the volume to go into a generating facility.

The volume at M3 that trades fixed price is a lot more than that. So that's an example of where I would say liquidity is not the issue, it goes back to the price reporting issue that we have talked about. As BP, when I came to the Commission myself two years ago and one of the issues that continues to be raised -- my colleague here mentions that the market is healthy.

Well from a price reporter standpoint it is becoming riskier. The fact that in some cases some of us that report we are a larger percentage of that volume calculated to produce the index than we would like and it introduces risk to my company, to my traders.

So that is the core of what I'm here today to speak about as price reporters we need to help together as an industry and as a Commission here to ask you to we need to think about how, whether Safe Harbor is one component of that but what I'm seeing is the fact that there are companies and Platts put out a report that had the top 10 physical movers of volume.

They had a number of marketers in there, not just producers. I understand the producer point -- a number of marketing companies that buy and sell just like we do and they are not reporting. 9 out of the 10 on this sheet did not report of the largest volume growers, volume increase -- that means sense right?

9 out of the 10, Mark you put this report out and you shared it -- 9 out of the 10 did not report. And they are marketers, most of them being marketers. So I think that's something that I would ask the Commission to pay, you know, to address as to what to think about.

Again, I think we are all here to say how can we help and get more reporters -- because we are all about transparency, BP. And from what my end is -- the more we report the healthier the index. 535 at TEDCO M3 on a bid weekend in the winter is unheard of.

When the volume there -- I'm not going to speculate what the volume is but it -- Maryland, New Jersey, New York, Pennsylvania -- all of those states use that index, utilities -- all the big utilities.

Big producers that are coming out in Marcellus use that index 535 so that would be my -- and leave it at that.

MS. BURDICK: Can I ask a follow-up and maybe you all can respond to this as a follow-up too? So what I heard I think in most of your statements from the first question is that you feel like the markets are healthy and because I want to get a little bit into your statement that it is about the reporting and not necessarily that volume isn't being done at the location -- at certain locations.

If you would just comment a little bit more on the distinction between -- there's lots of trading liquidity, there's lots of people in those markets if that is what you are saying versus it is just not being reported. If you could comment a little bit more about when you are saying the health of the market -- is that related to the trading versus the price reporting?

And I think what I have heard is everyone feels like it is healthy in terms of trading but maybe the second piece is not there necessarily but I would just like additional comments on that.

MR. KNEALE: Thanks, I'll comment on that a little bit just as an exchange it runs a marketplace where we see lots of trading. I think Mr. Alvarez is reiterating a point that we have seen consistently over the last several years too is related to infrastructure but also let me just qualify when we say the market is healthy, I think we were all saying the market is healthier.

And I think that we have all acknowledged that knock on wood, we have seen a near bottom, maybe a bottom hopefully at least in terms of liquidity just generally speaking it does seem like some numbers are trending back upwards.

One of the things that we observe at ICE is just total volumes across different regions, different markets, et cetera. One of the interesting things over the last several years has been watching the shift in those volumes, whether it be in the physical daily markets or in the forward financial markets.

Just a couple of things that we have noticed that speak to some of what BP is mentioning. We would agree that in historical benchmark regional products like M3 5 years ago numbers like that would be unheard of.

I would build on that though that there have been a lot of new infrastructure added in the northeast and some of that in of itself pulls away some of those marketed volumes. I am not saying that BP is wrong by any measure. Certainly that sounds like a low number. I unfortunately don't have the December ICE Index in front of me. I would happily take a look at it, but just in general I think Eric pointed out that they had 134 reporters out of roughly 1,200 some odd companies.

ICE typically has run 280 different companies transacting. So in general while we are not a reporter, we do show a broader counterparty depth. I'm not saying we necessarily published more volume at M3.

I'll go out on a limb that we did, we probably had more total counterparties, but that's one of the reasons that we have seen benefit in working with choice providers, index publishers in making sure that we take the transparency and robustness of the ICE trading platform and combine it with a few of the benchmark index providers to insure that we help contribute to the growth and transparency and total robustness of those index liquidity.

Now obviously some of that is still in flex, we haven't fully integrated with ICE, we have been working -- excuse me we have been working with Platts, we have been working with NGI and Dexter since 2007 and I think that there is a general acceptance of indices but I agree that there is still work to be done to improve the total volume that is indexed.

One of the things I think would be interesting is this is really the first time I have seen a 552 breakout in the form that you guys put out. We at ICE have often wondered what version of the market we are missing right for obvious reasons.

Generally speaking if you were to ask a trader in the market at a variety of different companies I would guess based on my own anecdotal feedback the average next day trader would assume 80 to 90% of next day volumes are traded on the ICE platform.

And yet we know that from 552 data the total ICE volume represents only about 65% of volume. What's the other 35%? We have guesses at what it is -- maybe it's tariff, tolling, something that just doesn't fit in the normal next day transaction market.

I'm not sure of that's a part of what we are trying to access in terms of index formation. Generally speaking, 65% or so would be considered a pretty robust index. That said, when we look at the financial volumes, the financial volumes continue to grow and so I think that multiple you mentioned earlier --7.6 will probably continue to expand and it won't necessarily be because indices are bad, it will be because there is new infrastructure, new pipes that are important and the amount of trading and hedging around those pipes is increasing as the market gets healthier.

So let's -- we all need to keep in mind that causation and correlation are different things and need to make sure that we understand when we ask the question and we get an answer, is it the right answer for the right question.

And I know that sounds complicated but hopefully it makes sense when you read it back. I'll give some others a chance to talk, go ahead Mark.

MR. CALLAHAN: It's Mark Callahan at Platts again. Just to close the loop on Orlando's thoughts. So what he is referring to is some analysis that I had presented to the NGSA recently based on our work on the 552 data.

And the comparison that he is talking about was

-- I did an analysis of the biggest, the top 10 companies who had the largest volume increase from 2015 to 2016 data and 9 of those companies were non-price reporters.

Okay so that's what we are getting at there. And so I do agree that with his thoughts, that it is a case of how to capture more liquidity. So, I think from the locational perspective -- and Platts has not done an analysis of each individual location over time to see how liquidity changes.

We can't control a market in terms of how it trades or to make it trade right? But what we can try and do is our best efforts to try and collect a much data as possible that does trade. So I think some of the liquidity changes when you do look at certain locations as parts that are due to fundamentals and it has been mentioned in previous comments.

So for example, you are likely to see more trading in the northeast in more locations that you might see in the Gulf coasts because you have a lot more production there right than you did years ago.,

So you are seeing the fundamental changes in that respect. Also, you are seeing new pipelines and pipelines reversing their flows. You are going to changes in that respect so certain locations which years ago might have been a key point that people had hedged off of aren't any more, for those reasons and also because myself and other peers have added many more locations to our indices.

So before maybe M3 might have been your only option for hedging a long-term contract. Well now you have got M3 and you have got several other neighboring locations which might be a better locational hedge for you. So I think that partially explains that as well.

But I do agree that really it's about the point of how could we capture more transactions and what's going on there and I think that will help solve some of the liquidity concerns on the locational basis that some people might be experiencing, thank you.

MR. PINKSTON: I just wanted a clarification on the M3 example. Is that price no longer -- fixed price trades that are no longer being reported or is that more and more participants are relying on index or some combination of the two?

MR. ALVAREZ: So I would again echo Mark's comments. Yes other locations because of the infrastructure people could be crossly hedging with Dominion or somewhere else around the area right, so I get that.

But 53-5 is pretty drastic for that area. If we were talking somewhere else -- Florida zone two or something but this is M3 so I'm putting it all. I understand that point but it still I think it is too low.

I think for the most part an M3 and in that area as the Commission sure knows there's a lot of big utilities, big LDC's that use index right? So a lot of what in historic, as long as I have been in this market, a lot of that has to do with big volumes going in and out of New York or wherever that are using index.

So I think you're seeing -- I think for the most part those that were trading fixed price around M3 yes you have seen a shift to index because people, you know, I don't have an answer as to why but I think you are seeing a shift more to just using index.

But again, I am saying there is a lot more volume than 53-5 of fixed being done at M3. So I just want to make sure we are clear on that. I don't know -- but there also have been shifts -- again I am not doing it really well here.

The volume has come off but it still, there is enough volume there to have more robust index is what I am trying to say. I think JC had mentioned it. It is healthier, volumes have come off but it is still healthy and I hope I answered your question.

MR. COLLINS: Let him go, his card.

MR. STEIS: Yeah so for TEDCO M3 for June NGI published a volume for M3 delivered of 195,000 MMBTUs. I know it is a different timeframe from what Orlando was speaking about but what that does is it underscores the fact that the amount of trading can vary greatly month to month and it is based on trader's decisions at that moment.

And the other point that I wanted to reiterate was the buildout in the northeast I think has impacted maybe some of the volumes traded at the traditional points like Transco's zone 6 and TEDCO M3.

So it used to be that those were the two main delivery points in the northeast and I think, you know, 7 - 10 years ago NGI's northeast table had maybe 7 price locations. While I look at our price table today in the northeast and it has -- I'm not going to count but 12 or 15 in the northeast and we added an Appalachia table for all of the new Marcellus and Utica production in the new pipelines that are built out there.

And that section has another dozen or so price indexes. So yeah, it's maybe stealing from Peter to pay Paul when traders are looking at markets or they are sourcing their gas to customers there are more options and so maybe there's less trading volume at some of the other options.

At NGI we have always told folks to index to a regional average, index to our northeast regional average or index to our Appalachian regional average but I think the distributors -- the customers, Orlando's customers, they want more pinpoint solutions, they want a location that is near their plant or near the city gate so that's a difficult conversation.

One other point I wanted to layer on comments that I can't let Mark one up me so I am going to try to one up him. We did an analysis with slightly different -- because Mark's analysis I believe was marketers. We did an analysis of producers and we did an analysis of the change in production of all North American producers from 2013 to 2016.

And of the top -- let me get this stat right -- only 1 of the 6 of these 20 companies that report PRAs saw an increase in their production 2016 versus 2013 and that one is actually Mr. Alvarez's company.

So they are a price reporter. They saw a positive change in their production during that 2013-2016 period, -- but as you folks in the room all know, the other companies that make up that list of positive change in production are the independent producers who are not reporting to the PRA's.

And that could be changing. I think there are independent producers who are looking at this that are understanding that they are now a larger share of the market. They are -- historically they have not set up trading shops and they have not traded a lot of fixed price but they are starting to look at that because they realize that they need to be active participants in pricing the commodity that is their asset rather than being just price takers.

So there is a shift going on and I think we should all get together in two years and see what that shift looks like.

MR. COLLINS: Vince and then Euan.

MR. KAMINSKI: Vince Kaminski, Rice University. You know perhaps a quick comment about different definitions of liquidity. So -- one definition of liquidity is just the sheer volume of natural gas to be marketed which has increased a lot given the shale revolution.

You know, the second definition would be attributed to transactions that are tied with bid offer spreads and another definition would be the ability to transact significant volumes without moving the market.

So let's talk for a moment about the first definition of liquidity. You know, the shale revolution expanded volumes quite frequently in the locations where we are seeing sufficient pipeline capacity.

And for many big producers the overwriting objective became selling gas. And the price was less of a concern for some reasons I will comment on in a moment. But this explains why many producers prefer index deals because they can offer transactions under which they sell 1, 2, 3 under the index to capture the market.

And that it creates strong dis-incentives to engage in fixed price deals because you know, the objective is to sell gas because before which there is none.

And the second reason why many producers may be interested in engaging in the index deals is that bigger producers who have stronger credit or with assets they can use as collateral who are hedging entities -- many producers are perhaps the ability to hatch and in a co-tangled market fixed prices and there are hedges that are above the short term prices.

So this means that this, you know, if it is a forward crisis, slide it down to a forward price curve towards spot, you know, it is a drop. And the prices the producers get, you know, are much different from the report indices because they have gained on their hedges.

But the problem is -- is that the royalties which go to the landowners are based on the reported index prices which are much lower. So this is another reason why the producers may be interested in engaging index deals and to avoid the reporting or avoid the fixed price, outright price transactions.

And going back to the second definition of volatility is our ability to transact to result in a significant market impact. You know this is what I heard from a number of traders. You know, ICE is a very well designed trading platform and you know, but transactions on ICE are very closely followed by many market players and some of them may engage in trends following.

So when they see prices going up they jump on this emerging trend and exacerbate it. So many traders told me that if they have to buy a larger volume of gas and say engage in direct transactions with the producers with whom they have long-term relationship -- and those transactions may be or may not be reported towards a price reporting occasions.

The chance that they may not reported because they may have some better optionality which we do not feel will fit well the framework towards an established indices. You know and this is not something new you know.

The trends I mentioned you know, I have seen in energy markets in the past and in the 1990's you know, I have seen the index deals executed at minus 1, minus 2, minus 3 centers under the index, you know, just to dispose of gas.

And also what we can see in other markets including financial markets and equity markets is a trend towards market fragmentation. So transactions taking place on non-public venues -- exchanges which are not open to all the players. This is you know, especially true of equity markets.

So market fragmentation, you know, may be one of those hidden reasons you know, behind the smaller reported volumes to the PRA's, thank you.

MR. CRAIK: So I think people have discussed at length really why -- what's changed in the market fundamentally over the past 10 years. One of the points I think worth noting is that the FERC standards that were created nearly 15 years ago have enabled index developers represented here to adapt to these major changes in the market very effectively.

There have been new indices launched, old and deceased retired. I think to Orlando's point the problem of non-reporting or the question of non-reporting that we have been discussing -- the impacts of that is distributed unevenly and there are definitely locations where Houston Ship Channels, for example, you are aware of a lot of activity but there is not a lot of fixed price trade that is reported.

So what is an index developer supposed to do? Is there a suggestion that we simply abandon those locations and don't report anything? Obviously that would be absurd in my view because then that would result in even less transparency.

So I think essentially two solutions here -- I mean either more reporting is encouraged which we have already discussed or you could -- FERC staff may want to look at the experience of other markets.

So in the post-2008 period ISCO which CFTC is a member of spent a lot of time looking at price formation, price indices in energy and commodity markets and came up with a series of guidelines as to how index developers or PRA's and ISCO should behave.

And under those guidelines sure -- transactions, deals -- take primacy but if a transaction or a deal is not available or if you are concerned about the representative nature of that transaction or deal, you can refer to other pieces of information such as bids and offers.

If they are not available you could look at geographic spreads, locational spreads to points where there is sufficient liquidity. So you know, I accept there is a problem -- but there are also some solutions and I think it is worth staff being open to all options here.

MR. COLLINS: Okay I wanted to ask -- unpack something else Mr. Alvarez. You mentioned -- I think we have heard that both in the declines in physical trading volumes and declines in reported volumes that you mentioned -- I've heard I think two regulatory risk of enforcement.

One is the Safe Harbor provision that errors in reporting to the index. And I think Mr. Alvarez mentioned the perceived risk of being such a large part of the formation of the price in the physical trading and reporting that, that that opens up a different to the trader.

I wanted to get comments on the differences between those two perceived risks and how you see those impacting the market currently?

MR. ALVAREZ: So I'll speak from one of the larger price reporters to Platts. As we are -- as we in some indices become -- in some locations become a larger percentage of the index of the volume unknowingly correct?

Understand it is unknowingly -- to make sure for the record obviously and so that just creates risk perception. People start asking questions. That's physical -- what are you doing on the financial side?

It just invites risk. I don't know how else to articulate that. And again I am in no way, my traders are trained you know we are out there with two ways -- when we know that the market is not as -- and we are making markets. We are in the position as a marketer, as a leading marketer, as a leader in this gas market my traders are trained to make markets for those utilities for those customers that want to price their gas.

In some locations it may not be as liquid as others. We are a leader in this industry and we want to make markets -- fair markets for our customers and that's what we do. But by doing that it is introducing more risk because there is less price reporters.

And my question would be what if some more current price reporters decide no I don't want to do this, then what? Then we are in a real dilemma. So I think, you know, my colleague next to me from Argus, he just mentioned some ideas and thoughts.

There are a number of things I think Safe Harbor we would address over and over again. I think that is something we would look at. Another suggestion or idea would be look at the marketers -- again 9 out of 10 marketers increase volume.

Marketers, not independent producers or utilities or customers or marketers that actually buy and sell gas -- is there something that they need to be reporting? So when I talk to a few independent producers, some of the larger independent producers, the first thing they say is our Board won't approve it. Our Board wants nothing to do with it, price reporting it just introduces risk and so we will just you know, piggy-back you guys and take index.

And that's what is happening more and more and more in this industry.

MR. KNEALE: Thanks, first I want to thank Vince for saying ICE is too transparent. We let people just follow on what's happening there. You know interestingly to echo a bit of a comment about reporting -- one of the things that we hear from some of our customers is that they feel as though trading on ICE is in effect reporting because ICE does create indices.

Our indices every single day publish total volume, weighted average price, the number of counterparties, number of fates. That history has always been available to our customers and to any, you know, ISO/RTO et cetera that had need of them including government organizations as well.

So we do see a lot of customers that wouldn't necessarily report to price reporters that you trade on ICE because they feel that is in effect reporting. Many of those companies profess to trade the greatest majority of their volumes on ICE specifically to be counted.

I won't comment on the Safe Harbor issue because I could deal with that. But I do think that interestingly when we begin to integrate ICE and Platt's data more fully, I think you are going to see a dramatic increase in the reported volumes by Platts.

You are definitely going to see an increase in the total counterparties. You definitely are going to see an increase in the total number of deals. Dexter can certainly comment on the effect that had and some of the NGI indices when we did that too.

I'm not saying that's a complete solve for the issues here but I do believe that as several people up here have maintained you know, give us a couple of years. I know that's not necessarily what everybody up here wants to hear but I think the industry is moving in the right direction.

Are there some small things that we can work together to solve M3? I would love to see five times as much traded there, really I would. An interesting comment on the liquidity of financial versus physical -- I think somebody brought up Channel -- that's been a great mystery for several of the providers up here.

Certainly in our own induce we see it as well. Channel is one of the largest open interest locations in terms of financial trading and it is only accelerating and yet on average people tend to care less and less about trading Channel physical.

Now, at the same time, CATI has grown substantially over the years and so there may be work to do at some point in looking at how we combine or meld certain indices to create added liquidity or at least added data behind them.

But I think that in general the market did a good job of repairing itself and I think that with support from you guys will continue to do that.

MR. STEIS: Thank you. I have just a few ad hoc comments around these issues. One -- just to back up, I think we all talk about that we need to give a booster shot to the Safe Harbor provision or reiterate the Safe Harbor provision.

And perhaps along with that reiterate the policy statement now that it is approaching 15 years old. I think we should also remember and maybe give the Commission credit that kudos for writing a document that has lasted and been relevant for 15 years.

You know, I read it the other day and it is still our guiding principle as PRA's for how we conduct our business and I know that it is the guiding principle for the audits -- internal audits that companies are doing around their price reporting actions to the publishers.

So a booster shot yes, restating it yes, overhauling it -- maybe not. A couple other comments are the question of -- and this is the age-old question is it a problem of trading which contributes to reportable volumes or is it the problem of reporting which contributes to 552 reported volumes?

And it is different on a market by market basis. J.C. just indicated or the Houston -- or just mentioned the Houston Ship Channel, great example. There I solemnly believe that it is a fixed price trading problem not a reporting problem.

We get all the ICE data, we have been getting all the ICE data for 10 years and there are some days that it just does not trade in the next day market at all on ICE and it does not trade bilaterally at least by people that are reporting to us so that's one thing.

And then you know, I have lots of opinions -- some of them are good about how the FERC might induce more fixed price trading. This is a dangerous sort of area but one idea is that you know, downstream we have, you know, Orlando's customers, the utilities.

And they are very happy to transact a lot of their gas on index principally because it is seen as prudent and just by their PUC's. And so you know perhaps there's a way to reach out to the PUC's and have them consider working with their distributors to encourage them to buy a percentage of their gas -- a percentage of their portfolio fixed price.

I don't know how that works but this is a process and you know the first part of the process is putting the idea out there. And then upstream Mr. Alvarez mentioned the marketers who are benefitting from the free rider effect by trading the index but not reporting to the index.

And you know, just another idea is we do annual FERC 552 or perhaps it's time that the FERC would inquire if you are not reporting, why are you not reporting? Again, maybe I'm in the seat where I am able to ask this question so I appreciate the time, thank you.

MR. CALLAHAN: Mark Callahan at Platts. So just a point on the concentration indices -- that is something that Platts is seeing. So if you could look at the top five players in terms of volume in those that price report, they are making up a larger percentage of the indices.

So if you look at 2016 in comparison to the previous six years their percentage of the total tradable market hasn't really changed too much, it's about a quarter of the market but those top 5 price reporters make up 53% of 2016 volumes that were reported to PRA's.

On a monthly basis it is even higher, those top five. I'm sorry the top 10 players in the monthly market make up about 70% so it is very high, so that is real and we do recognize that fact that it does increase the risk for price reporting right, because of the perception that's involved right?

If you are a big player just because you are a big player it is going to invite questions. And your traders might be operating completely honestly and making a market appropriately right but just the perception that accompanies that.

So we do agree that that's something that needs to be addressed and getting more folks to price report, you know, will do that.

Just another point on liquidity -- so there's two ways to handle that from Platt's perspective. And one, there's the PRA solution right? So Houston Ship Channels are something that we have talked about where there has been days that no PRA's have a price, and there has been no trades on ICE.

We recognize that there are some index -- several long-term index deals that price is often good and for transparency purposes there should be a price on that day. So we are changing our methodology to add daily assessments to it.

So if we don't have any reported transactions or if we feel like you know, the one small transaction that we have is not representative of market activity, we do reserve the right to access a price for that location.

And if we did that we would publish an assessment rationale that talked about how we arrived at it, what market did we use to do so, so we think that will help.

Clearly the agreement with ICE that J.C. has mentioned and talked about before will held to increase the number of transactions that go into the indices I guess that is one way to look at it.

But another way is how do we get more people to price report? And that's really what's been brought up here multiple times. And you know, I think the changes to the policy statement I think would be important. Because as folks look at price reporting there's a risk reward associated with that, okay?

You want to be the good citizen, you want to have your trades included in the index because the index comes out differently than what you are expecting, that can cost you money right?

In addition, price reporting allows Platts and other POA's to essentially be an extension of your back office because we are looking at all the transactions you are reporting, we are comparing them to everything else that we are seeing.

We are going to call you up if something doesn't look right compared to other transactions that we are getting. But I think there is more that can be done and I think addressing some of the -- what I'll call ambiguity or uncertainty in interpretation of the FERC policy statement will do that and that's something that we can talk about.

But I am looking forward to Panel 2 and I think that's a good question Sean to ask Panel 2 when you talk about the companies and why they aren't reporting. I can speak anecdotally but obviously you need to hear it from, you know, the folks themselves, thank you.

MR. HAYWOOD: First, Dexter reminded me of my manners so thank you very much for holding this panel. We certainly appreciate it.

I just wanted to make a point you know, that you know, the ICE data that Platts will be incorporating into its survey I'm not exactly sure how that is going to work because they are gleaning the data rather than having the data, you know, reported to them so I am not sure how they -- what their safeguards are in place but it's fine.

I'm just saying that that data is exclusive. It is not made available to all price publishers. It is not, you know, that kind of you know, data. I mean it's not like -- it's like you can encourage, you know, price reporters to, you know report to all publishers but in the case of ICE data that's not being reported to Platts.

Platts is gleaning that data under an exclusive agreement or NGI or whatever. So I would just say that we shouldn't look upon that as a panacea for price publishers because it isn't available.

I think we should keep our focus on the fact that we need people to report to price publishers. So let's just keep that in mind. I mean don't get off on that as the, you know, solution to this situation.

And also I would just say that if, you know, the top 20, you know marketers and price makers out there reported to all publishers we wouldn't be sitting here. I mean the obvious solution is for people -- is for firms to report fixed pricing trading to do fixed price trading and to report it to all the price publishers that, you know, have adopted the FERC standards.

And that's really all I wanted to say. I just wanted to make that point, thank you.

MR. COLLINS: MR. KNEALE?

MR. KNEALE: Thank you. One of the things that I would think sorry, J.C. Neale with ICE, that I think is important to think about too is transparency and index formation. We are talking a lot about reported volumes and the number of trades that go into indices which is obviously important.

More volume tends to be a better index but one of the advantages that ICE has enjoyed over the years and that our customers have enjoyed over the years is a transparency of index formation.

And while there is discussion about possibly highly encouraging to in fact inducing more folks to report, unfortunately you can't go the other way. Sorry, I don't believe it is in anybody's best interest to require purely transparent trading.

That being said the market has itself moved to an extremely transparent mechanism for the vast majority certainly of its next day's volumes. I believe as total liquidity improves again in the bid week I think you will see that happen in bid week volumes as well.

I agree it is not a total panacea but one of the advantages of having the ice data more fully represented into the greater benchmarks is that they get more counterparties but they also get true transparency.

People, as Vince noted -- people can sit and watch the trades that are being added into the index and that's an important part of any index formation is certainty about how it is created. So I think that moving towards more transparency and formation is certainly a positive as well.

MR. COLLINS: Vince?

MR. KAMINSKI: Vince Kaminski, Rice University. I think that it was a recurring theme on this panel. It's a FERC question who leads the market participants towards reporting more transactions and potentially engaging more in the fixed price transactions.

