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BEFORE THE CALIFORNIA ENERGY COMMISSION

In the Matter of:	)	
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CALIFORNIA ENERGY COMMISSION

FIRST FLOOR

ART ROSENFELD HEARING ROOM

1516 NINTH STREET

SACRAMENTO, CALIFORNIA

TUESDAY, AUGUST 16, 2016

10:00 A.M.

Reported by:

Kent Odell

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Gordon Schremp, California Energy Commission

Edie Chang, Air Resources Board

Lynn Westfall (via WebEx), Energy Information Administration

Simon Mui, Natural Resources Defense Council

Jamie Court (via WebEx), Consumer Watchdog

Jay McKeeman, California Independent Oil Marketers Association

Johnny Thomasson (via WebEx), Kinder Morgan

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Skip York, Wood McKenzie, on behalf of Western States Petroleum Association

APPEARANCES

Public Comment

Michael Scheibel, California Air Resources Board

Graham Noyes, Low Carbon Fuels Coalition

Colin Murphy, NextGen Climate America

AGENDA

Page

1. Possible approval of the PMAC meeting minutes of February 8 and April 22, 2016 — 3

2. Outline of Meeting Topics and Objectives — 4
   Description of market-based policies and price spikes
   - Price pressure relief valves from CARB gasoline requirements
   - California inventory requirements for gasoline sellers
   - California forward purchases of CARB gasoline to reduce risk of import shipments

   Gordon Schremp, California Energy Commission
   Edie Chang, California Air Resources Board

3. Stakeholder comments on suggested policies for remediating price spikes — 39

   Lynn Westfall, Energy Information Administration
   Simon Mui, Natural Resources Defense Council
   Jamie Court, Consumer Watchdog
   Jay McKeeman, California independent Oil Marketers
   Johnny Thomasson, Kinder Morgan
   Brad Lucas, Vitol
   Skip York, Wood McKenzie

4. Public Comment — 184

5. Closing Comments — 188

P R O C E E D I N G S

10:09 A.M.

SACRAMENTO, CALIFORNIA, TUESDAY, AUGUST 16, 2016

CHAIRMAN BORENSTEIN: Good morning. Oh, and there's Kathleen. Just in time delivery. So we have a full Committee here?

MR. EGGERS: Yes. Everybody is here now.

CHAIRMAN BORENSTEIN: Okay.

MR. EGGERS: All right. So before we get started, good morning, everyone. My name is Ryan Eggers. I'm the Supervisor of the Transportation Fuels Data Unit. Welcome to the August 16th Petroleum Market Advisory Committee.

Before we get started, I just have a few housekeeping items before we begin for those of you in the room. For those of you not familiar with the building, the closest restrooms are located right behind Hearing Room A on the south end of the building. There's also a snack bar on the second floor, under the white awning.

Lastly, in the event of an emergency and the building is evacuated, please follow our employees to the appropriate exits. We will reconvene in Roosevelt Park, which is directly diagonally from this building towards the southeast. And please proceed calmly and quickly, again, following the employees with whom you are meeting to safely

exit the building. Thank you.

And I'll turn over the meeting to Severin Borenstein.

CHAIRMAN BORENSTEIN: Okay. Thank you very much, Ryan.

Thank you all for coming. If you're here you're aware, we're meeting today to discuss some potential policies that could affect and potentially reduce price spikes in California gasoline. We have, as you can see from the agenda, a very full slate of speakers. As a result, we are, unfortunately, going to have to -- I am going to have to be ruthless in keeping people to time. The plan is for each participant to get ten minutes for presentation, and then five minutes for question and answer. We'll move along through the first five presentations, and then have a lunch break which probably will be kept fairly short. And then the first five are all people from government or NGOs. And then after the break we will have people from industry discussing the same issues.

It's important that we leave enough time for both further discussion with the panel members, once we've heard from all of them, and also for discussion among the panel, among the committee.

As people are probably aware, under the Bagley-Keene Rules for Open Meetings, we are not allowed to have

discussions as a Committee, other than in these public forums. So this is our only opportunity to actually have these discussions. There is no other time where we can have discussions among ourselves. My own view is those rules are quite draconian and are hampering the work of the Committee. But so far, no one has listened to me enough to change them.

So as a result I will apologize in advance and say that we are going to have to run a very tight ship. And therefore I am going to keep time and give people warnings and cut them off promptly at ten minutes so that we have time for questions and answers.

That said, let me just briefly review the three proposals that –

MR. EGGERS: (Indiscernible.)

CHAIRMAN BORENSTEIN: Oh, thank you, Ryan.

Before we get started, I hope the Committee has had -- Members have had a chance to review the minutes from the February 8th and April 22nd meetings. And I hope we can -- if anyone has corrections, now would be the time to raise them. And if not, I hope we can vote on approving them. Any corrections that anybody would like to make to the minutes? Okay.

COMMITTEE MEMBER FOOTE: I'll move approval.

CHAIRMAN BORENSTEIN: I think we should probably

do these separately, because I'm not sure -- well, I think maybe everyone is here.

Approval of the February 8th minutes. All in favor, say aye.

ALL COMMITTEE MEMBERS: Aye.

CHAIRMAN BORENSTEIN: Opposed? The February 8th minutes are approved unanimously.

Approval of the April 22nd minutes, all in favor, say aye.

ALL COMMITTEE MEMBERS: Aye.

CHAIRMAN BORENSTEIN: Opposed? Approved. The April 22nd meeting minutes are approved.

So now I can move on. We'll be discussing three proposals that have been floating around for, certainly, more than a decade and will have been described in previous meetings, but I'm just going to give a quick introduction.

The first, which I think is probably just for shorthand easy to refer to as the price pressure relief valve proposal would be to allow non CARB-spec gasoline to be sold in California with some surcharge at any time. Without any special finding or emergency, an importer or marketer could sell non-CARB gasoline, as long as they pay a surcharge. And a number has certainly not been established, but the idea is something like $0.15, $0.20, or $0.25 a gallon, possible different for selling federal RFG than

selling conventional gasoline.

The second proposal is an inventory requirement for fuel sellers. The idea would be to require every seller of CARB gasoline to hold a certain inventory level equal to a certain percentage of their average monthly sales during normal supply times. If some government entity responsible for the policy determines that there is a price spike or abnormally high prices, it could then temporarily reduce the inventory requirement, and therefore allow additional supplies into the market.

The third is the proposal for California-forward purchasing of gasoline. The idea here is that the risk of bringing fuels supplies, CARB fuel, from out of the country and from other parts of the country into California is significant, particularly because of the time lag which can be three to six weeks before the -- from the time it is first determined that they want to bring the fuel in to the time it actually arrives. And the price of gasoline can fluctuate significantly.

So the proposal is for the State of California to actually take forward positions in the gasoline market that is lock-in prices at which the state will buy gasoline from a seller at a future date in order to reduce the risk to that seller of bringing gasoline to the market, so that if the wholesale price were to collapse, in the meantime the

seller would still be able to sell their gasoline at a pre-agreed price.

So those are the three proposals. I want to encourage speakers to speak to those proposals and not to spend the very limited time we have repeating previous material that we have had from previous meetings, or going off in other directions that might be appropriate at other times but aren't really on point for these proposals. Because of the very limited time we have as a Committee, it is important for us to stay on topic and focused on those proposals.

So with that, unless there are comments from other Members of the Committee, or Commissioner Scott who isn't technically a Member of the Committee but is something, ex officio member, I guess, we will move ahead.

The first presentation is by Gordon Schremp of the California Energy Commission.

MR. SCHREMP: Good morning, everybody.

Thank you, Dr. Borenstein, for that coverage of the proposals, so it will help me skip those portions of my slides and keep to your ten minutes.

So here's what I'll cover. One slide on price spikes, but just the basics are we see a price spike. It starts in the refinery wholesale market. It kicks up wholesale distribution rack prices, which kick up retail

prices. So the damage is done. The whole point is to try to limit how fast the spot price goes up and the magnitude of that price spike. Those are the purpose of the concepts.

So I'll show you the slide. This illustrates. The blue dots are the spot price, and they're kicking up the rack price, the red dots, and retail. So one pushes the other. It's a pretty fast response. And like everyone in the past has said, including Dr. Borenstein, "Up like a rocket, down like a feather," oh, so true. So the whole point, prevent spot from going up as fast as it does. So Dr. Borenstein covered these, so we'll skip that.

So here are some -- I have a series of questions, a series of information points concerning each of these concepts. So how fast could prices go up? How long does it take to bring material in here to resupply? And I want to talk about the gas distribution chain a little bit, because that's pretty important.

So there are quick moves in spot prices. I've grouped them into between, you know, zero and five cents. Then you see what percent of the changes on a business day, from one business day to the next, and you see something about $0.05 and $0.10. In 2015 you had a few more, a larger percent than 2014, which we think is sort of a normal gasoline year. And over $0.10 a gallon you see 12 to 20 percent of the price moves were a much higher percentage

than 2014. So we think it was a much more volatile year.

This chart shows those daily price moves, either up or down. They do both, of course. And you see a much stronger period of extreme changes, both positive and negative, occurring during the period of which ExxonMobil had their issue and couldn't operate their gasoline processing equipment for a period of about 15 months. So volatility seems to have returned to more of a normal pattern of that of 2014 on the far left of that slide.

So how long to get cargo in here? About 7 to 33 days minimum. Here are the breakdown of all the things you have to do, and this would be considered as fast as you could do it, usually longer to make these kinds of arrangements, find a vessel, get it to where it has to be, clear it if it's not vetted, all those kinds of industrial and industry-related practices.

I also want to point out, though, if in fact a foreign cargo, non-complying fuel were on its way to the West Coast and was diverted to the market, clearly it could be shorter than that. But it would be under that kind of particular circumstance and whatever, if that was to be proven or not under the concept.

The final point on this slide is that most price spikes in the spot market up are starting to come back down

within seven days. So in essence, the damage is done to the wholesale rack prices and retail before the cargo can arrive from wherever it may originate.

Jones Act vessels, if it's a U.S. to U.S. port, would have to be utilized. In this construct that Dr. Borenstein mentioned, it's not an emergency. It would be in place all the time. Jones Act Waiver, using a U.S. Flag vessel, it's U.S. crude, it would have to be sort of a White House decision and would have to be, you know, security of the United States is at stake. So waivers of the Jones Act are very, very difficult to get.

So the point is, limited shipping availability, especially along the West Coast. And there's only 51 product tankers in the entire fleet, coast-wide service, and a much smaller percentage are operating the West Coast, and their cost is much higher, two, three times greater than a foreign-flag vessel on a cost-per-day basis.

So how does gasoline get -- we all know how it gets to our storage -- or our gasoline tank in the car, but how does it get to the service stations?

So refineries use mainly pipeline distribution systems. They own parts, segments, their own pipelines if you're like Chevron, or a common carrier, Kinder Morgan distribution system, own no fuel, provide a distribution service. Fifty-five to sixty places were distribution

terminals that exist at load tanker trucks. And tankage at those locations are very limited, and usually sized to the deliveries.

So that kind of system is a just-in-time delivery system and it means you have to have shared tankage. Gasoline from one refinery, two refineries, three refineries end up being mixed in the same common carrier storage tank, the molecules are mixed together, so that's what they have to do. The additive when the tanker trucks load is what differentiates those gasolines when it goes to retail.

So in this system, because of the common carrier system, how would you introduce a non-compliant fuel if you're having to test the other refiners and traders or importers for compliance with the California Air Resources Board Regulations, RVP limits, and things like that?

This is something that the distribution companies do, they keep and retain samples. The Air Resources Board can go in and inspect. So this is, for enforcement purposes for all the others, this would create a challenge, certainly.

And it's also important to note that this kind of system of how the tanks are utilized for importing cargos isn't quite as precisely well-known by us. So I don't know if somebody wants to comment on that, if there's similar issues with that regard.

So item number two, minimum gas inventories. Dr. Borenstein covered the description, so we'll skip that.

So how are tanks used now, and how might that change or how might the tank participants'' behavior change going forward, and a couple comments on the triggers.

So there's lots of different kinds of storage tanks. They're for gasoline blending ponds, so there's blending tanks. I take my gasoline components and put them together, and I have a final blend I'm ready to ship in the pipeline system that's complying. I've checked it and it meets the California Air Resources Board CARB-predictive model recipe.

So how are those done?

In the distribution terminals they cycle full to empty. That's how the distribution terminals work. You do have strategic inventory. That means the storage can sit there for a while, sometimes many months. This would be a trader holding alkalite (phonetic) positions, as an example.

So this diagram, the far right, working storage capacity, full/empty of the working ability of the tank, not always at the tippy top, don't drain it down to the suction line. That's the working storage. That's how storage tanks are utilized in the United States and in California. So that's your sort of working inventory. And so this concept, creating sort of a new bottom line in the tanks, if you

will, will reduce the working capacity of the system in and of itself. So that would be say at the refineries and strategic inventory holding positions.

But as I mentioned, the distribution terminals cycle their tanks full and empty. So if you reduce their limit I don't know what kind of impact that would have on the pipeline cycles and their ability to operate in that distribution system. And hopefully Kinder Morgan can talk about that briefly.

So how would behavior change if this, you know, were to pass and there are traders who hold alkalite, as an example, for spring turnaround, purchasing by refineries that usually comes up, unplanned outages, would they change your behavior? And so that's just an example. There are others. And if there are new tanks constructed, certainly that would introduce more capacity to take care of this one issue I'm addressing. But where would those tanks be constructed? Who would pay? Et cetera. Et cetera. So these are all important questions.