You know more assuaging is one thing that the Commission can do. You know the problem is that you know it may not be very effective if it runs against the economic interest of market and market participants.

And the question is, you know, how to create an environment in which their interests are aligned with the need for transparent and efficient price formation. You know one problem why the index deals are popular is that you know, they are addressed, you know, certain, real or perceived interest of different market participants towards the regulated utilities, you know, the overriding objective is reliability.

Gas has to flow, gas has to show up on a cold day in winter and power producers behind the city gate have to get natural gas producers to produce electricity. You know many utilities which have engaged in long-term enter into long-term transactions with fixed prices.

Lost money when the price is greater, we are criticized in spite of the fact, you know, that given the information they had at the time they made the decision the decision was quite rational.

Let me give you another example -- do you know what the certain market participants like index deals? You know and this might be again related to the issue I mentioned in the opening remarks about the complexity of the entire integrated natural gas and territories of the system.

So the one big risk is that power producers face is volumetric risk which is related to misalignment of the natural gas and electricity base. So natural gas rates that they had, are typically concentrated in the first few hours of the day but this part of the decision has become known at some point during the day and much later.

And on some occasions a power producer may realize that he has gas he doesn't need, that he acquired gas he doesn't need or that he has to buy more gas. And it is very difficult it is very difficult to enter into transitional transactions at reasonable prices late in the day.

So, one solution would be to thing about the measures which would align better in the schedules in gas rating and electricity trading and think about the measures which could stretch trading in natural gas across longer timeframes.

You know what the power producers are doing right now to avoid volumetric risk is they enter into index transactions with embedded options. You know, they pay something extra above the index you know. It might be ten cents but they have the right to swing if they need more gas and they have the right to put back to the marketer if they don't need gas.

When the original premiums they pay for the sustainability is much lower than potential losses they might suffer if they were left with excess gas for which they have no call.

MR. CRIAK: Euan Craik with Argus. Just on the Platts/ICE point which seems to have gotten discussed under this question again with -- on an entirely different matter. But I mean we think innovation in indices is a great thing and more information is good, it can't be bad right?

And competition drives up standards so we all compete with each other, we try and do a better job and then more business and it drives down costs which is frankly one of the reasons we were asked to come into this market and you know, play that role to compete with these existing entities.

So I think its competition, innovation -- is good for all entities in these markets. I guess my only slight concern is that information doesn't become siloed because then it kind of mitigates against further information if index developers have only a partial view of the market.

MR. COLLINS: Can we switch topics a little here and talk about the standards and the index photos, you know the five standards that you need to address in order to have your indices used and for jurisdictional tariffs.

If you can talk a little bit about how your methodologies and prices have changed since these standards were developed and whether you believe that these standards are all still relevant to the changes in the marketplace since 2003?

MR. KNEALE: Thanks Sean, J.C. Neale with ICE. Interestingly I can remember pretty well back in 2003 around some of the -- when this was first published and I may misremember so don't hold me to the fire here but I believe ICE was the first major index to comply with all of these points.

And for the most part those indices have not changed in 14 years. We still publish a number of counterparties, the number of deals, the number of trades, all of the things you asked for -- you know completeness is -- I'm not sure how we measure that.

We certainly give you 100% of the trades we are able to give you after we have done our error checks, et cetera. Verifiability -- I think we are the only 100% accurate, completely audible transaction record of any of the indices.

So in general I think it is just as rational today as it was when you developed it to Dexter's point. It's pretty incredible that legislation written that long again really hasn't been modified all that much or at all. You guys did a great job and I don't really see any need to change that particular piece of it.

MR. HAYWOOD: Tom Haywood. I would just agree. I think the standards under which we publish indices and the standards under which we are given the information by the trading firms, you know, has stood the test of time and I think it still works today. I just want to say that.

I do have problems with the introduction on the Safe Harbor.

MR. CALLAHAN: Mark Callahan with Platts. Yeah I mean I would echo those same statements. I think they do still apply today from the PR perspective in terms of collecting data, the ability to handle that data, verify the accuracy of it.

You know, at the same time price reporting is voluntary and we cannot mandate certain information to be given to us -- for instance counterparty information and market participants have their reasons why they won't disclose that information but we do the best with the information that we have and I think the best representation of that is done with confidence in the indices.

But we don't get asked by market participants for example, to completely overhaul your methodology or change what you are doing, right? And I think that speaks volumes to, you know, to how complete and how well sort of this portion of the price reporting is working.

MR. STEIS: This is Dexter with NGI. Yeah so I guess I stole my own thunder a little bit with my earlier comments but just to layer on or maybe to clarify. Yeah we see the policy statement as the five tenants that I guess the price reporters adheres to and then the five tenants that we as PRA's adhere to as being robust and valid today as they were in 2003.

And the other comment that I have is that the Commission should consider very carefully making changes -- significant changes or any sizable changes to that policy statement because it might cause the market heartburn.

It might, you know, there are processes and procedures that have been put in place at no small expense by the price reporting companies to adhere to that policy statement and I would sure hate for good intentions to go bad and for changes to the policy statement to cause companies to drop out of reporting because they find it more onerous and they have to get Dwight back in or Ernst and Young back in to figure things out, you know.

So that's my word of caution, thank you.

MR. COLLINS: Now are any of the five standards more difficult for you over time to implement and keep up with?

MR. CRAIK: Well I think Mark spoke to the question of verifiability because data submitters will not disclose counterparty names. You only ever have one part of the deal so you are somewhat reliant on the compliance programs of those companies and their fear of for this -- an investigation by your good selves.

But the verifiability angle of it yeah is probably the weakest element of the five standards.

MR. STEIS: I would say that -- I would be interested to hear the answer to the same question from Panel 2. This is Dexter with NGI, excuse me, but my answer -- because we hear some of this from the price reporters is that the error correction is -- we get questions from time to time about them, about you know, how long after a trade has been submitted should they find that there is an error in that submission should they be required to report that, et cetera.

So maybe there's just some fine-tuning of what the standards are around error correction, thank you.

MR. KAMINSKI: Yeah this is somewhat -- to the question you asked but I would like to mention some development which may be potentially important. Last year's European Union introduced a regulation regarding benchmarks.

And benchmark is a term -- a European term for the U.S. price indices and this is an interesting correlation because you know it's based on the principles formulated by IOSCO for all your price reporting organizations, but it goes beyond principles which were contained in this document. You know what is interesting because it introduces different categories of benchmarks or indices. These are critical index, significant index or we are nobody and in the case that you are a critical index the regulators have the right to oblige certain entities to report their prices to the price reporting career organizations.

This happened in the case of I think the legal term is supervised entities, the financial entities which are heavier regulated. What is interesting is that it is a European Union regulation recognized unique corrector of commodity indices and the rules that apply to the commodity benchmarks are somewhat different.

But under some conditions those indices maybe found to be critical and in this case they will be supervised and to watch more closely -- so what I think that what may become an issue at some point is that there will be a need for cross-Atlantic harmonization of regulations given that many price reporting organizations are operated globally.

And you know, at some point you know, the regulators here and in the European Union may face a task of harmonizing the rules under which the price reporting organizations operate. And I'm curious you know, if this is on your radar screen, if you are worried about it, think about it or just you are watching what's going on.

MR. CALLAHAN: This is Mark Callahan from Platts. Yes we are in adherence to those principles, it's something that Platts takes very seriously and for non-oil commodities we have undergone in the previous two years assurance reviews which as a result of those reviews we were deemed to be in compliance with those IOSCO principles.

For non-oil there's an interpretation of those principles right because the natural gas market operates fundamentally differently from the market but never the less those are principles that Platts takes very seriously and would welcome, you know, something like that.

MR. CRAIK: Yeah I would like to speak for Argus. We complied here with the same IOSCO price reporting principles. We have gone through several years now, been true and sorted, we have got most of our business covered by the IOSCO principles.

I think this year we are going to have to expose some of our U.S. natural gas indices to IOSCO as well. So it's been a very valuable process so I think and it's something that -- IOSCO principles are something that maybe the FERC should study in a bit more detail.

As far as the European benchmark regulations we are working hard to come into compliance with those. We don't anticipate that they will affect our business dramatically, however.

MR. STEIS: Dexter at NGI. We have not done an IOSCO review and it is not clear that we -- being that NGI operates entirely in North America that we need to. We do do an annual audit -- external audit. We have an outside company that comes in once a year and audits us that we are in substantial compliance with the five tenants of the FERC policy statement.

MR. COLLINS: Vince? Going to that price index order in the staff presentation there are some statistics on the number of how a step might be considered or are considered under the metrics in there, the thresholds of liquid.

Do you think that given what you have talked about a shift in kind of where volumes are traded and the volumes that you see in the market that these numbers are too high or too low in certain markets and should be revisited?

MR. CRAIK: Would you mind just repeating the question, I didn't get the end?

MR. COLLINS: Liquidity thresholds -- do they, is there a sense that those are still appropriate given the changes in the market over the years and the shifts in the liquidity?

MR. STEIS: So you are referring to Eric and Matthew's -- so naturally I'm curious 13 out of 125 were liquid from both Platts and NGI so my natural curiosity wants me to know how I came out versus Mark, but that's a separate problem.

One thing I did -- you know I think I said this earlier is that we are often asked if you are publishing an index that has low volume typically or low number deals typically, why don't you just get rid of that index?

And we look at that as you know, again caveat emptor -- we put the information out there, volume and number of deals and if the market cares to look at that information it is market information in and of itself.

So as for liquidity thresholds I haven't looked at them recently for the tariffs but I remember around the turn of the century when we were doing this it was Tier 1 was above 100,000 a day; Tier 2 was between 25,000 MMBTU's and 99,000 in Tier 1 -- Tier 3 excuse me was below 25,000 a day.

You know, statistically I think a vast majority of our daily indexes are above 100,000 a day and a good percentage of our bid week indexes are above 100,000 MMBTUs a day and the ones that aren't are denoted as such, thank you.

MR. ALVAREZ: Orlando Alvarez, BP. So again Mark is going to look at me and say you have too much data. But I have a lot of Platts data that I look at and actually going back to the M3 discussion that we had so I can put an end to that one.

So the volume -- the deal volume was over 150,000 a day, 53 got reported. It goes back to the comment that yeah, 150 in the old days it was a lot more than that because now you have other -- to Mark and J.C.'s comment and I just want to pose that so 53 out of 150'ish.

So to answer your question Sean there is -- the locations where we see and again what I have is deals done volume and then reported volumes and you see the gap. Where you see that actually the deals are historically way off and then on top of that the reported volume is a lot lower are areas like SO CAL, PG&E, MISH-CON City Gate -- those again are areas where you don't have as much infrastructure now you start seeing the volumes going up Ship Channel in Chicago -- some areas like that.

So west or some areas that I would -- Rockies is the other big one, so the Rockies you know reported volume in the Rockies in May was actually it was higher but you had a trend up in the first part of '17 but it has been going down pretty quickly.

So those are the areas when we look, those are the areas where Rockies, SO CAL, PG&E, MISH CON, City Gate are some areas that I would to answer your question where we see what I would call volumes going down and price reported volumes even lower.

MR. COLLINS: Craik?

MR. CRAIK: So I mean I think the question is do you want price transparency or not? If we are saying that any index with less than -- a daily index with less than five trades should be delisted or deleted you would create a great deal more opacity in the market.

The price indices that are produced by our companies are used for way more functions than interstate pipeline tariffs. They are used for things like marked to market, they are used for local sales and purchases so the usage of this data way exceeds I think what was determined in the original scope of the FERC standards.

And we frankly get requests, particularly in the southeast now for -- give me a city gate price, there's no market at my city gate but everybody is calculating this price themselves. It would be so much easier if you would just give me that price which would be a hub plus transportation.

Now that would not conform with the current FERC standards but it is something that elements of the market are starting to demand. So I think there is this sort of trade-off between a definition -- one size fits all definition of liquidity and the need for price transparency by the market participants which is what we provide.

MR. HAYWOOD: Sorry this is Tom Haywood -- I would just like to say as far as liquidity goes, you know, liquidity at a point can vary from month to month and you know, but you have the same reporting parties.

So actually liquidity can tell you something too. You know it is of interest and so you know, in the end the price survey is a journalistic function. I mean it is a snapshot into trading and liquidity is part of that trading.

So to say well if you don't get this much liquidity you shouldn't publish the point I think kind of goes against that principle that in the end we are journalists and that's the whole idea -- and so this is a journalistic function.

We have a firewall between us and business.

MR. KNEALE: Thanks, J.C. at ICE. I guess one of the things that I would just anecdotally point out when we first started publishing our indices early, early on in '01, '02 and then modified them in '03 to meet your standards we debated for years what's the right number?

When do we start publishing an index based on transactions? And we used to have a fairly high watermark for getting in -- I think it was even higher than some of the standards you guys published, and we gradually reduced that over time.

And in fact now we have none. So if there is one trade we index it that day. What we have seen over time based on comment from customer, et cetera and I know these guys have heard it -- you get a call from a person who has a new pipe they want to trade and boy they are so excited to trade, and great it traded one time.

Did you index it? And you say, gosh it was one trade maybe let's not get ahead of ourselves. But what we found is that the sooner we made that one trade transparent to the market it was just the start of that rolling stone.

And really we started to see a lot more volume come in. When we removed that threshold indices that were -- sorry, trading points that typically transacted two, three times a day all of a sudden were transacting 10 or 15 times a day.

People find a real reassurance that their number is getting counted. They love seeing those prints up there but it does come back to some extent about the comments that Vince made about why certain people prefer index transactions.

Often times we get calls from utilities saying can you index this particular point? Well, sure if there was any volume we would and the problem is that there isn't fixed price reported volumes at those points sometimes. It speaks back to a little bit of what Dexter spoke to regarding some of Orlando's questions -- I'm going to try to work everyone in on this comment.

The specificity that certain people look for as a price is sometimes beyond any of our abilities to provide for them and so you end up with points that are nearby, et cetera -- that's not necessarily a problem but I do think we might hear from all of our customers that gosh, I would love to see more at this point, it's just not economic for any of us to produce the price at that point nor is there enough information at that point period.

MR. CALLAHAN: Mark Callahan, Platts. And that's a good point J.C. and as a PRA for us we like to provide transparency to the market okay, and while these liquidity thresholds are barometers that are important to use to gauge liquidity in a location, there are serious implications.

It is not the end all as to whether that location is viable or not, okay? So Platts produces indices for 110 locations on a daily basis. Some of those locations trade every day some don't. Some only trade in the winter under extreme scenarios right?

But that example is important because that sends key price signals to the market when we do see activity at certain points, okay. So I think there is benefit to that and the other thing is you know, we want to provide this transparency that we can to the market because ultimately it is up to them to decide what to use.

You know we will provide them with the basket of locations where they can look at what is the liquidity at these locations and the prices at what they are trading and they can make the decision on what works best for them to hedge their risks associated with that location.

So it's up to us to provide that transparency, do what we can -- it's up the market to decide really what works for them, thank you.

MR. COLLINS: Mr. Alvarez?

MR. ALVAREZ: Orlando Alvarez from BP. I think there's a -- and when we were going through the 552 data it talked about 25,000 a day being -- that's what I remember hearing 25,000 a day being the threshold.

There are some cases where I guess I don't have the answer. I'm not trying to -- but if the PRA's are getting, they see that it is 20 or 30 a day reported but they see a lot more volume out there is there something else they can do at that point in time instead of just publishing the 20 a day?

It can be one deal, two a day, two contracts a day and it gets published as an index but maybe there's 100,000 - 200,000 being traded that day. Could there be some sort of an assessment -- a call to brokers, get the broker more -- I don't know, to look at the market and figure out if something else can be done to get a more robust index in there?

That would be my -- something like that I'm not

--just throwing ideas out.

MR. BEDNARCZYK: To follow on that point a little bit can you guys talk about at what point you will actually make an assessment for your indices when there isn't enough of their volumes and number of trades and what those thresholds are and how that impacts?

MR. CALLAHAN: Mark Callahan, Platts. So we do not have thresholds in terms of volume or number of trades or number of counterparties. What we will do is we will look at the -- let's say we have one trade at a certain location and that essentially is the volume weighted average then because that's the only trade.

We will look at that price for that location in relation to other neighboring locations which are more liquid and make a determination as to whether we feel like that price is representative.

Now in today's environment where we tend to see low volatility with low prices, that's a little bit easier right? But if we feel like that price is not representative then we will use other market information that we can gather to try and assess a price which we feel would be representative.

So we don't have any hard and fast rules, it is part of the editorial judgment that we incorporate into our methodology.

MR. CRAIK: Yeah and just for our part I mean very similar for dailies we -- if there is no trade done we just leave it blank because typically people are pricing off an average of several days and that's because that's what the market asked us to do.

For bid week for monthlies we will make an assessment because that's just too big a hole if someone has a contract pricing on your index so we will make an assessment based on similar indexes in that region and the transportation costs to that point.

MR. STEIS: Dexter from NGI. We don't currently do assessments. NGI has been lucky enough not to have to do assessments for more than 10 years now really since the challenges around the turn of the century with indexes.

But we are reviewing our policy on assessments currently -- as I said earlier bid week is the bigger concern but if we are to ever restart the assessment process it would be done -- it would be made highly transparent and it would be using relevant market information you know, that we have available -- bid asks from ICE, supply/demand relationships to other locations.

And this would only be in the absence of, you know, market available data either from the ICE or directly reported to us from our price reporters, thank you.

MR. COLLINS: Do you see the need or hear about a demand for more transparency into the current assessments that you are doing, to all the panelists?

MR. CRAIK: I could kick off that. I think under the IOSCO protocols and this would be probably for Mark unfortunately in this instance, and he can speak for himself I'm sure.

I mean there's a requirement to provide an assessment rationale if a financial instrument is settling on an assessment so yes there's that requirement.

MR. CALLAHAN: Mark Callahan from Platts. So there hasn't been a demand from market participants or those who settle on our prices to do that. It's something that as a PRA we have voluntarily chosen to do in order to be more transparent in our approach.

So that is the assessment rationale whenever we do assess a price. It is adherence to the IOSCO principles for PRA's. And in addition the ICE agreement is another level of that whereas currently if a deal were to transact on ICE there is uncertainty in the market because those folks who are watching the ICE and they see that trade they don't know the participants so they don't know if either of those companies are a price reporter, therefore they don't know if that deal will be part of the Platts index for that day.

But we have the agreement with ICE that that will go away and J.C. talked about the transparency around price formation. We think that is going to be a big improvement in the industry because as you are watching these markets trade on the ICE exchange throughout the morning you have got complete confidence that those trades will be part of the index.

MR. COLLINS: Thank you. We have worked through the four main topics that we wanted to. I wanted to ask other people around the table here if they had follow-up questions?

MR. ELLSWORTH: On this issue of assessment, have they all commented on the monthly market or the daily market, which requires it more?

MR. CALLAHAN: Mark Callahan at Platts. So our monthly methodology has incorporated the ability to do assessments for several years and I think for the past about 2 and   years we published assessment rationales when we do assess a price.

The ability to do assessments in the daily market is something that we are going to be starting later this year when we implement the tenants of the agreement with ICE.

MR. ELLSWORTH: Do you have any expectations about whether it would be greater in a daily or a monthly market based on, you know, what you have looked at in the past?

MR. CALLAHAN: So that's a good question. I mean we assess approximately 6 to 8 monthly locations on a daily basis today. I haven't done the analysis around the numbers but I would expect us to do a similar number of daily assessments over the 110 locations that we have.

I should say that it is not a requirement to do an assessment so if we don't have any market information and we feel like we can't put a price on a location then we won't do so but I think it is fair to say it is going to be in that same range.

MS. WOZNIAK: Earlier in the discussion about the 2030 policy statement we heard you know, there's not the need for a complete overhaul but I believe Mr. Callahan you said more could be done and there is some ambiguity in interpreting the policy statement. Could you elaborate a little further on that please?

MR. CALLAHAN: Sure Caroline absolution. One example would be the requirement that price reporters report all of their transactions to a PRA. And the question that we have got asked in the past and I think it appears that FERC staff's interpretation of this has changed through the years does that mean all daily and monthly trades?

Or does that mean if you are going to report daily trades -- report only all of your daily trades. If you want to report monthlies you report only all of your monthly trades. And I think there is some uncertainty there in the market.

As we look at ways in which to potentially increase the universe of price reporters I think clarifying that and allowing a separation of daily and monthly reporting would be beneficial and I think you would see an increase in the number of price reporters which will help to obviously make these indices more robust but accomplish some of the issues that have been brought up in terms of you know, the larger concentration that we are seeing of price reporters amongst the bigger players.

MR. HAYWOOD: I would just say that as we said, you know, the idea of requirements for reporting and the requirements for publishing prices I have no problems with any of that. It might be tweaked but really it's a fairly good system. Where we have a problem is in Section 11 where it talks about undue burdens on reporting to more than one publisher, the emphasis on, you know, just report to one publisher was good whereas we don't feel like it is opening up the idea that reporting to all publishers is a good thing.

You know, that you shouldn't be exclusively giving all of these prices to just one of the price aggregators. Also, the other thing that I would just say is that there really needs to be a clear statement that reporting to all, you know, publishers that you know, have adopted the policy standards and are in good stead with that.

That shows a good faith on the part of the reporting party that's going to weigh in their favor. That in any inquiry by the EMO because you know, this shows that they are being transparent -- they aren't trying to put one over on anyone, that they are not just reporting to one, you know, price publisher where there might be some arbitrage or there might, you know, some things going on that for some reason they just feel like reporting to one.

And also, this doesn't reflect the -- some of this doesn't reflect the current method of reporting where you know, if someone is reporting to Argus, they are reporting via email. They are reporting their deals -- all they have to do is put our address on that email, put us on the distribution list and they are done.

So the burden of reporting today is so different than it used to be. It wouldn't be that are his reporters calling three traders over at, you know, at BP and we are calling those three traders and Platts is calling those three traders -- the burden on that sense isn't, you know, isn't there anymore.

So the idea of the burdensome problems of reporting should definitely be eliminated from a policy state, just saying, thank you.

MR. KNEALE: I guess I wanted, sorry J.C. Kneale with ICE. I want to make a couple of points. One is I want to make sure that we are all transparent about the fact that zero price reporters isn't a terrible outcome.

If we look at the ACO natural gas market, they have zero price reporters. Why is that? It all trades electronically on the NGX system. It's fully transparent. Now that doesn't mean it is necessarily every single trade that occurs in the market but it is a widely accepted index.

Orlando probably knows better than me but I think it covers 15% or so of all forward financial volumes in North America. It is widely accepted, there are no issues with it. CGPR isn't here because they don't need to be here.

The second point that I would make is on the idea of inducing a customer to report to all PRA's because they report to one is not without risk. It's not without risk to the customer most importantly. When a customer makes a decision about being a price reporter they do a lot of their own investigative work to determine if they are comfortable with the PRA that they will be reporting to.

And should the rule expand to all because of one that doesn't necessarily stop many new PRA's from popping up. That while they may meet some standards, may not necessarily have the customer's best interests in mind or treat data in the same way -- have the same methodology.

There is lots of subjectivity in the index formation business by the PRAs. Again, they have referred to it as a journalistic process so I don't think that that's necessarily the right outcome.

Are there things that could make, you know, companies more comfortable with reporting to their chosen PRAs? Yeah, probably so, I'm not the best one to comment on that but certainly I don't think obliging them to report to all is the correct outcome either.

MR. STEIS: This is Dexter with NGI. I just have one comment and it circles back to Mark's comment about confirming or clarifying the policy statement with respect to reporting fully and completely in the daily market versus reporting fully and completely in the bid week market.

I strongly agree that it would benefit price reporting overall if the Commission were to permit daily price reporting or bid week price reporting or both, essentially let the price reporter choose. And here's why -- you know we talked earlier or maybe I talked earlier about the distributors, the LDC's who favor the bid week market and who may do some fixed price trading but not a lot.

And we talked about possible inducements for them to trade more in the fixed price market and then to report those deals. Well if they would report those bid week deals that would be great but if they are tasked with also having to report in the daily market where they do very, very little trade at all because that's not the typical way that a utility buys natural gas, then they might just not report at all.

So that would be my recommendation, thank you.

MR. CALLAHAN: Mark Callahan at Platts again. Just one comment -- I also do not think it is a good idea to have a mandate that a price reported, price reports to all PRA's. I think that there are several reasons for that and among them would be the methodology will differ amongst different PRA's so the interpretation of trade data that gets received might be perceived differently from one PRA to another.

So and at some point it is also a manpower issue right, so there is a cost of companies to price report. They have to produce the reports -- they have to have people who are available to take phone calls from us if we have questions about a transaction.

And I think a mandate of that sort would result in potentially, you know, a call from multiple PRA's about different transactions. I think it potentially just complicates that process and might be essentially a tipping point for a company to decide not to price report if it becomes too onerous on them.

MR. HAYWOOD: Well I would of course I would just kind of disagree with Mark on one thing. That you know, the amount of calls that you get on anomalous data is not so great as to preclude a robust and healthy price reporting system.

The other thing is that you know, yeah I would agree -- I wouldn't say you need -- FERC needs to say if you report to one you have to report to all. I would just say that the policy statement should encourage the widespread dissemination of your prices within reason.

I mean you need to give this to people that you trust. We have, you know, the policy statements, we have firewalls, we have confidentiality. You know, I mean if the price reporting agency can't demonstrate that you know, that the price aggregator can't demonstrate that it can keep the data secure I wouldn't give it to them either.

I'm just saying that FERC in their Safe Harbor should encourage the robustness of the price reporting system and the idea that, you know, that you should just report to one because you want to, you know, keep the questions at a minimum or that you don't want to incur any more costs aggregating the data and giving that to a price publisher is really not exactly the fact.

Because if you are going to get in line to report to Mark you have already done the work, you know, so it is very little effort to report to, you know, Argue and EIG as long as we can demonstrate that we can keep the information confidential, that we will treat it properly and that we will provide a good price report, a good price report that people can use in the market for perhaps less, you know but in other available price sets that is going to be very much like Mark's price set because that's how these indices work.

I mean these published prices are often very much alike unless there is some huge volatility during the day or you know, you don't -- but the more access you have the better everyone's data is going to be.

And so that should be the ultimate purpose of the price reporting system that we have -- thank you.

MR. CRAIK: I'm not sure if this is the original intent of the question or not. From time to time the notion has been raised should reporting of trades be mandatory, at least on Form 552 submitters and I don't think we think it should.

I think it would place an unreasonable burden on smaller market participants. I think what would be way more effective would just be some strong encouragement from the Commission and once again a review of removing some of the regulatory risk involved in reporting.

MS. LOZANO: I have a question for Dr. Kaminski. Would it be beneficial to revisit or to try to define minimum liquidity thresholds?

MR. KAMINSKI: Well it depends whether you are talking about pipeline tariffs or indices used in private transactions for settlement of derivatives of index transactions. I think that minimum thresholds are justified in the case of tariff pipelines, you know, because tariff pipelines affect a large number of market participants and you know they have no choice.

They have to comply with the tariff. In the case of bilateral transactions the counterparties can use their judgment to assess whether the indices make sense, whether they address their needs and meets the minimum requirements for qualitative and soundness.

So I would recommend maintaining liquidity thresholds for the jurisdictional tariffs but I would recommend against introducing thresholds for indices used in bilateral transactions.

MR. PINKSTON: I guess I have a question for the panel. There are some comments early on that the declining liquidity seemed to have leveled off or bottomed out in the daily but no one would make that assessment about bid week.

And we have noted some bid week markets and it is not even so much reporting it is just like for instance, watching ICE traditional markets. Ship Channel has been mentioned, we noted some of the West Texas supply points that are hardly trading -- is there something distinct about bid week that we should be aware of or is the problem more acute in your mind in bid week?

MR. KNEALE: J.C. at ICE. I'll just throw out something just thinking out loud to some extent, just some observations based on some index data. Interestingly when I looked at our index decline in bid week year over year from 17 to 16 while I did see an 8% -- if I compared that also with our e-confirm transaction system which is a back office confirmation system amongst the counterparties it was actually slightly higher of a decline when I look at the whole market.

And so that's interesting to me in that -- and that also can be a customer mix issue just like index formation is a customer mix issue but generally speaking most of the larger participants in the gas market will use our e-confirm service.

It may be that some of these markets are getting smaller, okay that's one issue. One issue is that there are more hubs and so you do have a fractured liquidity. Certainly when -- I think PJM Western Hub to use a power example, is an excellent example of this.

Ten years ago when you wanted to trade PJM you traded Western Hub by default and liquidity at PJM -- if I am going to measure Western Hub only is down somewhere around 50% over the last 6 years.

That doesn't mean power liquidity is down. Power liquidity is in fact flat to up over the last 8 years, much better than gas is on a relative basis. Now if you ask any trader in the market they will say it feels thinner and it is true it does feel thinner but part of that is the specificity. The market is trading more points and so you have less combined liquidity into central locations.

And there is a phrase that you have probably heard which is -- liquidity begets liquidity. It is much easier to feel like taking a position in a market where you know there is plenty of liquidity.

In less liquid markets it is a riskier decision to enter that market at given price levels simply because there is lower liquidity. So as many people have stated, yes we believe the liquidity has sort of bottomed out, we are hoping to see some recovery.

The daily market in general just has many, many, many more transactions -- thousands and it is easier to see that clicking up quicker because liquidity begets liquidity. Certainly if we look in the bid week markets you are likely to see the more liquid points on an open interest basis are picking up better than some of the less liquid.

The other side of that is just fundamentals -- I mean there is only so much we can do about fundamentals and while on a day to day basis I may need to balance things out -- buy, sell, et cetera, when I am doing my month ahead planning some people aren't even bothering to hedge a month ahead anymore because gas is going to be $3.00.

It's just the way it is going to be. Now that is not true at every location but the same theory holds true. And so I do think it is a multi-faceted problem, it is not necessarily a problem of reporting. It's complex.

MR. CALLAHAN: Mark Callahan at Platts. I think this is probably a question that is better answered by those in the market that are trading it but I can speak sort of anecdotally. You know I do think that the fracturing that J.C. is talking about is something they do -- the fact that there's just more locations.

But I do think that even if you were to add up the total volume traded it is down over time. And some of the opening comments here talked about some of the reasons for that and I think it is essentially the low prices and low volatility which I think is probably the biggest factor for that.

Where people just don't have that fear that the daily volatility exists and the price is going to move away from that essentially right? So they are comfortable with the volatility that they are seeing in the dailies and it is within their tolerance band and they say okay I'm not willing to lock in this price on a monthly basis because I'm just comfortable with what the daily market is going to average out.

So I think there is part of that. We talked about change in the composition of market players right, we have got your producers typically do trade at index. On the other side of that you have got your end users who are trading more and more index because they will tell you that they can justify that to their regulators right in order for them to proof that they acted prudently in terms of managing their obligations.

So I think it's a little bit of all of those.

MR. STEIS: Dexter with NGI. Yeah the buyer is always right and so producers and marketers are going to provide the risk management product to either the end user, a steel producer or an aluminum producer or they are going to provide that risk management product that that buyer wants.

And then I have already talked about the LDC and Mark just mentioned that it is prudent -- it has been determined prudent by their Public Utility Commission. But let's get back to the purchaser, the end user, the big company that makes wall border or fertilizer or steel or aluminum.

So natural gas at $2.00 or $3.00 and MMBTU it is not a sea level problem in these companies. And so the procurement manager is more likely to just buy at index. When natural gas was at 7 or 8 dollars in MMBTU that procurement manager was busy working and doing his job in risk management to try as best he can to get that price down and if that involved buying at fixed price he or she was doing so.

So I do -- just to reiterate, low prices make the decision to transact at index easier.

MR. ALVAREZ: Orlando Alvarez at BP. So as we talk about the state of the natural gas industry or market, this is a bit off of what we are talking physical liquidity -- but I just think it is important for the Commission to also recognize when you look at the open interest in the futures market or in the swaps market and when I'm talking futures, basically futures are fixed price futures.

When you look at the CME's is what we pull -- what we are seeing now in the market is that if you are a utility and you come and you want your price hedged out the next 5 to 7 years to a customer of a fertilizer plant or whoever, that luxury from being a marketer, that luxury is not there anymore.

I mean three years out when you look at the CME and use the Henry Hub as a proxy, very simply put over the last 5 years we looked at it. And if you were, in 2012 trying to price out for 5 years out, 4 to 5 years out the open interest today is 40% of what it was in 2012, does that make sense?

So 40% of the open interest for term business at the Hub futures 5 years ago -- what I am saying in the long way is so the opportunity to help customers risk manage their commodity in the term is significantly reduced.

Everyone -- so there are less speculators in the market, the rule 503, number of things that took banks out of that, capital requirements -- we see less speculators in the market, we see a lot less market makers in the market and so that term business and all that's doing in a way is your risk premiums go up.

So now if I am going to take that risk out for 7 years I can't lay it off the way I used to lay it off so that risk premium goes up and that is something that is prominent in this market across pretty much every point.

So I think it is very important too, we talked a lot about physical and price reporting but if you look at the total gas market and how it works, these utilities, these LDC's, these customers need to hedge their product.

They want to hedge their fracked spreads or their fertilizer product with the gas input, that ability to do that has been -- what word I can use is radically different than it was 5 years ago. And a lot of that has to do with all of the new regulatory, you know, regulations that have been introduced as I mentioned. It's a very important point to make.

MR. PINKSTON: I guess just to clarify that you are saying the lack and open interest beyond three years is not really a function of the decline in physical liquidity in reporting but more the financial regulation?

MR. ALVAREZ: That's correct. That's why I said it is different -- I want to make sure it is clearly different than what we have been talking about. But you can't just look at the physical market. The state of the industry and the state of the market are where it is and again two years ago when I was in front of the Commission and also in front of the CFTC as well we were making that point.

It's not just the price reporting and the physical piece but it is also the financial liquidity. This is about financial liquidity which I think we have to look at them together.

MR. KNEALE: I just was going to echo Orlando's point mostly for the point of hammering it home that we are talking about two different issues and we would agree --

certainly I would agree, I'll raise up my hand that forward liquidity is very different than what we are talking about here today.

And forward liquidity is for a variety of reasons challenged right now. I agree completely with Orlando that part of it has been regulation that has forced a number of risk warehouse-type customers, speculators, banks, et cetera out of the market. There is no incentive for them to participate even if they wanted to participate is another problem because for the next 10 years the forward curve is roughly $3.00.

It's just not very exciting and so we have seen just literally in the last 6 months we started to see a little bit more activity forward out the curve but it is still not anywhere near what it was when all the banks were involved, all the market makers were involved. There were more hedge funds involved -- there were just people willing to put their own money at risk for an opinion.

That tightens bid ask, it makes it cheaper for the end users which all of us are ultimately. And so you know, enough about that I'm sure that that's changing to some extent for a variety of reasons but it does come back to one problem that I think Orlando hit on earlier and a few of us talked about and I'm not sure what the great solve is -- is historically points like M3 or Ship Channel 5 years ago would be traded you know, dozens and dozens and dozens of times a day trading these massive piles of open interest and what happens to that open interest as we get to now and nobody cares about trading fixed prices, Ship Channel.

That is an interesting problem that I'll let the PRA's, you know, comment on or at least thing about. They don't need to comment on it now but that's certainly something that we at ICE along with NGI and Platts and others and customers are certainly contemplating what the best solutions there are to solve some of those liquidity problems in the now versus the forward.

MS. BURDICK: Any other comments? Thank you very much for participating -- oh, oh --

MR. CALLAHAN: I'm sorry I don't want to open a can of worms and I don't want to make us late for lunch either but we have talked about -- I think it is important to mention this to the Commissioners that we have talked about ways which we can change the policy standard and get people to price report.

And I think that there is -- and this is information that I get from price reporters in the market. There is a disincentive for people to price report and that is around the audit process of price reporting, specifically, some of the FERC audit that gets done.

And I think that there is a perception amongst market participants that that price reporting audit -- some work needs to be done there. For example, some reduction of scope alright, so rather than looking at a 4 and or 5 year period maybe reducing the scope.

Also being more transparent up front about what the scope of the audit will be. What will you be looking at, okay? And I think having some more confidence around that I think would help price reporters as they weigh the risk reward of making that decision to price report because I think the scales are tipped in favor of a disincentive for some folks right now.

MS. BURDICK: Thank you, and thank you all for participating and we will break now for lunch, you have an extra 15 minutes and we will return here at 1:00, thank you.

(Lunch 11:45 a.m. - 1:00 p.m.)

MS. BURDICK: Alright -- it's a little after 1 so if everyone could take their seats we will get started.

Alright good afternoon and I hope you all enjoyed your break. We are back for the second panel. We are going to be talking about the use of natural gas indices and the role of natural gas indices in price formation.

We have panelists from a variety of different organizations who will speak to this topic and I am going to ask all panelists to introduce themselves starting with Mr. Sharp.

MR. SHARP: My name is Donnie Sharp, I work with Huntsville Utilities in north Alabama. I'm also representing APGA, the American Public Gas Association.

MR. GRINDAL: My name is Corey Grindal. I'm with Cheniere Energy. We are the largest operating facility -- the only operating facility exporting LNG right now in the lower 48 states.

MR. GREENWOOD: My name is Paul Greenwood, I am the Vice President at Exxon Mobile Gas and Power Marketing responsible for the Americas and new markets and I am here representing the NGSA, the Natural Gas Supply Association.

MR. BRADLEY: My name is Gregg Bradley, I'm the Supervisor in the Market Monitoring Department at ISO New England.

MS. BERGLES: Susan Bergles, I'm Assistant General Counsel at the American Gas Association.

MR. WAYNE: I'm George Wayne with Kinder Morgan out in the West Region but I am representing all of Kinder Morgan.

MR. ALDERETE: Hello, my name is Guillermo Alderete, Director of Market Analysis and Forecasting in the California ISO. We are an independent electric system operator.

MR. BENNETT: My name is Lee Bennett, I'm with TransCanada, U.S. Pipelines but today I am going to be representing the Interstate Natural Gas Association of America so the views that I am representing are not necessarily that of my employer.

MR. LEEVANSCHAICK: I'm Pallas LeeVanSchaick with Potomac Economics and we specialize in market monitoring of U.S. power markets and we are the market monitor for the MISO, the New York ISO and we also serve as the external market monitor for ISO New England.

MR. LOUW: My name is David Louw. I'm with Macquarie Energy. We are a marketer of both natural gas and power across North America active in all the ISO's and across many of the pipes in North America.

MS. BURDICK: Thank you all for being here today. I just want to remind all the panelists since you are all new this panel that when you want to speak please turn your microphone on and when you are done speaking turn it off to avoid any interference.

And then also turn your name card up when you would like to speak and with that I will turn it over to Adam who will be moderating the next panel.

MR. BEDNARCZYK: Thank you. So first of all I would like you guys to all start off describing your current uses of natural gas indices including for financial hedging or other derivatives and go from there. Maybe we can start around the table with Donnie and then work our way around.

MR. SHARP: Thanks I'm here with the APGA, American Public Gas Association. We are the trade association for nearly 1,000 local governmentally owned gas distributors across the country and most of these are small purchasers of gas so we are not necessarily large systems.

But the majority of the members, most of them they publish -- I mean buy gas off the index, particularly the first of the month. Like for us in Huntsville we buy about one-third of our supply off the first of the month index year around.

So I am glad that you all are looking into this and we have a vested interest not just APGA but as Huntsville to make sure they are correct because we do rely on them. We look at the commodity costs they usually represent roughly 60% of our expenses for the gas system for the year so it is substantial so we want to make sure they are correct.

But when we get further into this the APGA members are far flung they are all over the United States so they are subject to a lot of different pipelines and a lot of different indexes than Huntsville, we are primarily in the southeast part of the system.

And what I have observed from just -- we subscribe to ISO we don't trade directly on an ISO basis. What I am doing my transactions for Huntsville is I'm looking at ISO to see what it is trading at and then making a decision do I want to pick up and call BP or Shell or whoever and buy gas.

And what I have noticed over the years is I can't say fluently that they are less liquid but there does seem to be less transactions -- it is not as fast-moving as it once was so it has led me to believe that there is less activity on there maybe being reported to Platts.

And we do do a lot of transactions in the daily market that are based on gas daily mid-point on different pipelines so we do -- we would like for all of this to be fixed if it is out of line. So I'm really just trying to communicate that to you as an end user representative of other end users is that we do rely on these indexes to be right so we don't want a small number of people having too much weight in what they are.

It is to all of our advantage for them to be more out there and be available where everyone could see them, that they are correct and that we have complete confidence in them.

MR. BEDNARCZYK: I guess as a follow-on question, tell us the answer and also the rest of the panelists, do you actually have confidence that the indices that you are using reflect the locational value of natural gas?

MR. SHARP: It makes me worry about it sometimes.

Some of the things like Orlando said when we are seeing the volume sometimes reported, they are thin, it does cause a concern because not that we know that there is any manipulation at all but there is -- it makes you wonder about the transparency and we are basing a significant portion of our commodity cost on it we want to have confidence that it is correct, that there is enough reporting there that it is not being slanted in one direction or the other.

It could cost our -- we are a non-profit system, we don't want it to cost our people more money, so at the end of the day that's what it is all about to me -- to us.

MR. BEDNARCZYK: Thank you.

MR. GRINDAL: So I think to answer your question what do we use the indices for? We are currently moving somewhere between 2.2 and 2.4 BCF a day down to our Sabine Pass Terminal. We are in the process of commissioning our fourth train which will likely put our volumes probably close to over 3 BCF depending on seasonable temperatures and that's per day.

So we use indices for part of our business but we buy gas on a multitude of different indexes. We do a lot of it on a physical basis which was addressed earlier but we do buy gas off of the various indices because of the number of counterparties that we deal with, we try to meet the way that they prefer to sell their molecules.

In terms of confidence, we do have confidence as we have worked with many of you sitting around the table here -- we have every intention of price reporting. We do not today but by the end of the year I have every confidence that we will be a price reporter.

So you know when it comes back to the panel that you had before about transparency, everything that we do is fairly transparent. You can go to Cheniere.com, we have well over 200 pages of analyst presentations that talk about various aspects of our business.

Price reporting is one of those things that to me with this side of the business in the United States we feel pretty strongly that we want to be as transparent as we are with the rest of our business.

So we do have confidence in them. There are places that I would say that what I get inside FERC or I get NGI every month I go down and I look at the number of trades that set some of these indexes.

Part of the reason why we feel that we should report just because we do a majority of our activity which is in the mid-continent area and the Gulf Coast areas of the United States, some of the indices are lacking just in terms of absolute volume -- but like I said we buy off of a multitude of different indices just because we have to with our customer base.

But they are very important to us so I would say thank you for having me here as well as we do appreciate the FERC support in looking into this because I do think that this is one of the things that will be a big issue for our industry on a go forward basis for many of the reasons that were talked about this morning.

MR. GREENWOOD: Yeah I would like to start by reiterating the thank you. It is great to be here this is clearly a subject which is very important and it is great to have the chance to spend so much time kind of canvassing some of these views across the industry and making sure you have a chance to talk through our processes, our approach and our views so thank you for that.

You asked the question how do you trade gas? Some of the numbers in the NGSA I wouldn't have thought there was a single physical index basis, fixed price swap, a fixed price whatever it is that we don't do across a range of members of the NGSA for pretty obvious reasons.

We are a large organization that trades in many different ways. Each individual entity with an NGSA will have a different approach based on its own strategy and how it wants to market the gas but I think we have every base covered across the spectrum there.

This is really important and you know, I would just like to characterize a little bit of why it is important to us. If you look at the NGSA members I have no idea what the number is but as I said in the past decade or so we have invested multiple hundreds of billions in the natural gas industry.

And the way in which this market functions to price that gas is critical to us and we are very keen to make sure that this is a robust market and that the investments that we have made are done on a sound market basis -- investments we continue to make are as well.

So thank you very much for having this. It's great to all come here and talk about these things which are pretty critical to us. So in answer to your question do I have confidence in the indices -- yes we do. Not only do we have confidence in the indices in the sense that they are a true reflection of willing buyers and willing sellers transacting gas at a particular point in time, but we also have confidence in how those indices are set and the mechanisms.

We like the volatile nature, we like the fact that you allow individuals to assess the market fundamentals and look at that data set and decide how they want to act. If I take a chance just to characterize, perhaps the U.S. gas market with some of the gas markets around the world -- you really don't know how lucky you are.

Some of the problems that you have been talking around about individual liquidity issues for certain periods of time in certain indices -- yes they are important but if you characterize that and you compare it to something like Europe, you know Europe is a very significant gas market.

You have a fraction of the number of indices that you have in the U.S. A lot of those indices are nowhere near like as liquid as they are in the U.S. and they take a long time form liquidity. So just bear in mind that this is an amazing U.S. gas industry that you have developed here which has got massive debt, it has an enormous amount of people that are transacting gas here and we certainly have confidence in the indices that are produced, thank you.

MR. BRADLEY: Gregg Bradley, Market Monitoring from ISO New England. First off I want to give everybody here a little background on New England. New England runs the energy market for -- ISO New England runs the energy market for New England which is roughly an 8 billion dollar market, 4.1 billion dollars of that is in the energy market and the day ahead and real time energy market.

98% of our electricity that is bought and sold every day is also in our day ahead market so that's where the money is and that's where our concern is. Roughly 50% of our energy is actually produced by natural gas so we have a large interest in what the price of gas is every day.

And so it is a primary driver in the price of electricity in New England. So what do I do and what do I do with the indices? So I am in market monitoring first off since we do not buy or sell natural gas we also have no reporting responsibilities to ICE, Argus, or Platts or anybody else.

However, we are a user of the data. We purchase data from ICE and Argus for use in our reference levels. Reference levels that are used in market power mitigation and the energy market and that's to product against seller side market power.

So seller side market power is when a generator has market power and has their own incentive to raise the price in the market above competitive levels. So we need to create a reference level to figure out what a competitive offer should be for that generator every day.

To do that we need to know a lot of information some of which we get directly from the generator. We need to know all the physical and financial parameters of every generator in New England.

But what we don't know every day is the fuel price that they are paying so that's why we purchase data from ICE and from Argus to create a benchmark fuel price to use for every generator on the applicable pipeline in New England so we can calculate an estimate of what a competitive offer should be for every generator.

And whether we think the index is robust and liquid and captures the correct locational value we would say that on most days we have no problem with the index. There are a few days during the year where we lack confidence in what we are seeing but we can talk about that a little bit later.

MS. BERGLES: Good afternoon, Susan Bergles with the American Gas Association and thank you for the opportunity to participate in this Conference today. AGA represents more than 200 natural gas local distribution companies that are either state regulated or municipal utilities.

AGA members broadly support the principles of integrity, liquidity and transparency in natural price indices. We believe that reliable indices are critical to a well-functioning and competitive natural gas marketplace.

And understandably today I am not representing specific input from any specific member company but just basically providing you with a general overview based on member feedback that we have received.

So to the extent of LDC use of natural gas indices, you can probably have a good understanding of how we use them already but the members use mostly indexed price transactions for commercial transactions to purchase gas related to physical supplies and also they are referenced in physical hedging transactions.

Indices now to be referenced in state-approved LDC tasks, primarily with provisions related to in balances. They also may be in other LDC tariff provisions covering situations such as payment of gas or the failure to make a withdrawal from storage, an LDC storage facility under the terms of the LCD approved tariff.

And as you noted in the intro to this panel, state regulatory Commissions also use indices as benchmarks in prudence reviews of LDC natural gas purchases. With respect to confidence and liquidity concerns, the general feedback from AGA members is they are not expressing any significant concerns with respect to a lack of confidence or that natural gas indices don't sufficiently reflect the vocational value of natural gas at most points to permit decision-making.

So that's the general feedback that we receive from members on that.

MR. WAYNE: George Wayne, Kinder Morgan. I'm out in the west region pipeline group and let me just start by in general KMI overall we operate about 70,000 miles of natural gas pipeline connected about every growing natural resource play in the United States.

Kinder Morgan interstates and are not necessarily the FERC jurisdictional pipes, also buy and sell significant quantities of natural gas on a daily basis. Kinder Morgan inter-states and intrastates natural gas pipeline to storage facilities rely on few remaining publishers of price indices including Platts and trading data to price natural gas transportation and other transactions along with commodity purchase and sales transactions.

Published price indices really are embedded in all of the Kinder Morgan inter-state pipeline and FERC gas tariffs. Just for an example when I look at our 21 total pipeline and storage assets that are FERC jurisdictional and I just carve out the west region which is roughly 10 FERC jurisdictional pipes in the west region -- making a change just from price developer to another price developer we have -- it ripples through the organization.

And we have this last effort going from changing our tariffs, our capacity released indices, our OBA references this is quite an effort. For instance just in the west region OBA references we reference price indices 144 places. We have 10 tariffs that we have to refile and some of those immediately are filed when we change price indices.

The same thing with regards to capacity release transactions. With regards to the indices there's also NASBE requirements that requires that we support at least two price indices reference in our gas tariffs.

So any time we make a change we have to be in keeping with the NASBE standard. Also problematic to some degree is our OBA's in general don't have any language that necessarily says what to do when a particular price indices doesn't become available, so we have to use our own discretion in regards to that kind of activity.

So in general with regards to this particular consolidation and integration of this Platts agreement with ICE we feel -- I mean where we really land is we really feel that it reduces competition in the market for published price indices and ultimately it eliminates choices available to market participants for reliable and transparent pricing in the wholesale natural gas markets.

Kinder Morgan submits that in order to preserve transparency, transparency leads to liquidity which leads to price formation that is current available to natural gas participants, our feeling is ICE should continue to make ICES trading data available and as an independently published price index on the same basis that has been available prior to the Platt's price agreement. And also, this is maybe a little bit granular but I will say developing prices is different than making raw prices or data available.

And so if they are getting out of the price development business -- that's very different than just allowing for access to raw data.

MR. ALDERETE: Thank you for having me. I come from the California ISO, we are an independent electric system operator for balancing the Hub data in California and also for the expanded area of the western states of the United States under the umbrella of the energy umbrella's market.

We are not in the invest business. We don't trade any gas. We don't have any reporting requirements. We are end users of the gas indices. Actually we can post the indices but it is just not for the transparency of how it is used in our market.

How do we use the indices in our markets? We have an energy market we have a day ahead market from one day in advance. We have some markets in the real time that runs every 15 minutes and every 5 minutes and the objective is to minimize the overall cost.

Currently we have our fair share of gas-based units and for those we need to estimate two parts. The first one is that we have to determine the reference level bits -- you know, the system we call it default energy bits and these are bits that are used for market public mitigation so when we think of the market power mitigation these have mixed values as a reference to mitigate another substance.