A release mechanism, this came up a lot when we looked at the strategic fuel reserve back in 2001 and 2002, and very important. If you have ambiguity, that's uncertainty in the marketplace. If there's a belief by market participants that there will be a subjective use of the trigger, then that can cause a change in behavior in the

marketplace. If it's very precise language of how, and the market understands how that's being used, you can have a circumstance where you've used it and then you need to use it again, and then you can't play that card again because the stocks are already pulled in, just as an example of an issue to continue looking at.

So this wanders a little bit outside the bounds, but there may be other kinds of storage-related concepts that are intended to have more gasoline available here, not seven, three weeks, seven days, three weeks, six weeks away, but here. So incentives, you know, where would you put that, who would pay, et cetera? So that may merit some additional attention.

The last bit, Dr. Borenstein covered the for-purchased construct. So let's go ahead.

We want to look at how does the system work now? How does the state do this right now? And so I'll show you.

There's a -- the state likes to make sure that the prices aren't going to be too high. So all these prices for the state contracts are linked to what? Posted OPIS prices. So the price goes up, the state pays more. The price goes down, the state pays less. And the vendors, in this formula there is a differential they charge, depending on where. I go travel further afield to deliver, then I'm going to charge you more. It's rather small, half a penny a gallon

to $0.076 a gallon. So that's very small.

The other, cap of the rack cost fee, low carbon fuel center fee, are part of the contract that is bid. The region base market price, that's with OPIS, depending on which rack you're using, Eureka for North Coast, Fresno, Barstow, things like that. So it's almost -- these reflect what the market is doing up or down, but there's not a lot of room here.

So lots of people in this business -- no, two, two companies, and they are not refiners or importers, large markets, and not sure who they're buying from. We know where the fuel is being pulled from. And in some cases only one or two refineries supply to some of these distribution terminal racks. And the cargos are pretty big and they go to one place, usually, or a couple of places where they're unloaded for this kind of concept.

The state, how it's set up now in these open bids which are, as I briefly scanned past in a previous slide, are three-year terms. So these are lengthy terms, and then you're locked in as a supplier under these contract terms. They go to not one place, they go to over 700 locations. So there is, I think, about 720 different locations in these contracts all throughout California are delivery points, Forest Service locations, Caltrans locations, some police, you've got some police departments, you have some Coast

Guard, you have a variety of locations, but they're spread out all over, and not a lot of throughput at each of these locations.

So the state -- the Energy Commission, under contract, has looked at this concept before. And this is just I pulled a paragraph that basically concluded, this process was not going to increase liquidity in the spot market, which is somewhat thinly traded. Although, no, that's not the express purpose, as laid out in the ground rules for this concept, but the other inventory issues that this consultant looked at, they had similar conclusions that you were going to be changing the nature and the availability of the inventory in California as a consequence.

So don't know if the market has changed structurally enough since that time, but that's --

CHAIRMAN BORENSTEIN: Thank you.

MR. SCHREMP: -- ten minutes.

CHAIRMAN BORENSTEIN: Other Members of the Committee with questions? I have a couple of questions, but I don't want to -- okay.

One question on the price pressure relief valve, California refineries make conventional and federally-formulated gasoline and export it; right?

MR. SCHREMP: About ten percent of the gasoline

production in California is for the export market. Predominantly, most of that is going to the states of Nevada and Arizona that have their own gasoline specifications that you could say are boutique. Pseudo-conventional Nevada, pseudo-federal RFG, Arizona.

CHAIRMAN BORENSTEIN: Right. So one of the aspects of the price pressure relief valve is that some of that fuel could be diverted to come to California if the price differential was high enough; right?

MR. SCHREMP: Yes. And therein falls a bit of a rub for how the gasoline is being distributed. There are, like California, contractual obligations to supply those neighboring states. And so an organization or a company would have to then, if making a decision like that, find another means of meeting the contractual obligation in Las Vegas, Phoenix, Tucson.

And we saw this come up, if you will, during -- after the ExxonMobil explosion at Torrance, there was a change in the export of gasoline from Southern California. And some other fuel could be brought in from the east into the Arizona market, and a little bit more from Utah into Northern Las Vegas.

So there is the ability to shift the supply sources of the complying gasolines going to those markets, but it's somewhat limited. So that would still have to be

done, if a decision was made to divert what was already produced and ready to go.

CHAIRMAN BORENSTEIN: So we hear about contractual obligations all the time and I'm sort of puzzled, because at the same time there's a spot market for gasoline. And so there is some residual market for fuel that is being moved around. People are making decisions. It's not all previously called upon. Either those contractual obligations have some flexibility or there's some spare production capacity that refineries still have an opportunity to sell to the highest value market.

MR. SCHREMP: As we see with the production and contractual obligation information that at times is limited, but talking to the companies, you have to say, well, how much is unbranded? And that would be sort of more your non-contracted volumes, and that could be, you know, 10, 15, 20 percent of the marketplace. So a refiner won't necessarily want to have 100 percent of their normal output under contractual obligations. You have a little bit of a bobble, then you're having to buy.

They like having a sub-portion of unbranded, non-supply commitment with customers willing to pay that have proper security and credit clearance. And that's a good situation for that excess supply. So they won't have 100 percent.

So what's going on or can be going on in the spot market is, if you look at the trades, for trades, five trades, 25,000 barrel lots for prompt day, that's ten percent of the marketplace right there, so it's not a large amount.

And to your second point, yes, there's excess production capacity. And clearly that would be above and beyond your normal output, which we saw in 2015 from the Northern California refineries collectively. So, yes, that's some additional production capacity they have in their toolbox.

CHAIRMAN BORENSTEIN: Okay. Amy?

COMMITTEE MEMBER JAFFE: Yeah. I just wanted to add, also, clearly when we were listening, there are U.S. seaborne gasoline available, U.S. seaborne gasoline available that would not necessarily be CARBOB specification. And, of course, some of the California refiners who have material that does not meet the specification are exporting. And so there's a substantial, maybe more substantial than the way you've describe it, amount of flexibility.

And also, refiners are exporting a tremendous amount of diesel fuel. And they could, again, if they had the incentive, depending on the economics, adjust their run cuts to produce more off-spec gasoline and less diesel for

export.

So I think the system probably has a little bit more flexibility; is that correct?

MR. SCHREMP: With regard to the gasoline exports, you know, over 95 percent of the foreign exports of gasoline occur from Northern California which is net long in gasoline production and capability. (indiscernible) saying that most of those contracts are -- I mean, most of those movements are under a contract. In Pemex, up until most recently, is the only buyer for the Mexican market. And they were buying West Coast gasoline cargos, and have differentials to OPIS postings on the spot. And so a refinery has excess long gasoline, can make more money doing it, they venture into an agreement.

So can they break the agreement of a cargo that's been loaded and ready to go, and then have something ready to re-divert back to this market? I suppose that's possible, yes.