The second part that we use the indices for is the caps that we impose on the stocked up cost and the new load cost, basically the costs. But this goes in two ways in the markets in terms of the cost. They can put down an approximate and we cap that up to 125% of that approximate cost.

If they opt for the rates to cost option they can go up to 150% of that cost and for that we actually do the monthly fixed prices. For the proxy cost option we use the next day gas indices. For the sake of making this stable and robust index in our market we actually use indices from four different vendors -- ICE, Platts, NGI and S&L and we get this blended index.

We believe that in -- the complications we may have from time to time happen actual with the timing of the indices because obviously we have to use this published index and even the timing of the publication and given the timing of the running of the markets we have these potential conflicts.

In terms of how effective they have to reflect the location and value -- well this outcome of commodity prices, what we use in our systems have actually more of regional fuel prices so once we take the commodity prices in the gas indices we add the costs of transportation and the miscellaneous cost. That would be more locational based to identify specifically what fuel regions prices should apply to the corresponding resources.

Why it is important for us to have robust and effective gas indices? Well at the end of the day these are the inputs that we use to determine what are the costs of the system --and based on that we make the determination of what is the optimal dispatch.

And based on that optimal dispatch the gas base results are going to affect carbon so that is going to consequently lead to how much gas they burn. So if you have a reflective gas index of the costs of the supplier you can expect that the dispatch that you are going to have in the system is going to be reflective or aligning with the gas price that we have in the system.

We are actually adding more flexibility for resources. We are going to go to the extent where they can more dynamically define what fuel records they should use. We collect and we use HOPS, in the western of the U.S. and this helps always our reference prices.

As I indicated earlier we added some additional studies to make sure that all the costs that are actually associated with delivering the gas is captured in our market.

MR. BENNETT: Hi I'm Lee Bennett. I'm

representing INGAA today. Interstate natural gas pipelines utilize these indexes in a number of ways. We use them as was pointed out earlier in balance cash-outs. We will use it for our penalty provisions. We will use it in PAL language, parking and lending.

In addition we have the ability to use it in pricing our services to determine what the value would be on any given day. That said, we do have alternatives and many pipelines choose to just follow ICE on the day to get more real time pricing versus relying on an after effect number.

And then -- so that's the main uses for the indices for the pipelines. Outside of that you had asked about whether the pipelines have a confidence in the indices, and I would say generally yeah.

And from being an operator of a pipeline we can tell when the market gets out of whack and so if a price is not being reflected correctly in an indices or at an index at a point, we will see it because what will end up happening is the market participants will recognize it and they will either leave more gas on our pipe or they will short us gas because they know that they will either be able to replace that gas at a lower cost than what we are going to pay them for it or that we will end up paying them more than they are going to be able to sell it for.

So we see it happening with our imbalances. If something does get out of whack and another example of where we see this type of thing and it is not dealing with indexes but we see it when the price of ethane changes and when ethane loses its value because we will end up seeing a much richer stream of gas on our pipe because the market is going to go where it is going to make the most money.

And so in the case of the ethane when selling of the ethane alone isn't the best market it gets re-injected into the pipes. So with that we would know if something was out of whack and we are not seeing it. So we have confidence using these indexes for the purposes discussed.

MR. LEEVANSCHAICK: So as a market monitoring unit our -- I guess I'll speak mostly from the standpoint of the New York ISO because I think in terms of the different markets we monitor, New York has the most challenging situation when it comes to the effects of the natural gas market conditions on the electric market and how the electric market is in terms of congestion patterns and incentives and vests and things like that is affected by the gas market.

You know, it is usually the case in these markets that other ISO's will find these sorts of similar challenges in future years but there is always one ISO that sort of hits it first and New York is among, you know, the first of the ISO's to sort of run into challenges associated with the gas market.

So New York uses, you know, 44% of its generation came from natural gas last year but it actually plays a much bigger role in terms of price formation in the electricity market. 68% of the time intervals in the market have a combined cycle unit on the margin, that's a gas-fired cycle unit.

And if you include other gas fired resources it is over 80%. And so natural gas certainly has a tremendous impact on price formation now. Just because of where New York is situated relative to shale gas and relative to places where they don't build pipelines lightly.

You know, New York has, you know, I think in the first quarter of this year the price in one part of the state for natural gas was more than twice the price in another part of the state and so most of the congestion patterns that we see are driven by congestion on the pipeline system.

And so also just to understand what is happening in the electric market you have to understand something about the gas market and to understand where there are incentives to build and maintain other new and existing units, all of those things are very much driven by people's outlook for the natural gas market and how that is going to affect the profitability of their asset.

I counted 9 different indices that we would use sort of on an ordinary basis to set reference levels for generators in New York so there is a lot of analysis that has to go into figuring out what's a good index or a combination of indices if we want to understand what's driving the costs of a particular generator.

Now where that becomes important is in a couple of ways. First I'll just say that there are market power mitigation measures both in the energy market and in the capacity market. In the energy market like the other gentleman from the ISO's here we have a system of offer capping generators when we think that there are some -- based on a set of programmatic thresholds that are designed to identify situations where a generator has local market power or market power more generally.

Now it is actually for the most part I don't think generators do have incentives to not act competitively but you know, to the extent where generators do have market power, the idea is that this offer capping scheme would limit their ability to raise either prices in the clearing prices in the electric market or limit the ability to get out of market payments for certain local reliability services.

So I think, you know, for the most part the market is I guess I'll say -- the units that have local market power, I mean they are really in a situation where they will, you know, offer whatever they are allowed to right, so a dollar increase in the gas price would be a dollar increase in what they are putting in their pocket in terms of the estimate that we have for their costs.

In other situations generators may rarely have market power or may rarely have an incentive to offer above marginal costs and you know, so even if we have an offer cap for a generator that has transient market power the reality is that they still face competition from you know, other generators, imports from other markets.

You know often times if one index is not reliable, you know, they are still competing against generators in their market who are taking gas off of places, other indices -- either generators in New York or it might be imports from New England, imports from New Jersey and Pennsylvania.

So there is a lot about the market that sort of augments the use of mitigation for offer capping and so it makes, I think -- in many ways its process is not as vulnerable to biased indices as you might be concerned about.

Now in the other cases where you would only have one supplier and you are in the situation where you just, you know, it's like trench warfare where you know, if you are discussing out you know, what's the appropriate number to us, you know, they have an incentive to really get every last cent.

And so that's a situation where a lot of scrutiny has to go into those numbers. To some extent it is going to be based on an index where there is some ability to look carefully at what we think the basis for the index is.

So I would say that there is a lot about the competitive market that makes the process less susceptible to bias or you know, manipulation of indices but it is still something that we are concerned about. I'd say -- I think you asked the question to what extent do you feel like we can rely on the indices and I would say I think 97% of the time it meets the needs for our purposes.

I think there's about 3% of the time where, you know, not as sure but you know, fortunately that's a small percentage of the total so we can get into more of the particulars later in the session.

MR. LOUW: David Louw with Macquarie Energy. So as a marketer I guess the short answer would be that we use most of the indices. Ultimately we provide our customers exits to markets, that's one of the key things that we do.

In doing that we tried both physical and financial gas with large counterparties on the financial side that's obviously mostly OTC swaps. We also hedge some of those transactions with financial futures that are clear transactions. We also provide risk management services to our clients and those are going to be a host of different products.

But all or many of those products rely on these indices. And to answer the other question yes I think we broadly are confident in the indices. There are a couple of instances where, you know, there are some things that happen at a specific location once in a while we might see something where there is a very thin amount of trades that made up a price or something might look out of whack at a particular location but broadly speaking the indices are reliable.

Historically they have been, today I think they are still. That being said I think there are definitely warning signs. The data that some of you spoke about this morning indicates that there is a decrease in kind of what I refer to as the reporting liquidity, once the underlying physical gas market remains very strong and you know we have tremendous supply of natural gas, especially in the U.S. so we know there is not a supply problem.

Demand is probably going down a little bit but it is changing at the same time which I think is one of the other challenges that we have to keep up with. We are talking here about price reporting where the current policy statement is more than 10 years old and was written in a time when there was a lot of uncertainty and there was, you know, clearly some issues in the industry.

We have matured since then so I know some of the folks this morning said that we don't really need to change that. I would agree as far as the principles that are there about how we report, the kind of mechanics of it. Those are good principles we should keep up with those, but you also need to look at what has changed.

And you know, we have gone through cycles of coal to gas switching, we are seeing more renewables coming online. On Monday the retail market in Mexico opens, that's price by and large on U.S. indices. We are going to see more LNG exports going forward -- those are all things that are going to bring more opportunities for and you know, frankly speaking it will bring opportunities for companies like ours as well.

And we need to make sure that we create the right environment for companies to embrace those opportunities and help provide the liquidity that we need. I was excited to hear Corey say that Cheniere is going to be price reporting. I think that's a great step for them and for the industry as a whole.

The more price reporters we have the more transactions make up these indices.

MR. BEDNARCZYK: Thank you, go ahead George.

MR. WAYNE: To circle back around again because I wanted to move on a little bit and let the other speakers get their first intro in but I want to circle back around with KMI, Kinder Morgan uses price indices.

Again it is pretty pervasive. I mean it is really the life blood, if you will, of our operation even though we don't necessarily taking the risk inherently and directly we certainly take a lot of that type of risk and we rely on those indices to help us understand and ultimately at the end of the day how to sell our transport.

Again, like the other speakers have mentioned cash-outs, operational purchases and sales, discounting transport, that's sort of a key area. I mean we look at price indices both spot and forward to help shape, you know our discounting policy.

Obviously we are looking at the value of market area, the value of supply area, obviously the spread across our pipes to kind of determine and understand when particularly where we should be discounting and maybe when we talk about expansions or brown field, green field type of projects we are looking at, you know, to helping develop and maybe negotiate a rate type of arrangement.

We also, like the others, imbalance management whether it is penalties, you know, looking at authorized and unauthorized over-run penalties and how to shape really send a market signal to our shippers to how to basically get back in bounds.

Another one that is maybe not as obvious is credit. We look at Reilly's price indices to determine credit capacity thresholds for PAL agreements, loan agreements -- how much additional collateral or support they should have when they transact with us.

And then accounting -- our accounting this FERC Order 581 requires our accounting group to abide by those principles and so when we make a change, locational or across the board as far as what price developer we are going to adopt, we have to make sure there are systems and all of that capture all of that to make that change really from front office, middle to back office -- capture all of those things.

So that's again it's pervasive that's how we use it all over. I think it is important to really draw out when we talk about our particular concerns as far as the Platts/ICE agreement and eliminating choices.

Where we are coming from with regards to that -- I looked back probably five years ago when we decided to move from Platts to ICE and we don't take that lightly in making that move because again I talked about all the OBA's, tariff references, capacity references, et cetera it is a big move to move from one price developer to another.

But after canvassing the market, talking to our customers we thought it was the most prudent move. Prudent because you know we saw the change in technology. We saw new products being developed -- now I am getting to renewables and not only prices and how that is important.

We feel like Platt's -- I mean ICE has a better platform to be able to consummate what it means when we talk about selling transport on an hourly basis -- and then of course the shale revolution and what's happening and how that shaped the movement in change and flows and pipeline across our particular network.

All that came down to was the reason why we again made that move is because it was immediate with regards to not just real time but if you are following how prices are traded at the end of the day, during the day, you understand where they settle and why they settle at the end of the day, okay.

So you can make that connection. It is easier to make that connection. It is easier to administer obviously, administer and trades on ICES, transactions on ICE, it is anonymous, it's unfiltered and at the end of the day it comes down to all of those things better transparency which creates confidence in the indices, the end of day price which leads to the GDD gas, the average price over the month and ultimately better price formation.

I think the third question has to be with locational value. Our view of how location value is maybe -- has it been impacted, has it been compromised? I would say in general like probably most of the speakers have talked about -- I don't believe it has been really compromised.

I mean you can talk about and I'll really reference this is -- I think it would be important to reference this because this is coming from the FCC 1994 white paper on markets 2000 report. And they defined transparency referring to the real time dissemination of information about prices, volume and trades.

And they state, "Liquidity is a function of a diverse number of buyers and sellers." Diverse -- meaning it is not the same, a large volume from 2 or 3 it's a good number of volumes from a diverse set of players that really creates that liquidity that you want and hopefully that price formation.

So again I want to get back to all of that in terms of locational value. When you look at the value of the transportation value of a pipeline, depending on where it is in its lifecycle -- initially we construct a maximum compensatory rate but as the marketplace evolves -- and I'll take for instance the Rockies, we have a lot of pipes that are not fully loaded.

I mean they are not fully subscribed, they don't flow full and so we have open capacity in which we need to look at these prices at a discount on a particular transportation.

So we look at -- there's a fundamental economic rule, the law of one price okay. The law of one prices states that the difference between market area and supply area to be the variable cost of transportation okay. The variables are fuel, commodity and ACA and then maybe some other things, but that's the floor, okay.

So we look to see where we are trading relative to the floor and if we are above the floor relative to what the spread may say minus the variables, well that's the additional intrinsic value that that pipeline might be able to offer -- it could be various reasons because we have a high pressure line which has a compressed ability to sell into a particular market area that is unique.

So again all of those things go into determining when we say locational values, locational value is sufficiently reflected. Again I believe it is and I take it lastly I sort of look at some recent market events, Aliso Canyon going now okay.

Now we have a hot, hot summer okay but when Aliso Canyon -- the reason why I say that it is still, the verdict is out whether the market signal that we have seen in the prices suggests that Aliso Canyon should be back in play.

But when Aliso Canyon went out and we looked in the forwards we said well what that means is we should see summer trading thread between Rockies and California below what we have seen it trading historically okay.

And the winter should be trading higher than where we have seen it historically but again that's exactly what we saw so again we felt like that information was reflected. Just this past week Arizona was 120 degrees. The LA basin was basically normal temperatures so we saw that the SO Cal border price was certainly reflecting that east of California was very, very hot in the need of additional gas to be able for gas powered generation where inside the City Gate, LA basin area -- because the degree days weren't as high the price was from City Gate to the border was pretty much trading at a little bit above average.

Again, those are just data points but you know I can probably, I certainly can draw at others but those are examples of again price signals which we think ultimately at the end of the day these price indices sending price signals that suggest that the locational values are reflecting inefficiency and other things.

MS. BURDICK: Thank you. I just have a follow-up question to all of you and I think we have heard that people feel pretty confident in the indices that they are seeing and they feel like they are reflecting the market prices and I was just wondering if we could hear a little bit about whether people feel like there are potential improvements to the value as reflected in those prices that could help with decision-making or any more information that could be helpful in providing better decision-making.

MR. GREENWOOD: Yeah if I could answer on that a little bit. I agree and we have probably listened to over 20 people now, in the first panel and in this panel and my sense is there is a considerable amount of agreement and consensus around the fact that there is high confidence in the indices -- that people do think this is a market that is functioning very well.

But there clearly are some question marks around some indices at some points, how many actual fixed price transactions are forming that index. Basically that evolves over time and it depends on the index.

I would like to build a little bit on what David said and I hope that it will answer your question as well. The interesting point is I don't think there will come a day when we see that there aren't many transactions that are forming and we have question marks about liquidity.

And I think you have to recognize the enormous amount of data that you have in this market and that's an incredible tool so that we actually know what prices are at different points, how many trades have been made, what the volumes are. There are lots of other tools that you can have in the marketplace that can tell you about volume flows and how price is revolving.

We are very, very data rich in this industry. What that does is it gives everybody who is acting in the industry the capability to understand what is happening at the different points in time that form that decision about how they want to trade that.

So you know, you asked a good question which is what do you need more? What I would say is we have an enormous amount now and the voluntary nature of being able to price report or not obviously allows people two things -- you have this fantastic set of data that you can go and use to understand what the risks and benefits are of trading in different ways at different points and you have the freedom to act.

So therefore if you don't like necessarily how an index is being formed you have the freedom to turn around and to fix past rates and you have the freedom to report those if you wish to support the index.

So I'll just say I think there is a very good consensus at the moment and it is also important to recognize that we have fantastic vision in upticks in terms of what is out there and how these indices are actually being formed.

MR. BEDNARCZYK: Guiellermo?

MR. ALDERETE: Thank you. I'm going to be quite ISO sensitive because obviously that is the end user perspective that we bring to the table. I indicated that earlier we are quite confident with the quality of the indices and how effective they are.

The complication that we have done recently has to do more with the timing of the indices. We rely on published index, next day indices and they come across different times along the day. And when you align that with the time frame of the energy market that is where something starts to conflict, let me tell you what I think is a wise approach.

So during the day you have all the indices coming out, they are published. At the end of the day we have these four indices, Platts, NGI, S&L and I missed one. But once we collected all these four indices we basically come up with a blended index. At the end of the day we have that blended index. Now, if you overlap that with the time frame of the day market.

The next morning we come back in in the morning and start to run the reactive market for the electric market. We start at 10 in the morning. At that point in time the most recent available published index is the one from the day before.

So you have to pick an index to render the day market for the electric market. That is the index that is available, that is the published index. What may happen is that naturally you have a one day lag. What happened more recently instead of going with the published index from the previous day is just prior to start running the day ahead market we go to the ICE system and get the estimated index.

It's an estimated index, it is not a published index and we have to run some measures to see how liquid at that point in time the index is and generally we can see that overnight when the trades are already done by the time that we pick that index and use it effectively for the market.

The limitation comes that it is an estimated index, it is not a published index and it is quite reflective of what potentially the final published index is going to be. And that is quite fine now for the reactive market it is going to capture what are the expected costs of the gas for next trading day that aligns with the market and the electric market.

The complication now comes once we clear the reactive market that is basically 1 P.M. Pacific Time.

There may be incremental changes based on the expectations of the suppliers. You may have to cut -- and what was not expected to be online or you may have to use some perceptions that expect to be online.

Now they have to reconcile that basically in the intra-day or same day timeframe. When you have to graft an index for that there is no published index that they can rely on to basically determines what are the expected costs.

This day the complication we have when we have to align the timeframes of the gas indices on location versus running the energy market and the electric side.

MR. BEDNARCZYK: David and then Corey.

MR. LOUW: Davie Louw, Macquarie Energy. Thank you guys -- I just wanted to, I mean I think you know, when we start talking about improvements there are a couple different -- there are some things that are relatively easy to do that I think and you know, some of those things the Commission can easily take action on.

Like last year Platts and ICE announced their deal to collaborate. One of the first things that comes to mind is that the current policy statement doesn't address the third-party data provider like ICE is going to be in this scenario, so that's something that potentially places marketers at risk that are price reporting and it potentially puts ICE at risk as well.

So I think, you know, for both parties or all the parties involved it would be good if we can get some clarity on that. I think about some discussions I have had with staff. I think everyone kind of agrees that's not an expected outcome but it is probably something we should do.

There was some question on the first panel this morning about, you know, should there be a requirement or an expectation of sorts that anyone who is price reporting should price report to all PRA's.

You know, as a marketing company I think I like the optionality of choosing who to price report to. We probably report to most of the PRA's today but probably not all of them. I think there's a concern that if there was any kind of mandate that you have to do this or that, there's always more risk of unintended consequences.

So that's an area that we have got to move carefully on as an industry if we want to move down that path. You know, definitely getting better transparency for the PRA's into transactional data -- that's a good thing.

You know I think there is probably fairly good agreement that when we are talking about next day gas there's a fair amount of liquidity, there's a lot of trading that takes place for the next day. My concern is more around bid week. And you know, there were a couple of references earlier today about there's a number of organizations that have left this market, either completely or even those that are still in the market are trading less fixed price, especially during bid week.

When I speak to other traders -- when I speak to the traders that I cover and my role as being compliance one of the things -- I'm kind of the internal tongue. I'm there to make sure that our guys are following the rules as well.

So we interact with them on a daily basis and pretty activity during bid week as well. And even there you hear across the board people are very hesitant to want to trade fixed price especially in bid week.

Orlando made a reference this morning that there are so few players now that you can easily become a significant part of an index as one company or even one individual trader and that imposes a lot of risk on the company.

So if part of the solution needs to be what do we do to get people back into either get companies to come back or new companies to enter that market or get companies to trade more fixed price, you know, that's kind of the fundamental piece that we have to address.

And you know I think for many years I think we have asked the question of enforcement of the Commission to come back and better define for us what manipulation is, specifically when we are talking -- here we are talking about related positions here.

So it is transacting in fixed price products and having some other related position whether in physical or financial markets. This is maybe an opportunity to change that question a little bit and say what can we do to expand the Safe Harbor to tell companies that are price reporters that if you are going to price report and if you follow certain rules and that's where you know, the staff can lay out what that set of rules needs to be, that that will provide us some Safe Harbor from some of these very costly and time consuming inquiries and investigations that we have to deal with.

That's something that I think will help companies and you know, market participants generally want to come back to the market and for those people that are in the market relying on these indices I think that will be really good for them to get more confidence in the indices to know that the people that are transacting in these markets and price reporting have strong and robust internal controls in place.

MR. BEDNARCZYK: Thank you.

MR. PINKSTON: So you're suggesting David just to be clear, an expansion of the Safe Harbor that's not just broader language -- it addresses behavior of traders during bid week, that type of thing?

MR. LOUW: Yes, absolutely.

MR. PINKSTON: Okay thanks.

MR. BEDNARCZYK: Corey?

MR. GRINDAL: Much like was talked about this morning when you are not the first one to talk on the panel some of your points are brought up. But I do want to expand on some of what David said as well as some of the things that were said this morning.

Going back to some of the statistics that Orlando threw out and the two gentlemen that you had speak this morning on the 552 report, you can clearly see that the larger participants in the market do make up a larger size of the reportable data.

And much like Paul brought up there is a large amount of data -- it's just a matter of how much of that data is actually being submitted to calculate the indexes?

I also agree that you shouldn't mandate anybody to do it but I do agree that there is a certain threshold where people should be encouraged to report. Because if you follow the old 90/10 adage you are probably going to have 90 or 80% of all the data come from 10 to 20% of all the market participants just because of the size of some of the larger participants -- and I include ourselves in that category.

The other thing that could be an improvement is the process is not broken, it's just a matter of everybody does it just a little bit different. To give ICE some kudos, during bid week one of the things that is very useful is their daily bid week report because they summarize and do an average of everything that is traded that day on the platform and I know that personally having traded as well as dealing with others -- and a lot of people will reference that in the second day of bid week to start where they should start bidding or offering depending on their position in the market.

Having a Platts or an NGI do something like that I think would also be beneficial. Yes, it's cost to the actual -- I think its cost to the actual PRA but to the extent the data is taken on a daily basis during bid week instead of just averaging over the three days, I think that is something that could be improved upon.

But again I do want to state that the process in itself is not broken. And then David I think really kind of hit what I think the main thing around price reporting is -- just because it is some of the debate that we have internally within the Cheniere organization is the Safe Harbor rules.

I do think that it needs some type of expansion and I think it does need some type of assurances to the extent that you are going to price report, that there is a thought out there that if you do price report you are that much more open to some type of investigation by the Office of Oversight.

So I do think that some of those rules do need to be looked at and this is probably not something that is going to be decided today, but something that should be looked at in terms of the expansion of the Safe Harbor provisions.

Because I know that for us internally as well as having been in the business for a long time, it is probably the main thing that has people not report their data.

MR. BEDNARCZYK: Thank you, Paul?

MS. BURDICK: Actually I just want to ask a quick follow-up question because it is related to what he said. On the Safe Harbor when you say that's the number one reason I think we have made a distinction now between what David's calling for which is like an extension of the Safe Harbor to include behavior.

And then you are saying price reporting. Are you saying that there's a fear of people being open to like the auditing process and the misreporting? Do you think that fear is greater or about the same or is it the same thing as --

MR. GRINDAL: I think it's basically the same thing.

MS. BURDICK: Okay.

MR. GRINDAL: People do not want to report data for fear -- whether it is real or not, but a perceived fear that somehow or another there is a greater liability or that they are then opening themselves up to more liability by being a price reporter.

MR. GREENWOOD: Yeah if I can build on that I think it is two-fold. I think one is people are not necessarily price reporting because they have confidence in the indices and they think it is working very well therefore they don't really see the need to do so, they are not compelled to do so and I believe if they would feel they were compelled to do so they would do so.

But I completely support what Corey and what David have been saying that it is about the regulatory risk which people feel they are going to be running if they price report. That might be a perception, that might be a reality but there is a believe that you know, inadvertent errors which are made through no fault of anybody and certainly in no way intentional, can lead to very onerous investigations which can then lead to a certain amount of reputational risk, time and effort.

So what I would say to advance the question if the question asked is how do you get more people to price report what they are doing in the market and also encourage them to do fixed price transactions and kind of feed the indices and form them more fully then you need to look long and hard at what is that regulatory risk.

And the more you can make it low cost or you can make it easy and lower the risk, then the more likely you are to entice people to voluntarily price report and certainly that is something that we would recommend some more consideration is given to.

MR. BEDNARCZYK: Susan?

MS. BERGLES: Yeah so I think I am going to follow-up on what was discussed in the first panel and also what has been under discussion with this panel on the Safe Harbor. AGA's membership reflects companies that both report to PRA's and those that do not report.

Reporting members have indicated to us that they have weighed the cost and risk and they thought it was important to contribute to liquidity. Non-reporting members have indicated the main reasons behind those decisions were costs associated with internal systems and regulatory risk.

More specific concerns to just a little bit more of a dive would be just how different reporting systems among LDC's under a single corporate parent, concerns around how data would be embedded internally to ensure compliance, time and cost of the middle office review, et cetera.

Some members also as we heard today earlier felt that the need to report transactions was already being accommodated by the inclusion of the information regarding ICE transactions by the PRA's.

But the good news here is that some of the non-reporting members have indicated with no guarantees but that they would go back and re-evaluate their decision on reporting if the Safe Harbor were strengthened in some manner.

So we are echoing a lot of the discussion that you have been hearing today which is we would like to see some discussion surrounding with other industry members and market participants on how to further strengthen the Safe Harbor provisions to promote the continuation of voluntary reporting.

MR. BEDNARCZYK: Thank you.

MS. BURDICK: Since Paul stole my thunder from the third panel I am going to just ask a question here. I may repeat it in the third panel but I did want to talk a little bit David on your point with the Safe Harbor. I think in the first panel we also talked about reasons why people may have left the market and may not be trading fixed price for example, greater regulations on the financial side and other -- the profits and volatility in the market is just not there.

It is expensive to get involved in the business without much return and so I was just wondering if we were to improve the Safe Harbor to you know, provide them sort of protection for behavior as well, how much more -- there's a difference again between the reporting and new traders coming into the market so I was just wondering if you could speak a little bit about whether how much of that do you think would be new trading in the market, versus more people just reporting?

MR. LOUW: That's obviously a very hard question to answer definitively.

MS. BURDICK: I like to ask hard questions.

MR. LOUW: You know speaking to people in the market, you know, and we heard this morning that 9 out of the 10 companies that have seen the greatest increase in activity are not currently price reporting. So even though those aren't necessarily new entrants I think those would probably be the first companies that I would expect would be much more inclined to start reporting.

So that would bring more transparency if those companies were -- they are still really in the market it is just enticing them to now start reporting. So I think that's the first part of that answer. I think there are genuinely though companies that are looking at either getting back into the market and there are other new entrants that we will see coming back into the market as well.

And while $3.00 gas is not particularly attractive, the forward curves are starting to move a little bit and you know I go back to you know we have got all these exciting things happening which is going to lead to more volatility which, you know, that brings opportunity for people to come into the marketplace.

But you have got to be able to cap -- it's where the cost benefit analysis for anyone that's going to try to come into this market. And the more of those regulatory uncertainties and regulatory costs there are it just -- that's more downside and it is just more cost that they have to consider so the more of those things we can help eliminate the easier it will be for these companies to get into our gas market. Does that answer?

MS. BURDICK: Yeah I guess. The only other follow-up I would have is where would you rank if you had to rank what would be keeping people out of the market who have left the market, where would you put the regulatory risk associated with the price reporting as compared to other regulatory requirements like Dodd Frank and Basel 3 and the volatility in the market or the lack of volatility in the market?

Could I ask you another hard question to try to do that?

MR. LOUW: I mean I think those -- they rank fairly evenly. It's not that one is really more important than the other. I mean they are all things like when you talk about Basel 3 which is really just the cost of capital, those are non-quantities -- that's a very black and white analysis, either you can or you can't make it work.

But I think there are people who are subject to that today that are making it work. So you know, I don't think that's an absolute if you are subject to stringent capital requirements that you can't survive in this market.

Buy definitely, you know, regulatory risk is one of the top areas and because for two key reasons -- one, the reputational risk to institutions is very high and two, it carries a lot of uncertainty. So unlike capital requirements which are black and white, regulatory risk and regulatory uncertainty is something which you really don't know -- you don't know if you are coming into this market is my worst case outcome that I'm going to be subject to a million dollar fine or is it a 400 million dollar fine?

I mean that's kind of the numbers that when you are sitting on the outside you are seeing those ranges of penalties on firms. Now there is obviously a lot that goes into that but it is -- that's a very big range of uncertainty that companies have to face.

MR. PINKSTON: Just a quick follow-up. You obviously can't answer this on the spot but what would some type of behavior Safe Harbor -- have you heard people speculate what they have in mind with that?

MR. LOUW: That I think is going to take a little bit more work Tom.

MS. BURDICK: You can decide that by Panel 3.

MR. BEDNARCZYK: You have a reprieve for now. We'll go Lee, Pallas and then George.

MR. BENNETT: Thank you. We have been talking about encouraging folks to report and I guess I just wanted to suggest that the focus be on those whose business is the buying and selling of gas or the buying or selling of gas and I relate that back to who I'm representing with INGAA.

And that is -- our primary business is not buying and selling gas. Our primary business is moving the gas from point A to point B so when we are buying gas we are doing so to, as we talked about, cash out an imbalance or something that occurred during our operations.

So I would suggest that you wouldn't want to focus on the pipelines that the amount of trades that are occurring there, that's not a regular event for us. So with that in mind I would focus on those that are regularly doing it -- doing it on a day-in and day-out basis and those would be the ones you would want reporting.

MR. BEDNARCZYK: To the extent that your pipelines actually buy and sell natural gas for operational needs do you guys report transactions to the extent they are fixed price?

MR. BENNETT: When we are buying and selling gas we do so through many different ways but through RFP's. We won't report unless it is above the what -- 2.2 BCF and then we will report through the form.

But as far as reporting to the index providers we don't report. But again I would suggest that that's not the group you would want to focus on where the volumes that are being done as well as the fact that it is a sporadic event would tell me that's not what you want.

MR. BEDNARCZYK: Thank you, Pallas?

MR. LEEVANSCHAICK: So I guess I wanted to pursue a different thread. We don't report because we are more of a consumer of the information so this might seem like a non-secular, after the series of comments.

But before when I was talking about it I think because of how we use the information in conjunction with other information because we have the ability to talk to electric generators and augment some of the publically-available information with some of that private information -- for the most part I think we are pretty happy with our access to information.

But the 3% of the time where we have concerns deal with a couple of really challenging winter-time situations. So like, you know, I think the most frustrating thing would be like weekends so you have a three-day strip or a four-day strip because it seems like cold weather is correlated with three-day weekends.

So you know we will be coming into a weekend where on Friday the gas price is $5.00 at a particular location. The weekend strip is $15.00 and we can see from looking at weather data that on Saturday there is no reason to think that the price should be higher than $5.00 so you are really dealing with a situation where the price of gas is varying wildly over the weekend and the information that is available is astoundingly limited.

I mean it would be like if you wanted to rent a hotel room and no hotel room in the city was willing to rent you just one night. Every hotel only does 3 night stays and so you know, it just means that if there is already some of the information can be sketchy from the indices or have limited reporting, you know, the granularity of the information on a 3 or 4 day strip is really a problem.

So that requires even more of that sort of augmentation I was talking about and ultimately is going to, you know, wind up with some kind of imprecision that ultimately affects, you know, electric clearing prices or payments.

MR. BEDNARCZYK: George?

MR. WAYNE: I'm sorry with regards to the suggestions around improvements one of the areas certainly I think I addressed this before but maintaining or increasing the number of price developers that are out there.

I mean at some point you get fragmented so I'm not saying a lot but then you know, more integrity or prices that are developed that are diverse is helpful to help you triangulate to understand and pick one versus the other.

And to say you get a feeling of comfort -- is that a fair price? You know, you have several diverse price developers and when I say diverse sort of where we are now when you look at, you know, Platts is more of a one stop shopping in terms of consulting, research news and price developer where ICE is purely more of a price developer.

And then you have NGI who is sort of news and price developer but you can see they are all a little unique and obviously that creates a different maybe market perspective, particularly when you develop the news from that price you develop you may give a different slant than you might see otherwise.

I think keeping that diversity is important to be able to really for lack of a better word, that dog hunt so to speak. And my understanding is that would really reflect a fair price.

Another one that hasn't really been brought up is the process of adding and deleting pricing points. I know that like for instance, ICE I know actually has a process, I think it is two or three weeks ahead of time that they plan on adding or deleting the pricing point in the system that you can call them up and bilaterally vet that.

That's important because there has been times when we have had issue with them adding a pricing point that literally may be a market maker on the other side of the flange okay where two pipelines interconnect but literally just on the other side of the flange there's another pricing point that literally, physically there is no difference and that can devalue upstream or downstream that pipe, okay.

So again, making that transparent and keeping in the process of when we decide to add and delete points. Another one is access to history. It's important to be able to have access to history to understand trends but in particularly the back office stuff.

When we look at -- you know it doesn't happen often, but we have to reconcile with our customer invoices okay and sometimes there is a trade which goes into that monthly index and sometimes there are trades missing. You have to be able to either triangulate, bootstrap or reference another price developer to add into that particular set of prices to become the invoice in which the customer is agreeable to.

Again you need that history to be able to do that and have access to the history. And when I say history I'm talking about developed history and I talked about that before, not raw data. There's a difference between raw data and actual history that has been developed and put out there in an archive.

And I think there are FERC requirements regarding how much history you should hold depending on what kind of transaction it is. I think it is three to five years in some cases that you need to hold going back on a rate case or other things. You have to be able to bring that up -- the archives to be able to reconcile issues in a rate case.

MR. PINKSTON: Do you find much problem with divergence among the indices or disputes over different values for the same point or the same relative point depending on if it is a publisher or ICE, or among the publishers?

MR. WAYNE: I don't want to say that I see a bias one way or the other but I certainly see differences. I can see sometimes you see, you know, depending on usually there's an event but it could be -- our flag goes up when they have been trading at tenth of a cents difference between each other, NGI or Platts or ICE and suddenly there is 3 or 4 cents difference than each other and that's when we look at investigating, you know, what happened, what's driving the difference?

Again it helps to be able to triangulate and get comfortable if that difference is real or if it was something else.

MR. PINKSTON: Thanks.

MR. BEDNARCZYK: Alright switching gears a little bit here back to liquidity. To the extent that natural gas indices are liquid and they are being referenced either in your tariff or ISO for a bunch of mitigations, what extent does the illiquidity impact those tariff provisions or your ability to mitigate market power?

MR. BRADLEY: Gregg from ISO New England. So I think I'll piggy-back on what Guiellermo and Pallas have said already about the information we have and when we have it and then the concern that we have.

So like Guiellermo said they had market closes while the gas market was still trading. So we have to use a price from the previous day for natural gas as a benchmark for what's going to be a value for the next day.

So right there you already have a gas price that's one day sale which is fine most days. Day over day there's not a lot of chance in the value of gas. A good example is two weeks ago Tennessee traded a difference of about 6% day over day, so it increased 6% which was okay in our eyes because our mitigation thresholds are set up such that if someone is actually offering the marginal cost they can still do that.

If the price of gas increases 6% our thresholds are larger than that and they shouldn't fear mitigation. When it matters to us is on a few days mainly in the winter time where we actually see the price of gas double day over day.

It doesn't happen often -- actually you would have to really go back to 2014 in New England to see the most cases, I think it happened 15 times that winter. But if you look at a day -- January 17th of 2014 the price of gas was $6.50.

So that's what we are using the next day going into the day ahead market. The price that traded on that next day was actually $18.00. So it was about three times what the value of gas we had in New England for a reference level.

So right there we could be mitigating somewhat to a price that doesn't reflect what their marginal cost is, that's a big concern for us. Mitigation isn't supposed to be punitive. We are really supposed to detect market power and put the people back to their costs.

We don't want people to lose money. We are really just trying to protect the energy market. So for those instances, we actually developed a work around kind of like what Guiellermo said but we actually allow participants to tell us what their expectation of gas is.

So mainly in the winter time you are going to see a whole lot of generators come through and say A -- your index of $6.00 doesn't make any sense for me. ICE is trading $18.00 - $20.00. Can you use this price to set my reference level instead and here's my documentation?

So we actually accept that and we try to represent their costs accurately. But those are the biggest concerns for us --is on those days we lack confidence that the index that we are using represents the value of gas for the next day.

So I'm not necessarily saying that what's trading on ICE is illiquid or robust it is just a timing issue for us.

MR. BEDNARCZYK: Thank you, Guiellermo?

MR. ALDERETE: Thank you, you have already said the key points so I would just like to reiterate and put some flavor. I think ISO's are in the same position of this timing complication and largely our concern. The concern is first that we don't have an actual gas index, obviously there are not going to be material links in the energy market.

And that implies that potentially suppliers might not recover all of the cost and that is a big concern because you are asking them to do a certain way, there's an expectation there they should be able to recover fully day costs.

Now for practical purposes we need an index. At the end of the day we have to run the market and we do have an index. How liquid -- how reflective that index is going to be is part of a discussion.

So by the fact that we are using all of the potential indices out there and this blended index, we have some confidence that that is the best we can do. Now how we can reconcile this timing issue -- it seems like what Gregg explained we are trying to come as close as possible to the time where the market is strapped.

That somehow diminishes the concern for the reactive market and because it is going to be as close as possible. The original concern that we would have was the fact that you can miss the spikes. The dynamics and the timing of the gas market is going to be in such a way that the energy market cannot capture that spike and we saw that in 2014.

Also a similar effect the way it was running with an index of a differential of $3 - $4 and the price has actually spiked three or four times. That was not reflected in the reactive market and the energy market. What that meant is that now we have to dispatch in an efficient way because we are dispatching them in a very low index when in reality they are incurring this high cost.

I think that is the main concern. I know the other concern with the respect to the reference level of bids is that if it happens that they are going to be mitigated, they need to mitigate it closer to the respective cost and for that you really need to have the gas index reflecting the reality what they have to recall that.

And when we move now into the real time the complications are kind of the same. Now if that market changes how can you introduce that change through the index such that the energy market recognizes that spike that market conditions changed?

That is the other complication I would have you are in intra-day trades or the same day trades -- what index do you use? If you have to be running your reactive market every 15 minutes, every 5 minutes and you really want the resources to realize what are the new market conditions? What mechanisms, what index you can actually use to reflect this dynamic change?

That is the complication that we may run into. Now for practical purposes prices have been relatively stable. The volatility that was in the system somewhere in the range of $3.00 plus or minus a fraction of a dollar is that going to be a high risk? 99% of the time it is not going to be except when there is a spike.

These are really the practical implications of having this timing concern.

MR. BEDNARCZYK: Thank you, go ahead Pallas.

MR. LEEVANSCHAICK: Thanks, initially when you asked about this I was thinking you were asking if specific indices were named in the tariff, you know this index A, B, C versus X,Y,Z.

There's nothing like that in every case where an index is used there is discretion in the process to use one that is deemed to be appropriate. So if that is something that you are asking about then if it wasn't then you know, then you have an answer.

I also would echo a lot of the timing concerns that these guys had with the offer capping process. You know if the idea is to use natural gas indexes as the basis for estimating somebody's cost as a competitive benchmark for their offers and you know, the timing is important because the gas is always traded in certain blocks that the timing is critical.

Now they don't line up very well with the electric market. In the case of say NISO the bid submission to the day ahead option occurs after the beginning of the gas trading day so there is an opportunity even though the daily prices and the daily price assessment hasn't been posted at that point there is still an ability to look at trading early in the day, see where that is and use that as the basis for these cost estimates.

But in the NISO case you know, offers have to be submitted by 5 a.m. so there is obviously no day ahead market before 5 a.m. and so like New England what's being used is essentially the index from the previous day for the wrong day, you know, it is one day earlier than it should be.

And then that is sort of augmented by generators calling up not wanting to be offer capped below their costs. You know they call in and they provide some kind of basis for an adjustment and then usually that's granted on a sort of trust but verified basis.

And that generally prevents them from being offer capped to a level that is inappropriately low. So when the market is going up you know that essentially addresses that concern. When the market is coming down, you know, we don't get a lot of people who are calling asking for a downward adjustment.

But what's interesting is we also don't see that everybody is offering based on the previous day's gas price. We see plenty of market participants short of responding to competitive incentives and they are offering at where we think the market is.

So even though that's, you know, there's clearly an opportunity there for people to push up electric prices, we don't find, you know, that that generally is going on. I think the exception would be like I was talking about before, when there is local market power if you have a single generator there is no competitive pressure that is going to make that generator drop its offer to something that it knows is worth what the gas market is trading at because there is no competitive pressure.

But you know fortunately that's a problem with a fairly limited scope.

MR. BEDNARCZYK: So just to clarify and recap what I'm hearing from this -- from the RTO's, the market monitors the main concern is over timing and less so the amount of trades that are forming that index even though it is a day old?

MR. LEEVANSCHAICK: I mean I think the number of trades is in general, it is acceptable. But it depends a lot on which index and what the circumstances are and to what extent that index could be benchmarked against another index. So that's a very sort of location-specific answer.

So there are cases where it probably is too thinly traded and where the number we have is, you know, allows some, you know -- a little extra you know, sweetener for the generator.

MR. BEDNARCZYK: Thank you. David?

MR. LOUW: I just maybe had a follow-up question. I just wanted to confirm is that -- are you guys using gas daily indices for all of these purposes? I don't think you are using monthly indices?

MR. LEEVANSCHAICK: Yes, they would all be next day prices.

MR. ALDERETE: We actually have an exception -- we, for the many that use next day prices, daily prices, but there is an option where they can opt to use monthly future prices.

MR. BEDNARCZYK: Go ahead Gregg.

MR. BRADLEY: We do use the next day price every day. We never use the monthly prices and to your point of are we mostly concerned with the timing versus liquidity and volume -- we are definitely concerned about timing.

Volume-wise we have seen a tail off in recent years since 2011. The volume is still substantial enough where we think that the index represents the correct locational value. There are certainly a few days during the year where a few trades end up setting the index price.

But on average we don't have an issue with it.

MR. BEDNARCZYK: Thank you. So recognizing that the use of natural gas indices and FERC tariffs is different than the commercial transactions that some of you guys use them for, the Commission established the liquidity thresholds that were talked about in the staff presentation earlier so that certain indices can be referenced in FERC jurisdictional tariffs.

Do those thresholds actually really capture the minimum liquidity thresholds over an appropriate period of time and should the liquidity of those indices that are referenced in the INGAA tariffs or Kinder Morgan or ISO New England's tariffs be assessed over time?

MR. WAYNE: In ours, we certainly, when we decide to change from a particular index developer to another index developer obviously FERC has guidelines as far as liquidity tests and we go the extra yard of, you know, point by point going beyond that we look at statistical significance not to get into the particulars but you know, the statistical test like variance of means, variance of volatility around the mean making sure that those are significant and are not -- when we move from an index developer to an index developer.

With regards to again I'll get back to regards to liquidity we just want to make sure that we understand who are the -- on any particular day or any particular month, what went into that particular set of prices or transactions and trying to assess those to see if there is any amount of influence that might be perceived.

But what the important part is -- at the end as I stated there is we feel a diverse number of index developers that we can reconcile between -- triangulate between and get comfortable when we might see a small liquidity shift on any given day or across time.

But in general because we have the diverse number of index developers as we stand right now we haven't seen a particular issue or have a particular issue.

MR. BEDNARCZYK: So to clarify you do actively track the number of trades that go on on the indices that are referenced in Kinder Morgan's tariffs?

MR. WAYNE: Yes, we have a process probably I look at them on a quarterly basis.

MR. BEDNARCZYK: Thank you, Lee?

MR. BENNETT: From our perspective the standards set forth by the Commission remain sufficient. It is in the best interest of the pipelines as well as our shippers that the tariffs work as intended. That said, interstate pipelines have established other ways to mitigate the impact of these indices such as imbalance trading among our shippers so that you end up with a lower volume being impacted by those indices.

And as far as the point itself if a point was to become illiquid it would be something that would happen over time. It is not something -- as far as the point itself, a given day may be squirrling but the question is really over time do they meet the standards.

And if it were to become illiquid it would be over time. The pipelines would have an opportunity to see that this was occurring and we wouldn't necessarily know it. I understand what George is saying as far as his tracking it but we would know it by other means other than just looking at the indices to see what's going on.

Our shippers will be talking to us and explaining to us that there are issues and concerns. We will see operational changes occurring on our pipeline so we will know that something is going on which will spur us to take a look at it versus having to review it all the time.

And at that point in time that's when we would work with our shippers to -- even though there's a great deal of work involved as George was explaining, in making changes to our tariffs, that's when we would work with our shippers to determine what is the point that is going to be more realistic for that market or better used to cover that market?

So and we would develop the alternative point and then we would follow our tariffs with the Commission for approval for the alternative point.

MR. BEDNARCZYK: Just a follow-up question. I know George has talked to us a lot about what he perceives as cost of changing indices. Does INGAA see similar costs associated with changing a reference to an indice?

MR. BENNETT: I'm going to plead the 5th here. I actually don't know all the costs involved. I'm not in the regulatory area so that would be difficult for me to say. I do know that there is a great deal of work that goes into it.

MR. BEDNARCZYK: Burdens -- I should clarify by not dollars but he's talking about things that he would have to modify or system.

MR. BENNETT: Like I say again it would be very difficult for me to say. I would say that I do know that the systems do as George was pointing out, are transaction systems, are all referring to one index versus another. I can't tell you whether it is actually pulling data from that or whether that's an input so that would be difficult.

And in reality I think it would be based upon each individual pipeline as each individual pipeline has their system set up differently. So you know, I don't know that I can tell you what the cost would be.

MR. BEDNARCZYK: Thank you, that's fair. David?

MR. LOUW: My comments may be a little bit broader, you know, obviously not a pipeline so the specific requirement doesn't apply. But at the same time if you look at the context of the thresholds my question is, is this something that should maybe be revisited in the light of what -- maybe not thresholds but triggers should be for all of these pricing locations.

Because as users and consumers of these indices we kind of look to them as you know, FERC basically regulates them and has some oversight over these indices so there is a general expectation that you have some oversight over that whole process.

So maybe we need rather than these very pointed solutions just for pipelines or ISO's is there something where there is a broader, some trigger level -- if an index doesn't get used enough or it doesn't get traded enough that for a certain period of time that there is an analysis that needs to be done and presented back to your staff and the industry by the relevant PRA?

You would just get more robust indices overall and then maybe the pipelines don't have to be burdened with you know, their specific requirements to track how many trades were reported to a specific index that they might be pricing against.

MR. BEDNARCZYK: Thank you, Gregg?

MR. BRADLEY: So we have a number of provisions in our tariff that reference specific indices and we evaluate whether we need to use these indices like they said over time.

We actually just came across this in the last year and a half when ICE put out a new product they created the Algonquin Non-G index so we saw a shift in the trading from the normal City Gate to Algonquin Non-G.

And this Algonquin/City Gate price that was referenced in our tariff was no longer applicable and didn't reflect the value of gas in New England and wasn't setting the thresholds in our tariff appropriately.

So we do re-evaluate them over time once we notice that there is a shift in trading.

MR. BEDNARCZYK: Thank you, Susan?

MS. BERGLES: Yeah I just wanted to say on this one that prior to the supplement on those at the Technical Conference AGA had not heard from any members expressing concerns about the indices looked at -- indices that were put in for jurisdictional tariffs.

After the notice we surveyed members on this item and we also didn't get any concerns expressed in particular on this issue. The members do believe that as shippers on these systems that either if they do see a problem at one of the INGAA's points that is referenced in the tariff, they can either raise it with the pipeline.

The pipeline itself can identify and raise it with the shippers and our expectation would be as Lee said that we would work together with the pipeline to discuss if there is an issue and determine what point would be a better point to use and what tariff changes might be necessary.

MR. BEDNARCZYK: Thank you, George?

MR. WAYNE: Yeah I just wanted to quickly qualify my statement about -- because I am representing all of Kinder Morgan today when I am speaking specifically about our process that was really referring to west region because obviously we have the mid-stream business, terminal business, tanker business, other things that I wasn't referring to their process as far as tracking these indices.

I just know in the west region we have a pretty well automated -- we are able to again assess those and we assess those periodically. The next day anecdotally we also are probably in the same vein forward markets, forward market points. We probably would have more consternation maybe on forward market points of liquidity and their reliability how far out, you know on the curb do you go to get comfortable that it is representative. We look at that anecdotally also.

MR. PINKSTON: I guess I will follow-up. It sounds like there is not a widespread concern about the indices embedded in the jurisdictional tariffs. Are there any specific concerns and you would probably have to go back several years to say during polar vortex-type conditions because often when we reach out to the market then marketers will point to the critical day provisions and the multiples of gas daily finds as to why they are buying so frantically.

I don't know if you had concerns for the marketplace then about particular indices with regards to penalties, cash-out penalties during critical days?

MR. WAYNE: I haven't. I mean I'm not as familiar with the polar vortex but other market events particularly out west that have been impacting the prices. We seem to -- I guess we haven't seen an outright issue.

MR. BEDNARSCZYK: Lee?

MR. BENNETT: I guess what I would say is as far as the polar vortex and all of that, that's the reason we need the indices in there and we need them reflecting the correct prices because that's what is going to provide the correct market signal is that as well as the charges above that number.

That number doesn't provide the correct incentive on the coldest day of the year we may have people that are not from on our system pulling gas off of our system and causing problems. So we do need them to be accurate. That said I believe that they are.

While I've got the floor one other thing I wanted to bring up and it is kind of about what we were talking about is that pipelines have an incentive for the indexes to be pricing correctly because our customers are basing what they are doing based upon those indexes or indices.

And there are times where when new constraints come into play that pricing points -- even though they are stating what the value is at a given point it is not necessarily reflective of all the area that is currently trading at that point.

And the example that I will give you is on TECO system where there was the TECO pool and prior to all of the increase in the Marcellus production there wasn't a problem because the gas that was coming across could make it to the TECO pool where the gas is being produced.