COMMITTEE MEMBER JAFFE: Are you saying that all exports from the West Coast are done under contract and none of it spot?

MR. SCHREMP: Well, I don't know if we're --

COMMITTEE MEMBER JAFFE: There's a lot of variation month to month.

MR. SCHREMP: If this is semantics or not, but if

one was loading a cargo and it's going to be making, as we see in watching where the exports go, West Coast, Mexico, ports, plural, they'll make a milk run and drop off at two or three different locations. They'll go down to El Salvador and drop off down there. So they'll make a bit of a milk run. They're smaller amounts of where they're discharging cargos.

So maybe someone in the industry can address it, but I very much doubt that the ship is loaded, it sails, and has destinations scheduled and volumes to discharge based on speculation, not your words, of course, my words. So what I'm saying is that they are --

COMMITTEE MEMBER JAFFE: There's a big difference between making a contract a month or several weeks in advance and making a contract for the entire year to deliver certain volume. I mean, it's a really big difference.

And also, is your contract with Pemex, but then if you have excess, you're sending it to El Salvador? Like I'm no understanding what you're saying. I mean, export levels have fluctuated during the year.

CHAIRMAN BORENSTEIN: And if I can jump in here, one of the things we're hearing about is importers into California worrying they get the product here and the prices collapse. So, obviously, they don't have a fixed price contract at that point, so they do have -- some of that is

being sold at the spot price. Otherwise, they wouldn't worry about the price collapsing.

So, I mean, it seems that there is some flexibility here.

MR. SCHREMP: Well, I think there's a couple of different things here. If you're making a cargo movement and you have a fixed destination point, you're likely going to be making that delivery because you have someone who wants to purchase. How you value the discharged cargo is, from what we understand, based on what the spot price happens to be a day before or a day after your discharge. And, yes, the risk is it can drop significantly from the time you loaded that vessel.

Some cargos can come across, they'll have a more nebulous West Coast. They'll have an option to go somewhere else, and even an option to go through the Panama Canal. And so that's a cargo who doesn't have a, yeah, bring it here, I for sure want that. There is some of those cargos coming sometimes to the West Coast, that's correct. And so those certainly have much more flexibility, like you pointed out.

CHAIRMAN BORENSTEIN: Okay. I'm not doing a great job of keeping us on schedule.

So, Kathleen, you get the last question, and then we've got to move on.

COMMITTEE MEMBER FOOTE: Okay. Thanks.

Regarding excess production capacity, until just a few years ago there pretty much wasn't any, is my understanding, but now there does seem to be. And ideally it would function as a kind of competition aspect and keep prices in check, because it would kick in whenever prices started going high.

What I'm curious about, Gordon, is how much information do we have about excess, you know, excess production and capacity? We know it exists. Do we know how much it is, how often it's used? Whether -- I mean, in 2015, with the outage in Southern California in particular, was it maxed out or was it not? You know, how high do the prices have to go before it kicks in? What do we measure and what do we not yet measure about all that?

MR. SCHREMP: So from a quantitative --

CHAIRMAN BORENSTEIN: In one minute. Sorry.

MR. SCHREMP: From a quantitative perspective, we track weekly production by refinery location. In our data we showed a Northern California-Southern California breakdown. You can see in our charts, in 2015 the production levels almost week in and week out for Northern California were above the top of the five-year high-low band. So that's a demonstration, I did it. How much could they do theoretically depends on relative cost to do that

and, you know, what price was my net back in the market? Because we still saw foreign imports of components and some CARBOB come in. So it wasn't like the Northern California refineries could say, well, we don't need any imports into California. Clearly some came in, and that's certainly because of the relative economics.

And there are refinery operational changes, as was mentioned earlier, about on your cut points, how you operate your equipment, but there are limits to that.

And in some ways my final point is you can bring many, many, many components, process no crude oil and create gasoline. They do this on the East Coast a lot. So I wouldn't be -- I don't want to be flip and say your production capability is infinite, no, but you can bring in even more components and create more gasoline locally if you had the infrastructure to do that. And California really isn't set up like it is in the northeast to do that.

CHAIRMAN BORENSTEIN: Okay. Thank you very much.

We're going to move on to a presentation from the California Air Resources Board. I should have said earlier, I forgot to, that Richard Corey was unable to attend today, so we have Edie Chang, Deputy Executive Officer at the ARB.

MS. CHANG: Good morning, Chairman Borenstein and Members of the Committee. It's my pleasure to be here. Richard does send his apologies that he can't be here today.

So with the admonition about time, I'm going to speed through some parts of the presentation that folks have already covered. One page down. All right.

So the summary of our position, I'm going to start off -- what I'm going to do in this presentation is really focus on the price relief valve, I think, because that's the piece that really talks about the California fuel specifications.

I do want to say, from the air quality perspective, fuels regulations are one of the most effective way that we can reduce emissions. They affect all vehicles on the road. And if we're waiting for new engine standards to come in, those are things that take decades sometimes to turn over engines, especially when you're looking at long-lived diesel engines. And so fuel specifications have been one of the most important tools that we have to reduce emissions to meet our health-based standards historically.

And so for us, this is a really important factor to look at what is the impact of these proposals on public health and how we meet our federal obligations?

We don't believe that the renewable -- that the reformulated gasolines standards have contributed to the recent -- have been a significant factor in the recent gasoline spike. These standards have been in place for over four years, and we've seen other disruptions in the past and

haven't seen this kind of price increase. We are concerned about the length and magnitude of these price increases, but we're not sure that this is sort of the right place to be focusing.

(Colloquy)

MS. CHANG: Okay. Great. Okay, I'm going to skip this slide, because we've had many people talk about what this is.

I do want to talk really quickly about what is already in place to allow the use of non-complying gasoline in California. So currently, there are regulations in place that allow the use of non-conforming gasoline is a variance is requested from the Air Resources Board. This is as a result of legislation that was adopted in 1995. It distinguishes between emergency and non-emergency variances. And to get a variance, basically an applicant has to demonstrate a compelling need, apply to the Air Resources Board, we assess that project, and we have to provide some public notice for that decision if it's not an emergency, and then there is, in statute, a fee of $0.15 per gallon that would be applied.

We've had one variance application made in the history of this program, and it was in 1999, from Chevron. The variance was applied for and was granted within a week. We found that in that case, Chevron never

utilized that variance. They were not able to produce any gasoline. It was a contingency option. And it ended being more economical to secure complying fuel, which would obviously be our preference from a health perspective than to use the variance fuel with a 15 percent fee.

So we sort of teed up some questions, too, about the price relief valve. And the first question would be: Is it effective in bringing sufficient additional supply? The Energy Commission already provided some remarks on this, so I'm going to speak through that section.

The second question from our perspective is: Would it compromise the air quality benefits that we currently enjoy from cleaner burning gasoline?

And then the third question is: From a legal perspective, how can we construct this so that we can continue to meet both state law, as well as our federal obligations under the Clean Air Act?

So the first concern is: Is this effective in bringing additional supply? There's actually been some conversation about this already. And there's a fair amount of detail on this slide. I'm going to propose, I'm going to kind of speed through this piece, because the Energy Commission has already covered this.

Recently volatility of spot prices. This one actually is a little bit different. And this bar chart

basically shows that California spot prices do not appear to be the primary factor when we look at the difference between California markets and other markets.

So this is spot prices. These are prices in L.A. versus Houston. This is based on publicly available data. This is what we had access to. And when you look at the difference in the spot price, taxes and fees, and then retail revenues are sort of what's left, what we see is that we haven't seen a huge -- there's some difference in spot prices, some difference in taxes and fees, but a fair amount of difference in terms of the revenue piece.

So I'm going to move on to the air quality benefits of cleaner burning gasoline. So it's very hard for us right now, because there isn't a lot of specificity in the proposal, to determine what the air quality impacts would be. It depends on what the specific formulation is. We would note that the time of greatest gasoline demand tend to correlate with the times of the greatest smog impact. And so what we might be doing, if we allowed this, is we might be having non-compliant fuel coming in at the time of year when we have the largest smog impact. And this is the time of year where we're trying the hardest to clean our air so that we can meet the air quality standards.

We are also concerned that depending on what the fuel is, you could cause lasting damage to the catalyst if

you had higher sulfur levels occur in non-complying fuel. As our after treatment becomes more sophisticated, the sulfur levels become more and more important in terms of preserving the ability of that equipment to work correctly.

So the other concern that we have is from a public health perspective. If the fee was used to procure mitigation later, it doesn't reduce the health impact at the time that it's happening. So we would likely be seeing increases in emissions, and potentially increases in ozone levels at the time of the highest smog. If there is mitigation, it would be happening later. And it might not also happen in the locations that we were seeing those emission increases.

The third concern is concern about gaining approval from both the legislature and the USEPA. So cleaner burning gasoline has been in place for decades now and is an essential part of our clean air plan to attain the standards. For us to modify our SIP, we would have to go to EPA and say, okay, if we're going to do this, here's another way that we're going to make sure that we make up those emissions reductions, that we're not compromising public health, because we can't backslide on our SIP. So that's one issue that is a concern.

The other issue is that the legislature, as we've talked about, has already set limits on when non-complying

gasoline would be allowed. And I think that would be a whole, you know, additional conversation from a statutory perspective about what additional factors might allow the use of other non-complying gasoline.

I would note that under the Clean Air Act there is the opportunity for citizen suit if we are not complying with our SIP. So it's obviously something we take seriously as the folks that are looking out for public health, as well as, you know, assessing our legal risk.

So our concluding thoughts, like the PMAC and many folks in this room, we are concerned with the length and magnitude of the gasoline price differentials that we've been seeing. Given our understanding of the market, and I think, you know, we've heard some of that from the Energy Commission, too, we're not sure that this concept would provide benefits without compromising the health benefits that we receive currently from cleaner burning gasoline.

CHAIRMAN BORENSTEIN: Thank you.

MS. CHANG: I'd be happy to take any questions.

CHAIRMAN BORENSTEIN: I have questions, but I'll let Dave go first.

BOARD MEMBER HACKETT: Good morning.

MS. CHANG: Good morning.

BOARD MEMBER HACKETT: Does the Air Board have any quantification of the air quality, just benefits of federal

RFG versus California RFG?

MS. CHANG: So I was actually just asking the folks over here. So it's probably a few percent. Like when we look at NOx emission differences, it's probably a few percent. It's a few percent increase in NOx emissions if we went to federal fuels. If we bought higher sulfur fuels in, it could be as high as ten percent. A few percent, when you think about it, doesn't sound like very much. But when we look in an area, like Los Angeles or the San Joaquin Valley and the magnitude of NOx reductions that we need to get in those areas to meet the ozone standards and PM standards, it adds up really quickly when you look at how much fuel we're burning in California.

CHAIRMAN BORENSTEIN: So I have to go back to your slide that suggests that the primary cause of the spike has been retail revenues. I'm pretty sure that's inconsistent with what we have seen before. This Committee, my understanding was that the retail end has been pretty flat on average. And I went back and looked at these data a few months ago. So we'll just have to go back and check --

MS. CHANG: Okay.

CHAIRMAN BORENSTEIN: -- because I think we have a difference of data opinions --

MS. CHANG: All right. And we'd be happy --

CHAIRMAN BORENSTEIN: -- that there's no such

thing.

MS. CHANG: -- to chat with you about that further.

CHAIRMAN BORENSTEIN: I will point out, which I pointed out before, the current emergency waiver system only allows the refiner who has the problem --

MS. CHANG: Yes.

CHAIRMAN BORENSTEIN: -- and claims there is a need. And if you own two refineries and one goes out, you may not have much need at all because you're making a fortune off of your other refinery. And so the incentives certainly are not well aligned with the public interest to only allow the refiner who has the outage to apply for a waiver.

The third point I wanted to raise is it's an interesting point that, and it's certainly true, that we have the biggest concern about these pollutants when quantities are high. We'll have to go back and look at this. Maybe you have an answer to this, I don't expect you would, but that what we're worried about is price spikes. And my understanding is the price spikes haven't necessarily correlated with the highest consumption periods. In fact, we tend to get price spikes during the winter turnover, which is a low consumption period. So I guess it's not obvious to me that it lines up.

This lasting damage to the catalyst, excuse my lack of engineering knowledge, we're talking about something in the refining process here. You're talking about something in the vehicles?

MS. CHANG: The vehicles.

CHAIRMAN BORENSTEIN: Okay. So why isn't -- that's an issue, though, with the current emergency waiver process, too, I would think.

MS. CHANG: It would be an issue with the current emergency --

CHAIRMAN BORENSTEIN: Okay. Okay.

MS. CHANG: And it would depend on how long, you know, we're using non-complying fuel.

CHAIRMAN BORENSTEIN: Okay. And then the last point, which I certainly agree with, that there would be an increase, potentially, actually, I should say, an increase in emissions at some location at some time. And the offsetting abatement might not be or needn't necessarily be at that location at that time.

Are there any studies that suggest that shifting the location and time, or certainly shifting the time, location, I can see the density issue, would necessarily overall harm consumers?

MS. CHANG: Well --

CHAIRMAN BORENSTEIN: That is if, for instance,

you for a while had slightly higher NOx and PM emissions, and then six months later had lower than they would have been, NOX and PM emissions?

MS. CHANG: So the way that the clean air standards work is you're allowed to have certain, you know, exceedances, a certain number of exceedances. And so if we had something like this happen during the ozone season and you had the non-complying fuel come in, we might have more exceedances during that summer, so we have more days with bad air. And the mitigation may happen, you know, it may go into place six months later. And so for that ozone season we might be, you know, if we hadn't had the NOx increase we might achieved the standard. And if we do have that NOx increase we might not achieve that standard.