Once there became a constraint and TECO could no longer move all of that gas to the pool, the gas in the production area actually had downward pressure on it because it couldn't all get out and so it was actually trading at a lower price than the TECO pool.

And what TECO did at that point in time is went to Platts, explained the situation and worked with Platts to get the TECO non-IPP point put in place. So that's not a question of illiquidity it's just a question of the price wasn't reflective of the market but pipelines do have the incentive to keep an eye on these things and to make changes as necessary.

MR. PINKSTON: Thanks that's a good answer. Was it a difficult process to get the differentiation that the TECO pool with Platts?

MR. BENNETT: I wasn't first-hand involved but the people that I was speaking with did not sound like it was a difficult process that we needed to explain the situation and that Platts worked with us to develop the new point.

MR. WAYNE: I think I spoke to this before, I got a similar response with regards to changing ICE points and we went through a bilateral process to negotiate whether we felt like that should be added or not. So I think the process was there but I just hope going forward we continue to have that open dialogue and process and make all of that transparent when those changes occur.

MR. PINKSTON: Alright thank you.

MS. BURDICK: I think I'll be the last question but this morning we spoke a little bit about hedging and risk management given some changes we have seen and traded volumes and futures products and I was just wondering how current market trends, either index reporting or in the financial side have changed your hedging strategies if that has happened?

And if you could speak a little bit to how that has imposed potential costs on your businesses -- if anyone wants to answer the question.

MR. BENNETT: I'm not certain that this is exactly what you are looking for but when you are talking financial -- because when I think of index I'm thinking about today. What's happening today, what happened yesterday et cetera versus looking into the forwards -- because somebody brought up earlier about the fact that as you get further out in time it becomes more and more and more illiquid.

And if that is what you were getting at I can definitely explain how it impacts our business -- or at least from the storage side of things.

MS. BURDICK: Sure.

MR. BENNETT: And that is when we are working with our customers on what the value of that storage is there are several things that come into play on that. One of which is the bid as spread and the further you go out in time the wider that bid as spread is going to be because it becomes more and more illiquid and that comes right off the value of it.

In addition to that many of our customers want to be able to hedge off their risk and so when they are working with us instead of being able to do a three year contract with us now we are starting to see shorter term contracts because they don't have the ability to hedge off the longer terms.

So that's impacting us if you look at it from a cost impact it is shorter term contracts and if they go longer term it is actually reduced rates. Did that go where you were looking for?

MR. WAYNE: Just to follow-up with the gentleman from TransCanada with regards to that forward markets and storage. I agree with everything he is saying but just to put a point to it as we are going forward, particularly when you look at west and obviously the renewable trends, the RPS standards are growing.

Renewables -- I mean storage is very important to back-stopping renewables, whether it is below ground storage like traditional storage, storage, or reservoir or aquifer, but core storage and a lot of unutilized pipeline capacity would have storage value.

I think everyone of our pipes out west in particular out west and a lot of our other pipes that have flat capacity we have interrupted PAL service. So again in the face of growing renewables that need is ever growing so everything -- every point that the person from TransCanada made is spot on with its importance.

MR. GRINDAL: So I think your question was very broad so I am going to give you a very broad answer. But the indices don't necessarily affect the way we hedge products that we use to hedge. Most of our exposure is relatively short-term in nature, less than months more so than the 3 year, 6 year strips which really at the end of the day have no bearing on the impacts of what we are talking about today in terms of price formation.

I think a lot of those things have more to do with the NOPR that was released by the fed here about the counterparties that are involved in the financial business. From the broad question it is kind of a broad answer.

If I can I do want to clarify one thing about my comments about the Safe Harbor. We spent a lot of time and a lot of effort, a lot of money making sure that when we do reports that we do comply with the Safe Harbor.

I think it's more of a perception and I hope that is what you kind of saw from my previous response that it is a perception of why people don't necessarily give their data into the price reporting agencies.

So anyway I am happy to answer more questions if you want to get more specific. From a broad answer, I don't think that any of our hedging activities -- financial hedging activity is any way compromises or we doubt anything that we do because of the indices.

MR. GREENWOOD: I said I can't talk about hedging structures at NGSA because I don't know what they are but I would just like to reiterate something that Orlando Alvarez mentioned from this morning which I think drives your question which is -- is it a decrease in liquidity in long-term financial products?

And it seems exactly that there is whereas I certainly don't know what the solution is and it is clearly being driven by some decrease in volatility, some sense of high confidence in the prices, Dodd Frank, other things that are perhaps driving it in the market.

We talked in the past about lots of banks leaving. We would just say that it is important and it is important in terms of demand so you know, if people can't actually get the long-term hedges that they need in order to be able to make investments -- on the demand side to guarantee that price, to actually lock down effectively their returns, then that's an issue.

So I would just like to highlight that and kind of translate what I think Orlando was saying this morning into a real market issue which is if we can solve that and we can bring back the liquidity long-term financial products then you are more likely to get people putting steel in the ground to burn gas and make stuff and that's something which I think is a benefit in the marketplace.

MR. LOUW: So maybe just to add on to that. So there is one area where I think there is some overlap between when we talk about long-term liquidity in the financial markets and what we are talking about with reporting and that's going back to those participants that have left the market and we were hoping at some point would return.

I absolutely agree that the indices don't have a direct impact on how people hedge and how we hedge our own exposure as well as the expansion products that we can provide to our customers but it does -- having fewer participants that can participate in an integrated way in both the physical and financial markets takes out the liquidity, both in the physical space but also in the financial market because also those same players were sent some of the same people who had a lot of that open interest in the off months.

So it is an important problem that we have to solve all around.

MS. BURDICK: Anyone else have anything -- no?

MR. GREENWOOD: Could I just make a couple of comments. One of the benefits of going on the second panel is that you get to hear what some of the first panel and perhaps some things you liked and things you didn't.

So there are three things I just want to very, very briefly kind of mention. One was an idea I didn't like, one was a great idea and one I thought required a bit more kind of clarification.

The first one and I can't remember his name -- I will apologize to him afterwards. Somebody mentioned the idea of mandating a certain amount of percentage of fixed prices for customers so it should be urging utilities or even forcing utilities to do a certain amount of percentage of that kind of purchases on fixed price.

And Corey talked about he likes to buy gas the way sellers like to sell. I think most of the NGSA members like to sell gas the way buyers like to buy. It's a careful relationship. It's one where markets function very well when you lead buyers and sellers to agree to the terms in how they transact their gas. I think anything which mandates anybody to be driven down a certain path can be very damaging to markets.

So I would urge you to disregard that recommendation. There was one however made which I think was very positive that talked about FERC investigations and order processes and talked about the amount of historical data that is looked at in those getting back into the deep, dark recesses of history and people's minds where people find it very difficult to explain when things were a long time ago.

The other one was scope of those orders investigations and scoping relatively ill-defined the beginning and then scope creep over time. And then I think the third one is just the generation of some of those. They can be very onerous on the organizations that have to undergo them and I think it is all part of that regulatory risk which we just need to minimize as much as possible if you want to incentivize people to act in the right way and to report prices.

The third one very briefly is on the whole thing around the ICE and Platts -- clearly a very positive thing for the industry if we can have more fixed price transactions being fed from ICE into the Platts indices.

I would just say and I think it has already been mentioned that we need to make sure there are no unintended consequences there, that the liability of inadvertent errors somehow in the process doesn't get passed down to the entity which has been held accountable for some kind of process down the line. So we just need to think that through and make sure that no liability and risk is increased on the people who are working through us, thank you.

MS. BURDICK: I would just like to thank you all for being on the panel, thank you for participating. Our next panel is not set to begin until 3:25 but we finished a bit early so -- oh 3:45 -- oh. Perhaps we could start the next panel earlier, would that be okay with everybody?

Okay great, so then we can get out a little earlier. So how about we reconvene in about 15 minutes at 3:15, thank you.

(Break 2:59 p.m. - 3:17 p.m.)

MS. BURDICK: Alright thank you all again for coming back for the third panel. The third panel is about potential options to increase index reporting and liquidity and transparency in the natural gas indices.

I will ask the panelists to begin by introducing themselves starting with Corey.

MR. GRINDAL: I was introduced earlier my name is Corey Grindal with Cheniere Energy.

MR. BOWRING: Joe Bowring, I'm the Market Monitor for PJM.

MR. CALLAHAN: Mark Callahan with Platts. I am the Editorial Director with responsibility for natural gas price assessments.

MR. FOSSUM: Drew Fossum, I'm the General Counsel of Tenaska, Inc.

MS. DRESKIN: Hi, I'm Joan Dreskin. I'm the General Counsel of the Interstate Natural Gas Association of America, the trade association that represents the interstate pipes.

MR. HAYWOOD: I'm Tom Haywood, I'm with Energy Intelligence. I'm the Houston Bureau Chief.

MR. ALVAREZ: Orlando Alvarez, President and CEO of BP Energy Company.

MR. LEONARD: Hi, Greg Leonard from cornerstone

Research, we are an economic and financial consultant.

MR. KAMINSKI: Vince Kaminski, Rice University Business School.

MR. MOFFATT: Curt Moffatt, Kinder Morgan, Deputy General Counsel and Chief Legal Officer for our natural gas assets.

MR. KNEALE: Good afternoon, J.C. Kneale, Vice President North American Natural Gas and Electricity InterContinential Exchange.

MS. BURDICK: Thank you. I'm going to start just by asking each of you to talk about a couple of specific things that you think that we could do -- Commission or industry-wide to increase either the transparency reporting or liquidity at natural gas hubs in the United States, so Corey if you would like to start?

MR. GRINDAL: I think as I mentioned earlier I think one of the things that could be done to improve more transparency, more volume is that I think there should be a threshold that after some threshold it should be encouraged that those parties should voluntarily report.

MS. BURDICK: Thank you, Greg, Joe?

MR. BOWRING: Actually I was somewhat surprised at the almost unanimous support for and confidence in indices given the very small proportion of transactions that are actually reported and there is no evidence as far as I can tell -- maybe Professor down there has done a study of the reliability of it.

But there is no -- as far as I can tell empirical evidence that the indices actually do represent reasonably gas costs, maybe you can correct me as well from Platts. So starting there, actually doing something evidence based investigation of whether and to what extent, take a day, take a couple of days, take a month -- look at high demand days, low demand days and see whether -- and get a sample of all transactions on those days and attempt to see whether we have a statistic with a reasonable sample of data, whether it is biased.

Because right now I have no reason to believe that it is not biased. I don't have a reason to believe either way so starting now I think would be a good idea.

MR. CALLAHAN: So in response to your question about increasing liquidity and transparency I view solutions from two ways -- one would be the PRA solution. What can Platts do to increase transparency?

We mentioned the agreement that we have ICE to do that right? We have got more transactions from the indices, we are producing additional price assessments to provide more transparency to the market in the form of some preliminary daily indices, earlier in the day as well as bid week indices during bid week.

So that's one component of this. The other would be the market type solution which Corey mentioned. How do we get more people to price report? We need more participation in the indices and we have talked about some of those themes earlier this morning in terms of ways that we can make modifications either to the forward policy statement or just encourage those larger players who are not price reporters to participate in the indices.

MR. FOSSUM: Drew Fossum, Tenaska. Just two seconds of context for my answer to your question. Tenaska is an integrated energy company. We build and operate power plants, we trade power, we trade natural gas.

Our natural gas trading business, Tenaska Marketing Ventures has been a top 10 by volume marketers, primarily in the physical market for years and years, we are now I think third in the most recent Platts quarterly survey so we are a large gas marketing company and an integrated energy company.

That's important context because we are sort of on both sides of this issue. We trade a lot of index priced gas and to that extent we are a consumer of the price indices. We are vulnerable to them if they are suspect or not accurately reflecting the market but we are also a price discloser to the agencies.

We have been for years and years, even before the policy statements and we intend to continue doing that. So I would second Mark's and others comments today. We would absolutely encourage companies that are not currently price reporting to look really hard at the cost benefit ratio and hopefully with whatever great ideas come out of this Conference that cost benefit ratio perception will improve and more of those folks will step up and start reporting.

And it is wonderful to hear that Corey's company is going to start reporting. In terms of specific answers to the question though we heard I think one thing I think is a really good point -- perceived regulatory risk needs to be addressed.

And the Commission is in the unique position to do something about that. I'm not sure there's actual regulatory risk as much as perceived regulatory risk. I think re-upping the Safe Harbor, modernizing it to fit the exact circumstances we have now with a lot of data flowing from the transacting companies through the Clearing House into the publisher's hands, some tweaks would make that more accurately reflect the way the world works now and it is relatively old which again is a testament to how well it was put together in the first place.

But re-upping it and perhaps making it more durable. Put it in the reg's, don't leave it in a policy statement. Again perception matters and that would indicate the Commission's commitment to it, it would make it more durable, I think there is some value in that.

In terms of other ideas I haven't heard yet I'll throw one out that is one of our own and it relates to the audit process. We heard some comments from the last panel about the FERC audit process and how the perception is that that is a burdensome thing that companies expose themselves to by becoming price reporters.

That's not entirely true. Each of the audits that I am aware of, including the one that was of our company that ended two years ago began as an audit of the Form 552 filings and we all make those right?

The additional component related to price reporting is more or less a bolt on to that audit process. It doesn't make the audit all that much more burdensome, it doesn't make it last all that much longer but I would second the comments others have made about the need to levelize those burdens or at least levelize the perceived burdens and levelized across reporting and non-reporting companies.

Because if you leave a perception out there in the industry that the burdens are much higher for the price reporters than they are for the non-reporters you have a problem. And I think, again, any good ideas from the panels, any good ideas from the people that file written comments should be looked at very hard by the Commission and think very hard about ways to correct those two perceptions.

MS. DRESKIN: Terrific, thanks for those comments. One of the things that we heard earlier was the difference between liquidity and reporting to a PRA. In terms of what FERC can do to encourage people to sell or buy in the marketplace -- I'm not sure there is anything.

But what you can do is you can voluntarily encourage people to report, give them the comfort level to report that there are fair rules here similar to some of Drew's reports about those audits.

FERC has an enforcement report annually that it puts out that has provided a lot of data for market participants that gives us insight into how you review things, how you review market manipulation, how you review -- those are the kinds of things that will provide people will some assurances.

But remember unlike the regulated entities like the pipes were used to FERC, others within the marketplace not FERC regulated so you do have limitations on your jurisdiction and they are not as comfortable with some of FERC's processes. You have to recognize that and try to provide those assurances.

MR. HAYWOOD: Excuse me, Tom Haywood with Energy Intelligence. I think I may have this morning talked quite a bit about the Safe Harbor so I am not going to bore you with it all over again.

I'll just repeat that you know I think there are two things we could do. I think it would be -- I would say that, you know, the FERC could revise the Safe Harbor in a reasonable way to encourage voluntary price submissions to all of the, you know, to the major indices that meet the FERC standards.

And in doing so though I think there is a good reason to do that because if you want -- there's a reason for wanting a robust price discovery system out there and choices in the system because it helps keep prices reasonable for everyone, you know.

If you have, you know, you could end up with a situation where you have just one choice or just two and then, you know, then that wouldn't be a healthy thing for someone to look at. I'm just saying that the more choice the consumers have out there, the firms have out there and there is a lot of reasons to use price information the better and just for the health of the industry.

So I would just say that I would say I would start by looking at the Safe Harbor, I would look at the regulatory things. I would take a lot of these issues to heart and kind of go from there, thank you.

MR. ALVAREZ: Orlando Alvarez of BP. So two things that come to mind for me -- one is if you think about the current state as we are in today -- again I am going to park the Platts/ICE which I think is absolutely we are going in the right direction with that.

But if you -- we touched on in Panel 1 -- if you have a location where you have 20 a day being traded, 2 contracts a day, 20,000 MMBTU's a day then is there something else that the PRA's can do to gather more information, assess it -- say this volume is low we need to do something here.

Some kind -- some discretion or judgment that can be performed by the PRA's so that heck it could be one counterparty that just traded that 20 a day might just be one person. We need -- I don't think we do that today to that level.

The second thing and I mentioned it in Panel 1 which again I am not going to mention before mandatory that we mandate everyone to price report. But I do believe going back to the data that I presented in Panel 1 the top 10 movers according to the Platt's data, the top 10 movers in 2016, 9 do not report.

Of those 9, 8 are marketing companies that buy for the purpose of resell. So if you mandate it that those marketing companies that you buy for resale you must report that would be a change.

I would also want -- in Panel 2 we discussed there were some intrastate pipelines in there as well that have marketing companies that do buy for resale to customers -- industrial customers, et cetera and don't report.

So those are marketing affiliates of pipelines and that maybe don't exist on this list as well. So again, producers -- we talked a lot about independent producers they don't have the back office, they don't have the support to get into it.

We talked about utilities and LDC's using the index, we are parking those. I am talking about the marketing companies that are in the business of buying for reselling like a BP energy company the price reports, a major price report.

Those are my two recommendations.

MR. LEONARD: Greg Leonard again, before I actually go into details I want to just give a standard disclaimer that the views I am talking about today are my views and not the views of Cornerstone.

I'm keeping that in mind but I am going to let some of the folks that are actually in the market and these companies that are directly in the market speak to what would directly increase the amount of price reporting.

I want to respond to the notion that there is not empirical evidence that the indices are accurate and actually just say that one of the most salient powerful facts that we have heard today is about the increase in indexed priced gas over the last 9 years.

You see that in the 552 data, indexed priced gas has increased almost every year for 9 years even while fixed price gas trading has declined. So the ratio of indexed priced gas to fixed price gas that's of companies that report has gone from about 4 to 1 to 8 to 1.

We have had a dramatic shift from fixed price gas at the companies that report to indexed priced gas and that is a vote of confidence in those indices by the folks who have money at stake, who are pricing deals, who are transacting in the industry and to me that speaks really immensely to that question.

MR. KAMINSKI: Vince Kaminski, Rice University. You know I think that increasing the volume of transactions reported to index publishers is really a critical task for the Commission and for the energy business community.

You know as I have mentioned in the morning the European Union benchmark regulation opens the door, you know, it is a very narrow opening right now to mandatory price reporting, transaction reporting.

You know right now it is possible for critical indices, the most important indices in the case of supervised entities. And you know we are talking about how you regulate financial institutions.

But if you read the details of executed regulations which have been issued by ESMA, a European securities and market authority you know there is an interpretation which may open the door to a much greater extent. Allowed in the U.S. mandatory reporting to the index publishers would fly. You know I think that you know, our judicial and regulatory system, you know, doesn't work the same way that our systems work in Europe and I have seen, you know, many regulatory initiatives being fully contested in the culture stand over many years, in South Korea and the financial energy industry.

So what can be done -- you know I think more persuasion, you know, education and I think that you know to most market participants reporting to the index publishers is an advantage. You know, because they should want the prices at which they transact being reflected in the indices which are used for assessment prices of derivatives and which are used in the indexed transactions.

So the current situation of the tail wagging the dog, you know, with a small volume of reported transactions in determining the index, you know, is not in anybody's interest.

You know have you ever seen a 1 to 1 -- that's another issue I would like to comment briefly. One question is -- is index data sufficiently available and transparent, you know. I would say something from the point of academic. It's classes on energy markets or organizations at Rice.

There's enrollment in my classes is between 75 and 125 students per class. You know the enrollment is typically the lagging indicator of prices and you know I would be delighted to introduce my students to a greater extent to a microstructure of the U.S. energy market.

And the problem is that my modest research budget probably would not buy index prices for one location for one year so there are things that are talking about education, you know we can and more persuasion you know, the index publishers can do more you know to educate the future leaders of the energy industry about how the markets work.

And I would be delighted you know, to give my students some special projects to analyze historical data. There are no commercial secrets you know those prices are water under the bridge.

But you know my students will have greatly benefitted.

MR. MOFFATT: Hello, Kinder Morgan again, Curt Moffatt. In answer to your question let me start with first of all Kinder Morgan in one way or another handles 40% of all natural gas in the United States every day.

We do have a marketing company or one that buys and sells strictly around our intrastate pipeline business and we are a price reporter. We do feel that it is an obligation that if we are going to trade around the indices we need to participate.

But I do have to say that when I heard everyone introduce themselves being from the Office of Enforcement, as the Chief Legal Officer I was questioning why. And I think there's a lot to be done around how you conduct your oversight and treatment of price reporters when you have a question or when you have an audit.

I think all of us have internal audit, we have external auditors they are very professional, they have a set timeframe, it is not an open-ended, you know, fishing expedition. We have a set budget, people live under the budget.

We haven't had the same experience with FERC-driven audits. Now most of our audits have been -- I have to say under Section 8 for our pipelines but I think, you know, increased training of your auditors before they go out in the field, clear focus of the purpose of your audit, clear focus on what you are going to be asking for.

Now obviously, if you get a trail then you are going to run a trail that's not expected but that's not usually what happens. It just takes two or three years in some cases. More importantly, the agency does not routinely in any time lag provide us when the audit is closed.

We can sit around for six months and wait for the first draft and then we have to wait for the final. And as was mentioned by some people today it's reputational risk. We have to report the audit to our audit committee and we usually have to report it publically.

So the longer it hangs on the more it can call into question our activities. I think that's true you see a lot of heads shaking around the table. So I think those are things the agency can do and being transparent about what you are doing and how you are improving those efforts will encourage people to take the risk of the price reporting.

And I agree, I think it's more a fear of regulation than actual regulation but nevertheless it hits. We also, because we are a price reporter, when you have an investigation we are routinely provided with subpoenas -- not our investigation.

But again we get into an open ended set of data that we have to provide, we have to go through all the computers, we have to hire attorneys just to handle those types of questions. So -- and that is a perception I think of being a price reporter versus not a reporter.

Now I don't know who else you subpoenaed in these cases but I know you subpoenaed us and I know it then led to almost having our own audit. And we worked through it --

I'm not saying we didn't and we have a big industry and you have your job to do but I think we can work better together to make those types of activities more efficient.

I think the other thing that is with respect to our confidence in the indices -- we are very confident in the indices. But our confidence is borne out of access to data. Right now you have in our case we work with Argus, we work with NGI, we work with Platts.

We understood that Platts had a perspective that was developed out of having just reported data. We understood NGI since 2008 -- I think it was 8 or 10 has had both the data from ICE from actual trades as well as reported data. So they had a different perspective on how they created and as you heard I think NGI has not traditionally applied editorial perspective.

Platts I think has in some cases. Both now are talking about doing assessments to try to establish prices where there is not adequate liquidity or trading. That's a little bit of a new world -- we will have to see a little bit how that proceeds.

But we have also always had access through our relationship with ICE on the actual trade data. We can then go and correlate ourselves. We need the history -- we use the history regularly to try to do our own assessment where we don't have clear liquidity or even a reported price.

We do a lot around the Houston Ship Channel, we track KATY, we track the Ship Channel but we rely upon history. We rely upon the forward market to inform all of that debate. So I don't see a big need for mandating reporting from any group. We have confidence in the market, we have seen tremendous resources developed by the free market, by the ingenuity of ICE or Platts or NGI or Argus or any others.

Access to data -- we are worried about concentration of access to data behind pay walls. If that data is available there are going to be more entrepreneurs out there developing more tools that we can work with because the agency over 30 years has developed a hell of an efficient market, both in the commodity and in our transport services.

That's where we are -- we don't think we need a lot of government mandates, we think we need more transparency, access to data and more competition so that the price may go down for some of the access to the data.

MR. KNEALE: J.C. Kneale with ICE. I may have a bit of a different perspective than many of the people on the panel -- certainly from an index perspective as a reporter because obviously we are not a PRA, we simply are publishing math based on real trades that are done in real time each and every day.

A couple of distinctions I want to point out just various things I have heard just recently and throughout the day as you requested, things that you can do. Look it sounds like there is plenty of support for a little more clarity on Safe Harbor.

It sounds like there is definite support for clarity on do I have to report both daily and monthly or can I report one or the other? I think that's an extremely interesting one from a PRA perspective because I do think there are customers out there that would report monthly that don't want to take the effort to report daily. It is simply more onerous to do it on a daily basis, it really is.

I also haven't heard many people frustrated with the quality of daily indices and in fact the stats bear out that there has been a pretty decent bottom in the amount of daily transactions reported by Platts or NGI, excuse me. Certainly our own data shows we are actually up 10% year to date versus the same timeframe year to date last year in daily transactions.

In the monthly transactions there's still some issue admittedly. There could definitely be some encouragement of more folks, you know, either trading on ICE which will count or sorry it won't count as reporting but it will be included in data that is used by both NGI and by Platts in creation of the index, or simply just reporting that.

But I think if you can remove some of those barriers you will have companies more nimbly choose one of those three options reporting directly to the companies, trading on ICE or the third option probably is my mistake -- I don't think there was three. You could just not report I suppose.

Another thing that I wrote down is there has been a large discussion about index versus fixed price and it is a very poignant one for today. I think just as Greg pointed out obviously the amount of forward open interest is being tied to the indices today represents a certain amount of confidence in them -- that's one interesting point.

I think another point is that we come back to the idea of index versus actual fixed price trading. There is a significant portion of gas users in the market that have zero incentive to put their neck on the line and make a guess on fixed price.

They have every disincentive possible in terms of losing their job or making the company's stock go down or whatnot. So I don't know how to solve that. That's a free market issue, that's a PUC issue for some folks but I don't know how you are going to solve that so the question ultimately comes back to what can we do to foster simply more fixed price trading?