You know, the reductions would happen six months later. And they would, I assume, last for some period of time. For example, if you ran a car scrap program, I haven't actually worked in that program for a while, but when I worked on it the benefits of the program, depending on the cars, we usually assumed it was about three years, that the car would have gone off the road in three years. So you would have some lasting benefit from the program. But for that first period of time when you're having the fuel that's not as clean, you're having an increase in NOx emissions during that time, that's going to cause a help

impact in that time.

CHAIRMAN BORENSTEIN: Okay. But we --

MS. CHANG: That makes sense. Does that make sense?

CHAIRMAN BORENSTEIN: It makes sense, but I guess it's not really answering the question: What's the total -- would consumers overall, would public health overall --

MS. CHANG: Health overall?

CHAIRMAN BORENSTEIN: -- be harmed?

MS. CHANG: I mean, I think for folks --

CHAIRMAN BORENSTEIN: And we just don't know. It seems --

MS. CHANG: I would say for folks that, you know, suffer from asthma that may be triggered by high ozone levels and things like that, I think that, I mean, this is all sort of speculative; right? Because we don't know exactly what the levels would be, where this would happen, what the atmospheric conditions are during that time. But if you have higher ozone levels, yes, you will have more health effects.

CHAIRMAN BORENSTEIN: Right. But then you'll have lower ozone levels at another time. And so presumably, I would suggest that ARB has not imposed a standard that hits the perfect amount of ozone --

MS. CHANG: I would agree with that.

CHAIRMAN BORENSTEIN: -- every day of the year.

MS. CHANG: I would agree with that.

CHAIRMAN BORENSTEIN: So I think it's not obvious that raising ozone on some days and lowering ozone on other days on net has much effect at all on public health.

MS. CHANG: When you -- so you're saying sort of if you look at the cumulative public health --

CHAIRMAN BORENSTEIN: Right.

MS. CHRISTMAN: -- impact of this.

CHAIRMAN BORENSTEIN: I mean, which is, I assume, what we care about, that is we want to make people healthier. If we could make people a little less healthy on one day and a whole lot more healthy six months later, then that would clearly be a win.

MS. CHANG: And it --

CHAIRMAN BORENSTEIN: And I'm not saying that's what --

MS. CHANG: Yeah.

CHAIRMAN BORENSTEIN: -- would happen. I'm just saying --

MS. CHRISTMAN: And it probably depends on the level of --

CHAIRMAN BORENSTEIN: Right.

MS. CHANG: -- increases.

CHAIRMAN BORENSTEIN: And so I guess I just don't

want us to go ahead assuming that any shift of pollution between days is a bad thing. It's probably, I would guess to a first order, a sort of neutral thing.

Jim?

COMMITTEE MEMBER SWEENEY: As I think about this policy there's about three quantifications that you'd want to look at. And I'm going to ask you particular about the latter, the third of them.

First, you want the price level, a penalty level high enough so that refiners outside California don't decide that routinely it's cheaper to keep shipping non-compliant gasoline into California. You want this temporarily. You want it to be low enough so that it would actually make a difference in times of emergency. But you'd also want it high enough so that the economic consequences to health are lower than the savings we get from bringing the gasoline in.

It's that third one I want to push you a little further. Because in response to your other question about whether you have a cost of these increases requirements, you answered in terms of federal requirements. But do you have a set of costs that once we define a level of emissions that you actually can apply a notion of cost? Or is it more an absolute, you just don't want to have it and you don't put a price or cost per dollar -- per unit of additional ozone or particulates in the atmosphere?

MS. CHANG: So we have plans that are designed to get us to that standard. So that standard is not perfect, it's EPA standard, but that's what we're shooting for. And that's sort of, I think, where sort of the -- it sounds a little sort of absolutist, that's what we're aiming for, comes from is those are levels that are prescribed by USEPA.

I think that what you're asking is if we were looking at just sort of, I'm going to call it the damage that's associated with an emission increase, could you quantify how you could mitigate that damage over some period of time? Is that --

COMMITTEE MEMBER SWEENEY: Yes. And is it -- it could be one of two things. You don't do that calculation, and therefore any number we come up with you can't refute, or you do that calculation and you'd like to at some point lay it on the table so we can use the quantification.

MS. CHANG: I don't think, and I'm looking at Mike a little bit because he has a little more history on the SIP, planning SIP, I don't think we do the calculation that way, that what we're aiming for is the ozone standard and how we get there as expeditiously and cost effectively as practicable. So I don't think we do the calculation that way. Is that --

COMMITTEE MEMBER SWEENEY: No. So you don't do the calculation. But you do decide how tight the

regulations are generally because you don't always meet the federal standards. So you are making tradeoffs, of course.

MS. CHANG: We are making tradeoffs in terms of evaluating, how hard can we push the technology, what's the cost effectiveness of the regulations? So we -- I mean, you have to make tradeoffs as we're developing the plans, and as we're developing the regulations.

COMMITTEE MEMBER SWEENEY: But you don't ask for the damages of different level of emissions in dollar terms?

MS. CHANG: We have not done quantification of sort of the cost benefit piece of that. That's not -- you know, we consider the co-benefits but we have not traditionally valued those, beyond some specific situations.

CHAIRMAN BORENSTEIN: In an effort to keep us on time, Dave, you get the last question.

BOARD MEMBER HACKETT: Actually, it's not a question, a statement.

We've recently completed some analysis that seems to be consistent with ARB's conclusion about where the shift in profitability along the supply chain is. And I've got a little presentation. Hopefully we've got a few minutes late in the day that I can put those up. It won't take maybe two minutes.

CHAIRMAN BORENSTEIN: Okay.

MR. SCHEIBEL: Okay. And if I can, we're not

saying that the --

CHAIRMAN BORENSTEIN: You're mic.

MR. SCHEIBEL: I'm Mike Scheibel with the Air Resources Board.

CHAIRMAN BORENSTEIN: No. I'm not sure your microphone is on.

MR. SCHEIBEL: Thank you. I'm Mike Scheibel with the California Air Resources Board. I have a long history with the Reformulated Gas Program.

We're not saying that the increased margin occurred at the retail margin. We're saying that it occurred somewhere above the spot price, and when you add taxes in. So we figure out how much it costs to buy gas at spot, how much taxes you have, and then what you sold it for. That's where the majority of the increased revenue, relative to a market in Houston, occurred in 2015 versus prior years.

CHAIRMAN BORENSTEIN: Okay. Thank you.

We're moving on to Lynn Westfall from EIA.

Lynn, are you on the call?

MR. WESTFALL: I am indeed. Hopefully everyone can hear me.

CHAIRMAN BORENSTEIN: Okay. We can hear you.

I've looked through your slides and I just want to reiterate that we want to stay focused in order to stay on

schedule on the three proposals. And not that the background isn't important, but we've got a lot of background. And today we're trying to stay focused on the proposals. So if you can stay on that topic, that would be great.

MR. WESTFALL: I will do my best.

Mr. Chairman and Members of the Committee, good morning for you. It's good afternoon for me. In this brief presentation, although I'll be glad to take questions later on, I'd like to provide some historical perspective on an analysis we've done on price spikes in California.

Next slide.

Just by way of background, unlike some of the data you've seen so far, we went all the way back to 2008 to 2015. And we're defining price spikes as the differential in price between Los Angeles retail and the U.S. average. Whenever it trades above it's what I'll call a normal range, which I'll get to in a minute. And most importantly or importantly, all the numbers I'll be showing you are tax corrected. The reason for that is that California had a big increase in their retail gasoline tax, I believe in 2010, which if you don't correct for that appears to be a price spike.

What we found during this period were actually nine periods of price spikes. You see them listed here.

And I'm going to talk about the first seven grouped together because they were very similar, whereas the last two in 2015 were somewhat unique versus history, so I'll be showing them a little bit separately.

Just some caveats. When I talk about the market, realize that it's easy to tie the beginning of a price spike because there's generally an event. It's a little bit harder when a price spike ends to tie that to an exact resupply situation because markets move on anticipation of supplies, not on actual. So if a cargo is known to be landing in a few weeks, the market price will actually decline before it arrives, and vice versa. If it's delayed, prices can rise.

So what do I mean when I talk about a normal price range for gasoline in Los Angeles retail?

Next slide please.

In the years we looked at it appeared that in 2010, '11 and '13 there were very few, if any, notable supply interruptions. So what we found in looking at L.A. retail gasoline differentials is that they normally trade, and I put that in quotations, at about a $0.20 per gallon range versus the U.S. average. And the average overall is about $0.26 per gallon above the U.S. average.

So what that means is in the other years -- next slide -- using that $0.20 range as normal, it's pretty easy

to point out the time periods where we had the price spikes in 2008, '09, '12, and '14. So a little bit of statistics on these time periods are shown on this chart.

Next slide please.

I was surprised to find amazing consistency in the price movement between these price spikes. They all seem to average in the $0.40 to $0.50 a gallon range, averaging $0.47 a gallon range differentials, which is $0.21 above normal. And on the next chart over, they all seem to last about seven weeks. So as I say, they were somewhat consistent in both the price effect and in the duration.

In terms of when they occur -- next slide -- most of them occurred, actually, in the second quarter, three occurrences versus one in the first, one in the third, and two in the fourth. And the reason for that is that the second quarter is the time period in the California refining industry that is the most critical.

And I've tried to show that on the right-hand chart. By normalizing California gasoline demand and California gasoline production, what you see is on the blue line, California gasoline demand jumps up quite rapidly between January and February, and pretty much stays at its peak level throughout the summer. Production, however, is at its lowest point in January and February, primarily because of refinery maintenance. So refineries have to come

back from maintenance very quickly during this very critical first part of the second quarter in order to meet demand levels. And if there are any interruptions in supply during that time period, that can lead to some of these price spikes.

In terms of the volumetric balances -- next chart -- this is where we see a lot of variability. This is the amount of production that was lost during each of the price spikes in our estimation. And you can see, and if you'll remember that the price response was somewhat similar in all of these, it doesn't seem to matter whether you have a loss of production of 2 million barrels or 5 million barrels, the price response is the same. And I think the reason for this is, as I said earlier, market prices are based on market perspectives. They don't know at the time of production loss how long it's going to last. So I think that leads more to the price response than looking back and seeing what the actual production loss was.

During these time periods, when you look at the resupply sources, in our estimation, number one, you'll see the blue, inventory is always the first line of defense in price spike, and has been a significant source of resupply in most of the spikes that we looked at. Imports can be important. In the past you see those green levels that were shipments in from inner PADDs.

I want to say right now that those were all pipeline shipments. In the past there was spare pipeline capacity, both on the line coming in from West Texas to Arizona, and on the line coming from Salt Lake City to Las Vegas. I don't believe, although it would be interesting to ask Kinder Morgan if there is still pipeline capacity left currently.

Now I'm going to turn quickly to 2015.

Next slide.

2015 was different in that there was a double whammy. First of all, there was an overall increase in the differential price levels. Instead of the differentials trading in the $0.20 to $0.60 range, they were trading in the $0.60 to $0.80 range. And then within those levels there were price spikes above it.

The gasoline balances then during this time period on the next chart, you can see here between 2014 and 2015 what changed in both demand and supply. But I'll point your eyes over to the little chart on the side there that I think is better explanation.

There was a shortfall between actually a demand increase in 2015 of 32,000 barrels a day, a production shortfall of 65,000, so there was a total shortfall to be made up of almost 100,000 barrels a day. The largest makeup of the shortfall was imports at 41,000. Then there was the

inventory, followed by pipeline shipments from PADD 3, a reduction in exports, which I think got to an earlier question, and then an increase in pipeline shipments from PADD 4.

It seems strange when we're talking about price spikes that there should be a demand increase. But as you can see on the next page, even though the price differentials were higher in L.A. during 2015, the actual price levels were much lower. So again, part of the issue in 2015 was not just a production lost, it was a strange occurrence where high price differentials but absolutely prices were lower, leading to a demand increase.

And then finally, before getting to some of your questions on the issue of resupply from imports, you can see here where the imports came from versus 2014. First of all, imports tripled from their levels in 2014. I will point out, looking at the lower blue bar, that even though there was a large price incentive to move gasoline into the West Coast, Canada was unable to supply anymore. So I don't think Canada can be looked at as a source of incremental supply.

The biggest source of incremental supply and imports was, as you can see there, the Far East and Europe. In the Far East, you're looking at imports primarily from Japan, Korea, Singapore, and India. And imports in Europe

came primarily from the United Kingdom, France, Italy, and the Netherlands.

So that's the end of my formal presentation, but I will be glad to take any questions that you have. The only caveat I have is that by regulation, EIA is not allowed to get into policy matters. We can't tell you which course of action you should take, but we can tell you our critique of any courses of action that you might take.

And with that, I'll open it up.

CHAIRMAN BORENSTEIN: Thank you, Lynn.

Questions?

So I have a question back on your slide six. So this California gasoline balance, this is an average over seven years.

MR. WESTFALL: If you look at the little footnote, the demand is for the years 2008 to 2015. The production, however --

CHAIRMAN BORENSTEIN: Oh.

MR. WESTFALL: -- is only those years when there was no supply disruption --

CHAIRMAN BORENSTEIN: Okay. But --

MR. WESTFALL: -- '10, '11 and '13.

CHAIRMAN BORENSTEIN: But there is this persistent that we get into February and we get a big production drop relative to demand.

MR. WESTFALL: Correct.

CHAIRMAN BORENSTEIN: And we typically, although I don't think you have the slide with the seasonal pattern, I think we typically see spot prices jump then during the turnarounds.