I think that there are things that some of the peer customers in this auditorium today or out there listening can do. They can make an effort to trade more in a transparent marketplace, whether it is on ICE or some other venue. Liquidity does beget liquidity. There's only so much you can do though so that's not always possible.

But the mandating of any of this seems contrary to the point of view of most of the other comments today. Most of the other comments today have been -- help us reduce the regulatory burden or at the very least perceived regulatory burden cost, mandates, et cetera.

To then come full circle and say oh, but maybe we should mandate this piece -- I'm going to need more convincing on that part. We have heard a lot of people say they are very confident in the indices, they are very confident in the data behind the indices. I appreciate certain customer's issues with being a proportionate or disproportionately large percentage of those volumes.

I'm sympathetic to it. I wish I had a better answer and will as a market work to try to solve that -- I'm optimistic because it is in everybody's best interest.

And then lastly as a Rice alum I would more than happily try to help you out with some data events so we will figure that out.

MR. KAMINSKI: Send the transcripts.

MR. KNEALE: It's on public record now at a very low rate, at a very low rate. I'll pass for now thank you.

MS. BURDICK: Well speaking of accessibility today while we are on that topic -- one of the standards for being an index developer is having the information accessible. And it seems that we have moved to the subscription model and I just wanted to talk a little bit -- people who comment now whether they feel like they had enough accessibility to the data that goes into the indices and whether or not there could be improvements there and if they think that something should change there, Corey?

MR. GRINDAL: So I've got comments from the first question you asked as well as I am happy to answer that one.

MS. BURDICK: Okay.

MR. GRINDAL: I'll start off with the question that you asked. You know I am sure Mark is going to reach across here and hit me but there are definite price differences between different PRA's. There is a clear differentiation and it is one of the things that I know speaking on behalf of Cheniere we have expressed some of our concerns to Platts. We have given our support to when we do report to report to more than one entity for the exact question -- for the answer that you are basically asking -- is there a big price difference and at times there are.

So I know from Cheniere's perspective we will report to multiple PRA's. But to go back and make a comment about the PRA's -- I do not feel it is the function of the PRA's to come up with a price when there is not enough data to basically publish a price based off the data if there were no submissions.

I do not feel that it's the function of the PRA to go and provide a price. Whether you are doing business bilaterally with your customer under an ASBE, under an ISNO with a gas annex -- there are provisions about negotiating what the price should be between you and your counterparty when there is not a price formulated based off of data submission.

So I appreciate where Mark's coming from in wanting to provide ideas and to give perceived liquidity but I don't think that it is the job of the PRA to provide that price because I think you get into a whole other set of issues -- regulators or not I think you just get into a whole bunch of different issues.

So that's kind of my commentary on one of the things that Mark brought up in his introduction. But in terms of, you know, answering your question about subscription models -- we are all for paying for the data, especially if we submit but I do think that if you do submit the data you should have the right to other people's data to how the indices were formulated as well as I do think there needs to be some cross leveling between the different PRA's.

MR. BOWRING: So first I would like to agree strongly with your point that no one should be making up prices, however you want to put the gloss on it that's the fact of what we are talking about and that doesn't make sense. So if there is not enough data, there's not enough data let's not pretend there's a price there.

Secondly, I'm not quite sure whether this overwhelming vote of confidence in indices that keeps getting repeated -- I'm glad people are confident but the question is why are they confident.

And if you listen carefully I don't hear quite all that confidence. If you listen to ISO New England, if you listen to California, if you listen to New York, if you listen to Kinder and start talking about they are confident most of the time except for when you really need to be confident when prices are going wild and at that point you use a multiple, you use something other than indices.

You go to ICE -- you look at real data instead of the indices. We, in fact in looking at prices for and the cost of gas for offers in PJM do not use indices at all because they are not timely so we are using ICE data -- we are using only ICE data because particularly if you are in an hourly market you need to know what the cost of gas is currently not what it was yesterday.

So and I think you have to be -- so that was my overarching comments. To go back to the question about data, I think you have to be careful about giving people access to data. I mean obviously that's ideal but you need to also be careful about market power concerns, access to other people's trading strategies and all of those things.

So simply having access to data while it sounds like a good thing for Vince as an academic that's one thing but for competitors that's entirely another thing and we are very sensitive to that as a market monitor and we don't provide in general -- PJM doesn't not provide in general data on people's bids and asks to the rest of the market for that reason.

MS. BURDICK: J.C. and then Drew.

MR. CALLAHAN: One point.

MS. BURDICK: Okay Mark?

MR. CALLAHAN: I thought that we were going to go around the room. So a few things to touch on here -- first in terms of the idea of price assessments when there are no trades -- certainly that's valuable feedback and Platts likes to gather all feedback, positive or negative.

I can tell you anecdotally that the biggest request that we get by far from market participants is to provide that transparency and to assess a price if there is no value. And there are different reasons for that. It could be because of the fact that there are financial swaps that are priced off of these indexes right?

It could be the fact that they just like to have that price point that they can reference on a daily basis and maybe they are using it for market purposes, maybe they are looking at it for just looking at prudence to verify sort of what the price is that they are getting in the market, for whatever the reason may be.

That is something that I believe does serve some value to the market.

Now, having said that, as we talk about the evolution of this industry over time perhaps it is a situation where you might need to revisit your contracts and say if Platts does assess a price then maybe we don't decide to use it right, but that is your decision.

It is up to us as a PRA to provide that price transparency and let the market decide what they want to use. As we talk about -- just one more point on transparency and this is a lead to Orlando's comments -- you know Platts is always looking at ways to provide more transparent information to the market.

What's unique about natural gas as compared to say oil -- where in the oil the Platts market on close environment is very much different where counterparties are named in terms of who is bidding and who is offering and when transactions occur the counterparties are named.

Natural gas doesn't have that right? And that's essentially been decided by the participants themselves. And because of that we are limited somewhat in terms of what information we can provide, having said that, we would always be looking for ways to perform some analysis around the data that we do receive in our indices.

It could be for example counterparty concentration of an index over time. Maybe not naming that company obviously for competitive reasons but just providing some information around concentration in the indices and we are always looking for ways to do that and we are happy to work with market participants or the Commission to make that happen.

And finally the idea of access to data and we have heard some comments from George in the previous panel and Curt and others around the access to data and their concerns there. You know in working to implement this agreement with ICE we have been extremely deliberate in our approach in terms of methodology, not only in terms of the types of data that we produce and when we produce it because the time at which you produce it is important as well, but also how we handle types of data in terms of waiting in the indices and things like that.

And data has value, right? Just as steel in the ground has value. And while the price points at different periods will differ for various reasons, my function at Platts is independent of sales so I don't know for example if a company spends a dollar on Platts services or a million dollars on Platts services, it's all part of our independence because we don't want to be, you know, have that part of our judgment process.

So I think that the access to data is important and our commercial teams produce packages of data so that there are different alternatives for you to access different types of data at different price points so that it meets your business needs, thank you.

MR. FOSSUM: I'd like to respond to something Joe has said a couple of times now expressing some puzzlement at how we could be comfortable with the indices and that they reflect reliably real prices.

I want to go a little bit more in depth in the sort bite level stuff you have heard from us so far because I think the full answer as to our comfort -- at least my company's comfort isn't that we are just blindly comfortable with the printed indices, it is that we are comfortable with the combination of the indices and are knowledge of how they are put together plus the transparency we have into how liquid or illiquid they are thanks to the PRA's disclosing the number of trades and the volume of trades.

We have some sense of whether these things are reliable or not. Plus maybe most importantly, we have confidence in our ability to contract around risk. If we see a point that was liquid and robust for a while but becomes much less so we could move away from that point or we can transact differently. We could tie to a different more liquid index with a basis approach.

Or we can trade fixed price instead of index price at that point. There are a number of tools that we have available in our tool box when we as a company see a point that we don't like much. So the sound bite is in general Tenaska is comfortable with the current system.

But the takeaway from that is we don't believe the system is broken and we think a significant regulatory intervention at this point to impose mandatory price reporting or what have you is not called for and particularly we would be concerned about that because the law of unintended consequences does apply to Commission.

And without fully understanding what impact such an intervention whatever it might be might have on the folks that currently are price reporting, you are going into somewhat of a risky area. You could actually cause parties to quit price reporting that currently are, did that help?

MR. BOWRING: Yeah, no I appreciate moving beyond the sound bite because the sound bites are getting annoying after a while I have to admit. But so I mean I heard what you said but the one thing I didn't hear you say is that -- why is it you believe that the index and say it's 10% of the trade -- say it's only BP, say it's only one trader and you have some sense of that why is it you would think that that was actually representative of the -- correctly representative of the mean value of the trades?

You have no idea what the other trades are, why do you think that's reasonable? I understand why people use indices because it is the only thing available for all the reasons that people have said there are lots of incentives not to go fixed. So there are incentives to use indices even if they are wrong. I am not saying they are wrong and I'm not calling for regulatory intervention unless -- I didn't want those words in my mouth although sometimes they are good.

I'm not calling for that. What I'm just asking is a simple question it doesn't make sense to think a little bit more scientifically about how representative they really are.

MR. HAYWOOD: I would just like to say you know, to the gentleman's point. I think that's exactly why you should have a robust price reporting and this industry should embrace a robust price reporting thing because there's nothing magical about these prices, they are volume-weighted averages unless you want to do an assessment.

But basically they are volume weighted averages and we have to keep that in mind. I mean that's how they have always, you know, been developed from the beginning. Ever since they went from, you know, looking at a bid at, you know, like the spread on the thing and then you just kind of guess where it would show -- but then they came up with the idea of well, if you did a volume weighted average you could get a price.

And the industry embraced it and it has worked quite well. As far as price assessments, you know, we don't have any plans to do any kind of formal price assessments but, you know, if Platts feels like it is necessary well you know that's fine.

Also, I loved the idea of price leveling between the idea that the price data could be levelized across so we can make some money. I just wanted to make that point that we need to keep in perspective exactly what it is we do.

Platts gets the information they volume weight it. We get the information, we volume weight it. That's how these indices are developed. It's a journalistic function basically, thank you.

MR. ALVAREZ: Okay so one thing that's on my mind here is we keep using the word encouraging, encourage and encourage and I guess I think you said BP in there, just to clarify.

MR. BOWRING: I said only because you were the only trader.

MR. ALVAREZ: Exactly and I'm glad you did, I'm glad you did because I think -- well my request is we are going at this from everyone around the table, market liquidity, you want liquidity at annex. We are coming at it from that as well but we are also coming at it from my company and others, the majors that some of the major five or three that are reporting.

I've said in Panel 1 we are accepting -- we are taking on risk. We talked about the regulatory and I think you hit on it J.C. it is -- that is and I'm -- colleagues around the table I am not sure that anyone else it's risk that we are taking on so it is something that can't just be about encouraging I guess is what I am asking for is something that has more teeth.

And that's why I was proposing something because mandatory -- all the way around I'm with you. I am not supporting that but something has to be done. It can't just be we are going to encourage because I don't think that is going to work.

So my point is that's what I was trying to find sort of a happy medium to say if you are a marketer and I think you said, if you are a marketer you should be or Vince did -- if you are a marketer it is in your best interest to report volumes. You are buying, you're selling, you are in the market every day. You are in the swap market as well as the physical market you would want to be in the market reporting, that's why that was my plan B if you want to call it -- sort of those marketers that are in it for buying and selling, they report.

MS. BURDICK: I guess and I think Corey mentioned something similar earlier which was some sort of hybrid between a mandatory reporting and a voluntary reporting where if you sell over a certain amount you are required to voluntarily report I guess?

MR. GRINDAL: I was trying to be nice and not come out and say mandatory.

MS. BURDICK: So are there other ideas for some sort of hybrid, are there legal obstacles to that? Have you thought through that at all? I was just wondering if anyone else could comment on that. I think people have pretty strongly said no mandatory but what are the other options in between that voluntary and mandatory?

I think you said require all marketers but it is not mandatory so does anybody have any other comments?

MR. ALVAREZ: Sorry, let me clarify that -- so, not mandatory -- but mandatory for marketers.

MS. BURDICK: Okay.

MR. ALVAREZ: Make sure we are clear. Mandatory for marketers that are in the business of buying and reselling gas is what I was trying to say.

MS. DRESKIN: So it sounds like amending the blanket marketer certificates you are suggesting?

MR. ALVAREZ: Yeah I guess so.

MS. BURDICK: Joan did you have your microphone on for that for our stenographer?

MR. ALVAREZ: I used the data, again, if you just did that just in the top 10 you would have some pretty robust numbers coming into the indexes just from the top, Cheniere being one which Corey said will be reporting at the end of the year -- hopefully at the end of the year.

So that right there fixes -- in my opinion, does a lot. It moves the doll in the right direction.

MR. BOWRING: I'm just curious does anyone think that's a bad idea? I haven't heard it yet.

MR. FOSSUM: I'll elaborate. I don't know that it is a bad idea, it's an idea that we would need to think about a lot more as a company and get comfortable is not a bad idea. And the reason I think it may be a bad idea though Orlando you may have a much better sense of this.

The last thing we would want is for half of those companies to decide that they are out right -- and go the way of the banks and leave the space and that may be very unlikely.

UNIDENTIFIED SPEAKER: Where would they go?

MR. FOSSUM: Trade pork bellies or metals, I don't know. And I know the list we are talking about Orlando, the top 10 with the largest increase in volumes is the list in that Platts article. Well we are the one that currently does report out of that list of 10 companies that have had the increase, so 1 of 10 is currently reporting and that's us.

So we would love to see the rest step up and report. It's great to hear Cheniere is going to but again the law of unintended consequences the last thing we would want to have is a handful of folks -- maybe not leave the space Orlando, but quit selling fixed price gas.

MR. ALVAREZ: This is really to J.C. -- J.C. is going to be coming back on us. But you are going to have -- there are always unintended consequences that we can't even think of today with any of this that we are doing today, that we are contemplating.

If you think about the Platts/ICE -- I mean I've thought this through. You could have that Drew in the same case. You could have some people that now are doing business on ICE and are not reporting or they go to NGI, we are not going to Platts.

Now they know what's going into Platts. They may say I want you to do index now. I'm not going to do anymore fixed price. And there are all kinds of unintended consequences and we could just talk until we are blue in the face and come up with 20 of them.

So I hear your point though you could. You could have some of these we mandate to marketers to report -- you could have some of them go I'm just going to do index now, same thing.

So yeah, there are things to think about.

MS. BURDICK: I'll let J.C. and Curt talk and then I will have a follow-up question too.

MR. MOFFATT: So from my perspective 40 years ago when they started the Federal Power Commission we were collecting a penny -- we had penny escalation every quarter and the producer had to file a piece of paper here to get permission to collect that penny.

And we regulated all of that and beginning in the '70's and '80's the agency began getting out of the way of the market and it has worked really well. And with the market affiliate rules you went from really tight rules to opening it up and it has worked well again.

I tend to rely on the market. I think it has been very efficient. I have a bit of a different view theoretically on an exchange and the data that is on the exchange versus how they may choose to use that data to provide other products or to take that data where they invest the capital to create the exchange and publicize the exchange, subject to exchange regulation.

That data -- they can then sell it to Platts or they can sell it to NGI or they could sell it to any other entrepreneur. Our concern is access to that data for a fair price from the exchange. That's different than a price publisher -- index publisher.

If you want to be in that business that's fine but that core data from the exchange I think could be viewed as a public good that you get some price for because you invested to collect it. What we are concerned about is that that type of data is not available to the entrepreneur to develop other products that we could rely upon, whether it is for correlation purposes or history and research purposes, whatever we want to buy it for.

That's our concern. So when we express concern about the Platts/ICE transaction we didn't have clear, you know, clarity as to what were the exclusivities in that transaction? I don't care about price, I don't care about what -- well I don't care about price in your transaction and really whatever they want to do with that data that they collected and what they can build a better mousetrap -- good on them.

But I would like to make sure there are other competitors out there that have the same access to the base data, they create a better mousetrap and get some price competition in the index world or other products that we can use to correlate in history and research as I said.

But it is -- it is critical to the market. I mean even some of Platts' own data says it is essential with the information people are putting together in different way, are essential on that price discovery.

MR. KNEALE: So Curt is going to be flying back with me tonight.

MR. MOFFATT: No, I went to the beach.

MR. KNEALE: Just a couple of thoughts and first I'll echo Orlando's unintended consequences. You just never know and so I guess one of the things that I would ask for that I think certainly a lot of people up here may agree is some time.

One of the things that's changed in the last 18 months is the Platts/ICE agreement. You are going to find that the major PRA for 67 to 68% of all financial regionally is about to get an influx of more data than they ever thought imaginable and that's going to be our transaction data.

Now it is hard to tell just how much more data I have than the PRA's because there are issues with the PRA's knowing their counterparties -- but I can tell you that in general we are going to have a lot more data. We have averaged close to 300 counterparties over the last 7 years and that number has only fluctuated by 10 or so counterparties.

The average PRA has 30 to 50 price reporters so at a minimum you are going to see a lot more data in Platts' indices. Similarly in NGI's indices you can already see some of the robustness in terms of total volumes in the locations they use our data.

Interestingly, our data was freely available to customers for -- well since inception roughly since 2001. We did everything we could in the market to encourage people to use our index as the settlement for financial transactions.

We didn't win that war, we didn't. It didn't matter if it was the best data. It didn't matter if it was the most transparent data, it didn't matter if it was the most robust data source. It wasn't the data that was chosen for a variety of reasons.

And that's okay but that was competition that did that. Competition allowed people to make choices. Letting people make their own choices is really what this entire country is based on for the most part and so I shy away when

I hear the word mandate. I don't like that.

Now if you want to mandate I'm happy -- if you want to mandate that they trade everything on ICE that works fine for me. It would be the ultimate in transparency if that's what we are really trying to get to.

You know arguably the next day markets on ICE as I said earlier, if you anecdotally ask any trader to pick a random number or call them, you are going to hear them say 80 to 90% of all next day volume goes through on ICE. It is an odd day when we don't print in Ship Channel. It happened I think again just recently. It happens two or three times a year and it is this sort of weird thing but it comes back to this assessment and you say well should I not have a price?

Well guess what, I'm an exchange and I cleared financial forwards against that price. I don't have the luxury of saying ah, just skip today. We have been historically going out and determining that price as the exchange we use. All the data that is at our disposal, excuse me, spreads, history, et cetera.

I think generally the market accepts our description of how we came about that price. I do think it is prudent that the PRA's listen to their customers because you can be sure if they are asking me to come up with the price they are asking the PRA's to come up with a price.

So I'm supportive of the PRA's listening to their customers however that may fall. I'm also -- I'm going to push back a little bit on Corey's statement about price leveling. I get what you are saying because I would rather pay a Honda price for a BMW but the reality is different fees for different things.

And just as many people on this panel and in this room offered different prices for their own services, whether it be transport or gas at the end user -- that price competition is what keeps the market efficient.

If we are going to simply apply a one price fits all model you are going to very quickly do away with potentially a lot of the innovation that has led to, you know, Cheniere being the leader in developing LNG in the continent of North America.

And maybe I misunderstood.

MR. GRINDAL: I want to clarify this. I don't mean that everybody should charge the same price but let's just be real honest. There is a huge difference in the four price reporting agencies that are sitting right here in what you buy their data from.

I'm talking about many multiples.

MR. KNEALE: I won't argue that, that's customer choice right so.

MR. GRINDAL: And it is customer choice.

MR. KNEALE: Yeah.

MR. GRINDAL: And we subscribe to three of the four. So I am not saying that everybody should pay the same price but there does need to be some type of shift or else I mean the market will take care of itself, that's the one thing that I feel confident about being here in America.

MR. KNEALE: That's a great point. I think over time the market will take care of itself. I mean you can't continue to charge a million dollars for something that is worth two dollars. You might sell it to one customer and bully for you but you are not going to sell it to many people that way.

I do think Corey is right, I mean just the same as if he was trying to sell LNG for $30.00 and MM you know, it is not going to happen.

MR. GRINDAL: We're happy to do on ICE to the extent that you can provide those customers.

MR. KNEALE: Thank you, it will be listed tomorrow I promise. You know in general I think we are all mostly free market people up here and I think we all acknowledge that typically business will go where smart money goes and historically that's the way it has worked.

Again I am sympathetic to the problem of the highest contributing percentage folks of the indices. I don't have a great solve for that. Again though, I think with a little patience what we might see is when Platts begins to incorporate a lot more data than they ever had you might see some of that reliance on top tier providers go away.

Again I'll come back to -- I think it is important again you separate the problems. I'm not sure if there is a problem in the daily market and I'll let some of the other people comment on that. Again, it comes back to I think there's a bigger problem in bid week and I would agree.

I think there's something that we -- maybe it's us as an exchange can do to encourage more people to trade fixed price on the screen to provide more transparency. We will certainly think about that. I mean it is in my own best interest anyway. And then you know, the customers.

But let's not over-regulate things where there are no problems that's for sure.

MS. BURDICK: While we are talking about unintended consequences I do want to shift gears a little bit but it is still a consequence of the Platts/ICE deal which is how price reporters could be affected with actual people reporting their prices, compared to an index developer -- how they or not reporting could be affected by -- or how our policy statement and/or our form 552 instructions could be affected by entities who are currently non-reporters who are now having trades going into the Platts index and what does that mean for our policy statement and for the form 552 and if anyone has thought about that.

MR. KNEALE: We've thought a lot about it.

MS. BURDICK: Okay.

MR. KNEALE: The good news is there is precedent. We have been doing this exact same model with NGI since 2007 so you guys know better than me have there been any issues with it? None come to mind, I don't know, Dexter or Paul -- I can't think of anything to my knowledge.

So let me just explain exactly how it works. We are not providing counterparty information, we are providing anonymous trades. We have also been indexing those anonymous trades for 15-16 years now.

Again, they are real market transactions that happened on the screen. We strongly encourage everybody to notify us to cancel transactions. They do it, it happens all the time. Every day there are people that cancel transactions to make sure they don't show up in the index, et cetera.

But what we provide to Platts is anonymous data and we only identify their price reporters based on their price reporters telling me hey please let Platts know my trades are in this data. That allows Platts to -- 1 -- not double count it, NGI the same thing.

But it also maintains that these are a unique subset, these are the price reporters, they are not just the anonymous guys on the other side of the trade. The anonymous guys on the other side of the trade though -- the good news is there are 250-odd more of them than there are price reporters typically.

And so again you are going to see a lot more total volume. Somebody did mention the third party issue. Again, we have been doing this now for 10 years at a minimum with NGI. We have been publishing our own indices and they are audited, transparent, et cetera.

I don't anticipate any issues but by all means if you would like to have a further conversation I'm happy to do that on the side, so.

MS. BURDICK: Vince?

MR. KAMINSKI: Yeah just a small question and a comment. You know it occurred to me that under the arrangement ICE has with Platts you know some market participants become price reporters, anonymous but you know, they do something they wouldn't otherwise choose to do. And to the extent as a transaction in the indice markets only a substantive transaction is reported to the index publishers and it violates another rule indirectly that all the transactions executed by an even party should be reflected in the index so there is no cherry picking.

Can you give some substance to this problem?

MR. KNEALE: Yes so let me come in on the second part first. I think -- I believe the rule you are referencing is that if you are a price reporter you must report all trades. There is not a rule that if you trade in a given market you must trade all of your trades on that market, right?

No different than if Orlando trades on ICE -- I wish he had to trade everything on ICE but I know he is also going to trade on CME sometimes. Sorry to pick on you Orlando, you are just the closest.

So we did think about that. What we also thought about was that an index is not always perfect. Very few indices are perfect. Indices are meant to be indicative, they are meant to be representative of the market price that day. Is it a perfect price down to the penny?

Absolutely not -- and anybody who tells you it is perfect is crazy. What it is is representative of the basic value of that commodity on a given day and just as Drew mentioned when customers make the choice to transact against an index, they are taking into account the fact that it is not a perfect price -- it is a representative market price.

They are comfortable with the price given even if it is not perfect. Interestingly, when we think about L&P's

every ISO has its own confidence level as well. I would tell you that. Having run our power markets for several years in futures the opinion of ISO prices produced varies widely and comments on people about you know, is this one good, is that one good, is it perfect here, is it perfect there -- again it is not perfect it is best effort to provide an indicative market price.

And I may get skewered on that because it is supposed to be perfect but I don't know if market participants necessarily expect perfection so much as they expect consistency. If your formula says A plus B equals C then by God A plus B better equal C every time I put it in the equation.

That's what people want to see. Did I cover both of your questions Vince, I'm sorry. I got off tangentially there.

MR. CALLAHAN: So a couple of comments on the use of third-party data, specifically ICE data and Vince's comment about folks involuntarily participating in the indices.

We have thought long and hard about the use of third-party data, particularly around when we receive an exchange rate from ICE and when we receive that same exchange rate from a price reporter what do we use, right?

And we have thought about that in terms of consideration before a policy statement -- not only in terms of our ability to be in compliance but also the price reporter themselves. And the basis for our file indices is price reported data submitted directly to Platts that will be supplemented by anonymous, non-price reporter data received from ICE, okay.

So we have thought about that. You know in terms of verifiability right so the idea of a price reporter sends us a trade and we know who that person is right, so we can pick up the phone and call them and ask questions about a transaction.

We don't have that same mechanism with ICE data that is anonymously reported to us but we do have -- we do view that data a little bit differently because of the transparent nature of the ICE exchange and that bids and offers are seen by market participants and those transactions themselves are also viewed by market participants as well.

So in our mind that is a little bit different than a trade where Tenaska would call up Orlando's traders and do a trade directly on the phone -- so we have considered all of that and we have had to change some of our price reporting requirements of our price reporters in order to ensure that not only ourselves but our price reporters are compliant with the FERC policy statement.

Because what we wouldn't want to do is create a methodology or some processes that A -- create doubt in the minds of the price reporters or 2 -- bring some perceived increased risk to the price reporting process because that wouldn't be good for anybody.

MR. HAYWOOD: And just to follow-up on what he's saying I'm just curious -- can I ask a direct question? Are you weighting these prices like any other price?

MR. CALLAHAN: We are still in deliberation in terms of our methodology on how those transactions will be weighted but yeah we are gathering feedback from the market in terms of how you would handle an ICE trade versus a non-ICE trade given to you by a reporter.

MR. HAYWOOD: Well what I said this morning is these aren't prices being reported to Platts, these are prices being gleaned by Platts and they are anonymous prices. So I mean you are treating them as if they are prices being reported to you in good faith by someone and you could follow-up on that price or maybe you will just kick the price if you don't like it since you don't know where it came from.

I mean I am all for it. You can do this but I would remind you though that you are cornering of exclusivity and you are incorporating it into a, you know, into your index and I don't know I think there should be some questions there.

But, you know, I'm just saying some of the things that I would have a problem with but they can do what they want but I am going to go back to my original argument that you know, we shouldn't be looking for a system that is going to have the top tier reporting parties dropping out number one as you indicated they might.

And we should have a system set up that has a robust price discovery for a larger number of price reporting entities because you know, it may be that somebody shouldn't be paying, you know, for a BMW what they are paying for a Honda but someone may need a Honda instead of a BMW.

So, you know, there should be some choices in the market that are available for the entire market and the entire market isn't, you know, the same. You need to be thinking about all the players out there who use this material -- use these indices for informational purposes or whatever they want to use it for that it should be available.

And, you know, the idea that you might have to pay, you know, Platts now for ICE and information that's now free, that's fine if they want to do that. But I am just saying there should be, you know, some information out there that people can glean for more than just one source in the end.

I mean the market concentration isn't necessarily the healthiest thing, thank you.

MS. BURDICK: Thank you, Joe, go ahead Mark.

MR. CALLAHAN: Yeah I just wanted to counter that comment from Tom and some of the doubt he might have created around the use of the ICE exchange data. Yes the verifiability of that data is different than non-ICE price reported data because it is anonymous.

However, the manner in which that that transaction came to be is different, it is much more transparent -- and I think that is what the differentiating factor is in our ability to say with confidence that that transaction occurred in the view of the open market.

And finally, our methodology also does provide us with the ability to not use an ICE exchange transaction if we feel like it doesn't fit with other transactions that we are seeing for that location.

MR. HAYWOOD: So you think it is just as good as the reported process?

MR. CALLAHAN: Yes.

MR. HAYWOOD: So you would use it in what way?

MR. CALLAHAN: We would treat it just like any other transaction that's correct. And our methodology -- we will scrutinize that transaction just as we do every other one that we receive from price reporters.

MS. BURDICK: I think Joe is next unless you have a point.

MR. KNEALE: Thanks Joe I owe you one. I guess I'm surprised a little bit by Tom's comments because I think we heard on the panel earlier that he was arguing that he wants accessibility to all the exchange data just as everybody else might have the opportunity to get that data but now we are drawing into question the value of that data.

Interestingly and I'll freely admit I have book bias here -- I will hold up ICE transactions that are transacted on the exchange in front of thousands of users as a higher quality data than any reported data. No offense to any price reporter, okay. I know that price reporters make every effort to be perfect but the fact that thousands of people or maybe if we want to be -- you know, hundreds of people are viewing those prices in real time.

They have the opportunity to take real risk against those prices creating real transparent prices to be calculated against everybody is powerful. Now price reporter data is also very high quality. So we are arguing about, you know, a Mercedes versus BMW in my opinion but the reality of it is, is that there can be errors right?

We are talking about audits -- we are talking about all of those things. There is one perfect audit trail and that is the exchange transactions. That is the counterparties that have the exact millisecond it happened, it has the circumstances, it has all that data and it is sitting there in a computer for years and years and years and years.

It's very easy and as you guys know anytime you have an issue you subpoena our data from us. So I don't think we need to argue the merits of ICE transaction data versus price reported data, I think that's a bit of a fool's errand but I will stick up a little bit for ICE transaction data. I do think it's pretty darn high quality.

MR. BOWRING: So would I. So I have my own gratuitous comment -- so would I. I'm a little surprised to hear that Platts is going to start weighting it and picking and choosing which ICE data to use.

So I mean the ICE data is the data as you said and you characterized it exactly right -- its real market data we should just use it. But actually I wanted to respond not so kindly to something you said before about -- I mean to compare an index that's based on 10% of participants and you don't know who they are, you don't know it could be 1, it could be 10% of the transactions -- you have no idea whether it is biased or not to the PJM market.

And those who know me know I don't say that PJM is perfect by any stretch but to compare those two is really

-- I can't get into the fancy car comparisons but a Mercedes against I don't know what a tricycle is. I mean the PJM market has all the data in it, price is being formed for all the transactions something no question about comparing to.

MR. KNEALE: And it was not in particularly directed at PJM.

MR. BOWRING: No, no, no, I understand. I'm just talking about RTO's, ISO's, I mean markets that are clearing markets with a must offer requirement with every transaction in there. You can't compare it to an index, it's not even close.

MR. KNEALE: No I think we got started on that road when we were talking about transparency and what makes up an index et cetera. And I guess more my train of thought was just that I hear a lot of complaints about transparency and how prices are --

MR. BOWRING: Are you saying one piece isn't totally transparent, I'm shocked. No it's not, I agree with you it is not.

MR. KNEALE: That was it, that was it, thanks.

MR. HAYWOOD: The point about the exclusivity of providing this information -- my only point is that, you know, I don't have access to that information no one is reporting it to me but no one is really reporting it to Platts, they are gleaning it off this platform and it is just blind information.

If I had access to it I would have to consider how I would use it just like Mark is coming up with ways to use it. I'm just saying though that number one -- it is exclusive to, you know, to Platts and to NGI. It's not available to us or Argus and that you know, the way you use it is a factor and the fact that this isn't a reported trade.

This isn't something being reported to Platts, it's something being gleaned by Platts from a third-party provider which is giving them the information is just something that I'm just throwing out.

I'm not saying that it is wrong. I am not saying that it will create an incorrect -- I'm sure it will be, you know, a weighted average the way weighted averages work I'm sure it will be you know, fine, you know, if you are careful about how you use it and you want to have verifiability. It's just a little departure from the way that, you know, the price reporting has been done by Platts.

I use to be a Platts Market Senator -- that's why I'm just talking, you know, from experience. That's all I am going to say about it.

MS. BURDICK: One thing we talked about this morning were additional standards that Europe had implemented for price reporters and I wanted to talk about is there a place for somebody to be responsible for creating new standards here in the U.S. for liquidity -- basically liquidity standards?

Does anybody have any thoughts on that?

MR. ALVAREZ: When you say standards are you saying thresholds -- that's what we talked about?

MS. BURDICK: Yes.

MR. ALVAREZ: So a minimum volume threshold or something, is that what you were alluding to?

MS. BURDICK: I guess.

MR. ALVAREZ: So again, beating a dead horse here, you probably are going to say we have heard enough but anything will help. Where I am coming from is more volume helps us, BP that's where we are coming from.

I appreciate everyone has talked about you know the ICE/Platts situation or agreement which again in a way -- going back to J.C. we talked about no one likes mandatory but in a way you are putting those -- you are forcing the hand a bit on people that are doing ICE today, you are forcing the hand.

The fact that now that they do ICE today, now that is going to get reported or whatever word you used, but you poured it into -- so you are forcing their hand. So you may not call it mandatory but you are forcing their hand. No different than what I would say you are a marketer, you report now, we are going back to that.

So to answer your question if there is a threshold that could help. That, you know, again I am not in any way -- I need help from colleagues around the table how you generate that but if there is one counterparty that is at a point and they are the only ones there -- and I know Drew had mentioned well, you know, can I ask others and they will just say well I'm not going to trade there because there is not enough liquidity.

I get that. You always have that option. But at times you have a customer -- we like I said in Panel 1, our business is to make markets fair markets for our customers. We have over 33,000 customers in the U.S. and all industrial utilities, LDC's, IPP's and they want a market at certain areas and we are going to make a market for them, a fair market.

So it is not that easy for us. It is not easy at least from my perspective. So yeah, I think I need some help to say well if BP and Tenaska are the only two at this point, we are the top two price reporters according to this data from Platts -- actually on Platts and it is 40 a day, is that okay?

I mean is the average divided by two -- I mean is that good enough? I don't know. But again anything that we can come up with to help and I think we need to put -- I keep going back to it, some more teeth to it. The word encourage doesn't do it for me.

MR. BURDICK: Vince you are next.

MR. KAMINSKI: I was asked this question directly in the morning so I would like to reiterate my position. I think that there is a difference between liquidity thresholds in the case of pipeline tariffs and in the case of voluntary bilateral transactions.

You know in the case of bilateral transactions two consenting adults have the right to assess the index and make a decision whether the index meets their standards and whether it is in their mutual interest to rely on the index.

And I am afraid you know that introducing liquidity thresholds, you know, could have unintended consequences. It could create a downward spiral you know, because once the index doesn't meet certain quality criteria, you know, it effectively suppresses liquidity and makes the situation even worse.

MR. MOFFATT: For whatever they are worth the thresholds there that you have now we rely -- I think as far as pipeline tariffs are concerned, if a point is that liquid and that you discover it through your analytics that you have 13 points, you know publish that. Let us know and we can look at it.

But our customers will tell us. I mean they will tell us if that is no longer valid and we have had that happen over the years, many, many times. And the market does shift and points become illiquid and we make changes.

You know on the bilateral market we have got other data, we will look at it if Platts does an assessment we will decide whether or not we want to use it and in the bilateral the two parties will decide or we will go look at the history and we will figure out what it is normally traded at.

Are we doing a winter deal or a summer deal or a shoulder month deal? I mean the market is very capable of pricing. We don't need mandated government standards as to how we set a price or when an assessment or something else is valid.

And the indices are not all that we use but to the extent we have confidence and to the extent it is there we elect to use them. I mean it is easier PUC's accept them, it is easier from an arbitration or a mediation standpoint, there's a lot of reasons we use them.

As I have said access to data that is developed on an exchange to more parties will create more indices and you will have even more confidence on correlation as to how valid the indices are. And if people want to go out and scare up as Platts and NGI and others have done, people to direct report to them -- they can go out and develop those indices. There's nothing prohibiting it. They can come and talk to Kinder Morgan about reporting to them as well.

You know, I just don't think we need government mandates, I really don't.

MS. BURDICK: I have a follow-up question to that then J.C. can go. So is peer pressure not working? Because I hear that we need to encourage and I hear you guys saying that you need to -- or that some encouragement hasn't happened so do you guys talk with each other and encourage your reporters as well?

MR. FOSSUM: Your encouragement tends to be more forceful.

MS. BURDICK: I know, I know, but you don't want us to either so I'm trying to like find a balance between.

MR. FOSSUM: We have recommended refocusing and making the Safe Harbor really safe and transparent as to how safe and many of us have shared concerns over how you audit the market. I mean I think some of that can encourage people to report.

I mean you have 9 big companies that can withstand it but right now why bother if we are looking at a 400 million dollar penalty? Or I'm looking at a million and a half dollars to defend an audit?

I mean it just -- for some people it just doesn't make sense.

MS. BURDICK: J.C.?

MR. KNEALE: Thank you. Just for the record on the topic of the exchange providing its data we want to continue to provide our data to all of our customers, all the regulators that ask for it -- that's not going to change under the Platts agreement. We are going to continue to provide those reports.

In terms of licensing the data to Platts or NGI or any other third party that is our choice as a business to take a commodity which we have which is data, and license it to somebody no different than it is Tom's decision to sell his data to somebody else.

So I don't think it is necessarily apples and oranges there. I think it is very similar so I think it is a bit disingenuous to argue that we haven't sold our data to him, certainly there's a price for everything I suppose.

We believe there is still competition in the index space just as Curt pointed out. There's nothing preventing a new third party -- Tom, coming in and convinced 100 people to report to him. That would be pretty quality data.

I would be very excited to see it. I'm sure some of the people at this table would be happy to see that as well. So we are -- again I think that some of the things that have been reiterated here over and over the Safe Harbor changes, perhaps clarifying daily versus monthly there are some small changes that FERC can probably push forward that will make a lot of people very happy.

I think some of those changes could be made and then we could observe what happens over the next 6 months, 12 months and see if there have been positive effects. Certainly you have a shift in what's happening with the price reporters i.e. ICE and Platts, ICE and NGI, et cetera so some of that landscape is changing.

You know let's meet back here again in a year and let's see if anything has gotten any better. Hopefully the answer is yes and hopefully that's enough for some of these guys who have real world problems every day.

Again, I'm sympathetic to them but I am concerned about adding additional burden in the form of mandate.

MR. FOSSUM: Thank you. I just kind of got off the subject of the mandatory liquidity thresholds for a minute and then J.C. brought us back to it which is good and I wanted to just make sure I am understanding what that means before I react to what Orlando and Dr. Kaminski and Curt said.

The way I understand the current mandatory minimum thresholds applicable to the pipeline and ISO tariffs is if the liquidity drops below that threshold, let's just think about a monthly cash-out for a pipe.

And the pipe has its index referenced as Houston Ship Channel. Houston Ship Channel falls below the mandatory whatever it is -- 25,000 a day in 10 trades, or 10 trades, or 10 counterparties. If you get to the end of the month and the pipe needs to cash-out but the index has become unusable -- it is my understanding if it is below that threshold, the pipe and its counterparty that needs to be cashed out will negotiate some alternative, is that the way it works?

Okay. Very similar the way it works if we have a reference to their Ship Channel in our contracts and Platts or NGI doesn't publish a price then we need to get on the phone and we need to negotiate an alternative price for that day with our counterparty.

My concern about applying the concept of the mandatory minimum thresholds that are applicable to the pipe and ISO tariffs to the industry's physical trading in general is all that is going to do is create a lot more burden for our traders when they find out that the stack of contracts that they have in place referencing Ship Channel to stick to my example, are no longer capable of being closed that day because the Ship Channel index has fallen below the 25,000 or 10 or 10 threshold and is therefore unusable.

We have a bunch of administrative work to fix those contracts for that day or that month and I'm very sensitive to Orlando's point that we need to find a way to get more people price reporting. We need to get more people trading fixed price.

I don't think this does it. I think it might just create more administrative burden by sort of imposing a one size fits all liquidity trip wire on the entire industry.

Mr. Callahan: Well said you kind of stole some of my thunder there. I think the idea of liquidity thresholds is a difficult one because I think if you had said to someone that if they signed a 10 year agreement that they signed 8 or 9 years ago -- for certain Gulf Coast locations would be having liquidity issues several years later they wouldn't believe you.

And I think that we have talked about the low price environment that we have seen, low-volatility environment from a price perspective but from an infrastructure perspective and the flow of gas and the production of gas in North America that has changed dramatically.

So I think that's just part of the increase in liquidity or the decrease in liquidity is just part of the general ebb and flow of this industry as it evolves right and where people choose to trade natural gas.

So I think that sort of trip wire you mentioned would be potentially problematic and I think it is a situation where as I said before you let the markets decide and the market is very efficient it has evolved over time. The processes that we have talked about today have proven that and I think to interrupt that process or include any sort of mandates, I think would be harmful to the process and have some unintended consequences.

MR. ALVAREZ: So the thing that concerns me or that is in my mind is that yes we are talking about the Safe Harbor doing, you know, proposals, revising it or reviewing it -- the monthly versus daily, and J.C. just touched on it as well, that's all going to take time right?

It's going to take time. You said 6 months to a year I think before you start seeing the real -- it's going to take time. And what you don't want and please do not take it as BP saying we are going to not report, that's not what I am saying.

But what you could start seeing is some of the others just not going to report anymore. Or, a bit of a hybrid is that in some of these points where markets are being made today by one or two or three, that's gone.

Now those utilities or those LDC's or those industrial companies, sorry I'm just not going to take that risk anymore and we are not going to make markets in that area. Some people will do that. That's not what I'm saying but that is going to elevate, it's going to continue to elevate the risk.

Time is of the essence. I came to the FERC two years ago and spoke to Chairman Bay about this and Commissioner Honorable and Commissioner LaFleur. I've been here -- we've been here and the industry I'm sure, I'm not the only one. I've been here for the last two years talking about this because it is a -- and I know I have probably said it 100 times but it is -- some of these points you are going to start seeing some reporters are just going to say forget it, I'm just not going to make markets here.

And then you are going to start getting utilities and state PUC's, you know, now we have to use proxies and we have to use another index plus variable to create this price and then the risk premiums go up because now you have risk you have to manage.

So time is of the essence and it can be a year or two years for this, would be my point.

MR. LEONARD: You certainly have a tough problem here in the U.S. gas markets and it is a problem that you can look to other markets around the globe like you mentioned Europe, you can look to Alaska, you can look to SSB and what they have done on benchmarks in the last five years and learn a lot and some of the principles that have come out of those have fallen along the lines of minimum desirability -- minimum volume thresholds that you want to have to have an index be robust or be a strategic index or depending on the context, somehow a viable index.

And in those contexts, in those markets they have similarities the gas markets, but they also have a lot of differences the gas markets. If you take something like -- if you actually take interest rate swaps or any of the other big financial markets they have a strip of products, 12 months of products where you have a set of currencies but they do not have in many cases the same diversity of price indices that you all have here.

With so many prices in the U.S. geographically spreads that have different characteristics, different desirability's and those change over time. Shale has changed the desirability of where people want to trade, where you all want to trade has changed the physical infrastructure, the ability to deliver gas has changed around that -- it's a very dynamic environment that is not necessarily the same.

And that doesn't mean that the principals will automatically carry over from some of those other financial markets which leads me to wonder and I honestly don't know the answer. If you all tried to apply minimum volume thresholds here in the U.S. what would that mean?

Would that mean that if for some period of time for some index, the various peers around the table here, ICE didn't have a certain amount of volume then they just couldn't publish a price anymore? What happens to the contracts that are written on those prices?

It seems to me that it could introduce more uncertainty looking forward in pricing and building assets around particular points and I think you have to ask the question about whether or not this looks here around the table, Orlando, Drew, Curt and such, J.C. whether entities in the market are able and whether they have the right information in the market to assess those indices to decide whether they would want to trade against them in price index deals against them or whether they need to do something else.

MR. BOWRING: Yes and I agree with a lot of what you said so it is a tricky question for sure but the flip side of all the negatives we hear about the liquidity requirement or a minimum level of transactions is that you have the potential for market barriers -- the potential for people manipulating the index.

The potential of people controlling it for better or worse, I mean that's the other side of it and you know markets don't automatically take care of issues like that so I hear what you are saying but there is also another side to it. I don't think the answer is obviously that you simply don't have a liquidity requirement because then -- so let's just say it is just one party making the market.

I mean do we have -- are we sure we can count on them to make the market in everyone's interest or their interest? So it's a question.

MR. PINKSTON: I wanted to touch just one more time on the idea that regulatory risk -- what is I guess the perception because if someone is not price reporting -- I think it was brought up this morning there could still be a 552 audit. To my knowledge we haven't really pursued a price reporting violation.

I'm just wondering if it is more of just a vague regulatory fear than an actual regulatory risk.

MR. GRINDAL: I think it is a vague regulatory risk because of everything that happened at the turn of the century when it comes to price reporting there are those that have been around long enough that remember that people went to jail, that people were fined a whole lot of money -- those kinds of things just aren't forgotten.

And then with other cases that have come out of the investigations -- whether it is real or not, perception to those people is their reality. So that's why yeah, I think it is a perceived fear.

MR. MOFFATT: There's a sense you are putting your head above the fox hole.

MR. PINKSTON: So I guess the idea is why take the risk.

MR. HAYWOOD: I would also point out that at the -- it's Tom Haywood. I would also point out at the turn of the century we were still using a very different form of price discovery. You know, I was calling you know, traders across the country and getting prices from them.

We don't do that anymore and it's a much better system now.

MR. GRINDAL: You can explain all the facts you want to but there are people with long memories that may not understand all the facts but that's why I say it is a perceived fear.

MR. HAYWOOD: That's true and that's why the Safe Harbor really needs to make sure that if you have, you know, that if you do report, you know, and you report, you know, and report to a broad section, you know, you put your prices out there that there is sort of an assumption that, you know, you are not hiding anything that you are putting these prices -- these are honest trades, you know, that you are not trying to manipulate anything.

I'm just saying it should weigh in your favor.

MR. BOWRING: So I get the fear so but is there any answer to it other than to eliminate the requirement entirely?

MR. GRINDAL: Are you asking Corey or are you asking Cheniere? Just if you ask Corey the answer is no.

MR. BOWRING: I'm asking Corey.

MR. GRINDAL: I say the answer is no.

MR. BOWRING; Is that why because I get the fear but the fear is characterized only as so pervasive that nothing will ever overcome it and you never are going to get more than 15% reporting simply because there's that risk.

I mean that seems possible. I mean Drew you said something very different at the beginning.

MR. FOSSUM: Yeah let me react to that I guess. The fear is pervasive and the key is the cost benefit ratio that each of our companies see in terms of being a reporter or not right? Don't misunderstand my initial comments to mean I don't think it's a close call for Tenaska -- it is a difficult call and we totally respect the decisions of the companies that have decided not to be price reporters because they look at the same costs and benefits that we do and they just tipped the ballots a little bit more in the risk adverse direction. We understand that and we would like to see the Commission and people in these panels today be creative and come up with ways to address that.

I don't know that we have had any magic solutions today but I don't think it is all reality, I think it is also perception okay? The instances where people ended up paying fines solely for price reporting behavior or a long time ago -- and a number of us have been audited since then and have come through the audits just fine.

And the audits are burdensome and time consuming and that's certainly an issue. But in terms of the risk of very significant penalties recently directionally I think the news is positive. I don't know if that's a complete answer but that's our view.

MR. LEONARD: I just want to point out that according to the 552 data last year 45% of the fixed price volume took place at companies that said they report so the notion that 10 or 15% of those numbers that we are throwing around here is what finally gets reported just doesn't seem to be supported by the aggregate data.

With that said, to actually assess index quality you can't do that on the aggregate data, you have to do that on a point-by-point basis.

MR. BEDNARCZYK: To follow-up on that is there any ability or any desire to see that form 552 expanded or modifications that you think would be helpful for market transparency?

MR. LEONARD: As an economist who likes markets I think it would be loads of fun. At the same time I think it is a massively burdensome I imagine for the companies -- and we have assisted companies looking at price reporting issues and I appreciate how massively burdensome it is. It's a real question and I think probably it shades on the answer of no whether it is actually worth the burden.

MR. CALLAHAN: So just to answer that question. I think that would be very burdensome, not only on market participants but also on you to actually take the data and make sense of it.

That is something that Platts and other PRA's deal with every day. A trade at Tedco M3 is going to be reported probably 7 different ways by 10 people. So being able to put all of those trades into a bucket per se and to be able to report the data in a manner that's meaningful is very, very difficult when you are looking at locational granularity.

So another point that I just wanted to mention was in regards to this fear and the perceived fear and effect that when companies weigh the cost benefit of price reporting, the thought is is that the risk outweighs the reward.

And I would argue that one thing the Commission can do is take a closer look at that and think of ways to bring that imbalance back into balance and perhaps the other way right, to make it more of an incentive to folks who price report.

You know the FERC policy statement has a provision in it already where price reporters have to annually have an independent audit of their policies. That report is made available to PRA's at their request and Platts does review those reports at times.

The question is -- is that enough? Is that good enough? That should be good enough right -- for price reporting purposes. If you want to do a separate review of 552 data by all means but from a price reporting standpoint that review is being done annually.

I would argue that closer attention should be paid to those companies that choose not to price report right? Perhaps it's further analysis of their trading activities and an audit of their trading activities and the fact that focusing more on them rather than creating this perceived burden on price reporters.

MS. BURDICK: Any other questions? Any other final comments? Oh -- J.C.?

MR. KNEALE: Happy Fourth of July.

MS. BURDICK: That is a great comment. Well we thank you all for participating today. I think we discussed a lot of issues and then discussed them again in other panels so I appreciate your ability to sit through discussions twice sometimes.

I just want to remind you that you can file comments, post Technical Conference comments in the Docket AD 12-17 they are due at the end of July -- sorry AD 17-12 I got that backwards.

So it is due July 31st. So thank you then for your participation and have a good night.

(Whereupon at 4:59 p.m., the conference was adjourned.)

CERTIFICATE OF OFFICIAL REPORTER

This is to certify that the attached proceeding before the FEDERAL ENERGY REGULATORY COMMISSION in the Matter of:

Name of Proceeding: Developments in Natural Gas Index Liquidity and Transparency

Docket No.: AD17-12-000

Place: Washington, DC

Date: Thursday, June 29, 2017

were held as herein appears, and that this is the original transcript thereof for the file of the Federal Energy Regulatory Commission, and is a full correct transcription of the proceedings.

Larry Flowers

Official Reporter