Why do all refineries run their maintenance in February when it looks like there's a lot more money to be made? Why doesn't somebody do their maintenance in January so that they can be back up in February and make money when everybody else is down? Why is there a turnaround season?

MR. WESTFALL: The turnaround season is generally the first quarter, January, February, March. The reason for that is that that is the lower demand period, typically. It's the time when you can blend more gasoline because you can put butane in and it's not as restrictive as the summertime gasoline. And you really want your refinery units to be up and running at their peak production levels come the beginning of the second quarter to start producing summertime gasoline, and also to meet the peak demands.

Now, I only showed California gasoline balances here. Behind this, of course, are also the balances for Arizona and Nevada, which California refineries do have to supply. And there's a lot more variability there, particularly in Arizona.

CHAIRMAN BORENSTEIN: But still --

MR. WESTFALL: So, yeah, and refiners take their -- and this is not just in California, this is nationwide. Most refiners take their turnarounds in either the fourth quarter or the first quarter so that they can be running that maximum efficiency during peak gasoline demand in the second and third quarters.

CHAIRMAN BORENSTEIN: Right. But if I were one refinery and I were trying to maximize my profits unilaterally, you would think if I consistently saw that I make more money running my refinery in February when everybody else is turning around and margins go way up, that I might try to shift my maintenance in order to be there when everybody else isn't. I mean, what matters to me is not the total demand in the market. What matters to me is how much money I can make selling my gasoline, isn't it?

MR. WESTFALL: It is. Now, I haven't looked at the data in some time, but the last time I looked it for California, actually the highest gasoline margins between crude and spot occurred in April and May.

CHAIRMAN BORENSTEIN: Okay. So we're saying that February and March are not high-spike season; is that what you're saying?

MR. WESTFALL: Correct.

CHAIRMAN BORENSTEIN: Okay. So the problem then is that even though -- are most of the refineries back up in

April and May?

MR. WESTFALL: They are starting back up in April and May, yes, generally speaking.

CHAIRMAN BORENSTEIN: Okay. So we think that it actually does make sense for everybody to be running their turnarounds at pretty much the same time, from an individual profitability point of view, not from society? I'm just trying to figure out what they're doing individually.

MR. WESTFALL: Yes.

CHAIRMAN BORENSTEIN: Okay.

MR. WESTFALL: History would show that that's generally the case. Of course, they plan these a year ahead of time based on historical patterns, which can be wrong in any given year.

CHAIRMAN BORENSTEIN: Absolutely. Yeah.

Jim?

COMMITTEE MEMBER SWEENEY: Quick information question. On your slide eight you have showed the price band to be moving up to the $0.60 or $0.80 level. And then you define spikes as increases above that. How did you determine how to bring up that band from the normal area? Was that simply a price range that we've observed in that time period or was it some calculation of supply and demand, elasticity that would give you a price increase associated with that?

MR. WESTFALL: It refers back to my chart three where I show that during, and I'll put in quotation marks, "normal years" L.A. retail gasoline prices vary around $0.20 a gallon in their differentials.

COMMITTEE MEMBER SWEENEY: Right.

MR. WESTFALL: And I put the same $0.20 variance on chart eight. So even in elevated differentials, a normal variability is still the $0.20.

COMMITTEE MEMBER SWEENEY: Right. So that band, you could say, if you put the band at 20 to 40 percent, you could say that whole time is one big great spike with some smaller spikes as part of it. But you didn't have any analytical basis for moving that $0.20 band up, other than it's sort of the average price that you're observing; is that correct?

MR. WESTFALL: Correct.

COMMITTEE MEMBER SWEENEY: Okay. Thanks.

CHAIRMAN BORENSTEIN: Dave Hackett?

BOARD MEMBER HACKETT: And so from my experience, one of the reasons that the price almost always goes up in February is because in Southern California that's when the transition occurs from winter gasoline to summer gasoline. So the refiners can't make as much summer grade gasoline as they can winter grade. And so that almost always results in a price spike.

Now you do see some arbitragers, some traders, or potentially even some refiners trying to take advantage of that. And so sometimes that trading strategy works out just great for them, and other times it doesn't. And so it's one of those things that you can't count on.

CHAIRMAN BORENSTEIN: Okay. Do we have a technical problem? The monitors here in the room have gone blank, the big monitors. My monitor is still working. Oh, there we go.

Any other questions for Mr. Westfall before -- thank you very much, Lynn. That was very helpful.

MR. WESTFALL: You're welcome.

CHAIRMAN BORENSTEIN: And next we're going to move on to Simon Mui from NRDC, Natural Resources Defense Council. And, Mui, the same concern about time, I turn it over to you.

MR. MUI: Sure thing. Thanks, Chair Borenstein and fellow Members.

I was asked to come to provide sort of from a stakeholder perspective sort of the overview of how we view sort of the price volatility issue, as well as some of the crossover areas with respect to environmental considerations. And so I'd like to just propose that this is sort of a way of -- a list of considerations as you're looking to make recommendations going forward to consider

and incorporate.

Some of the key things that I do want to flag, though, is when you look at the number of gasoline price jumps over the last ten years, one of the things we look at when we look at proposals is the effectiveness to impact some of these causes of price jumps. It will be interesting to compare notes with Lynn. This is a longer time period of ten years. It also looks at two-week moving average, and looks at a percentage increase, and goes back to reports from the Gas Oil Price Services, media reports and AAA, about the reasons for that. So I think we're capturing maybe more price spikes, including global crude oil prices which, obviously, is also actually one of the biggest sources for price spikes in California.

We are, when we look at proposals, also concerned about having refinery accidents, outages, from a public health perspective. You know, a lot of our folks actually are close to Richmond. Our office is close to Richmond. I live very close there, by. You know, back in 2012 over 15,000 people went to hospitals seeking treatment. The ExxonMobil refinery, the local residents also told to shelter in place after the explosion. But there's also, obviously, refinery worker health, and very large consumer costs that need to be looked at and considered when we're looking at proposals and what impact would those do to

reduce these types of incidences?

I won't go into the three concepts. But one of the things, as I step back and look at these concepts, is just some general observations. Many of the proposed solutions are focused really at mitigation after an incident occurs. We tend, from the environmental perspective, to look at solutions that can ideally prevent incidences, whether it's pollution incidences, as opposed to mitigation after the damage has already been caused. And I just want to emphasize that because that is a key component when you're looking at different concepts of different ways to tackle the problem we're hoping the Committee can look at.

The other issue throughout the documents, there does seem to be an issue about information/lack of information causing a lot of supplies not to be coming into California, particularly certainty about price seems to be a big one, but also reducing market power during these incidences, information disclosure about actual, you know, things like planned refinery shutdowns during unplanned refinery incidences, how do those way in here in terms of impact and effectiveness compared to more mitigation related concepts?

So the last part I would just emphasize is also that, especially, we shouldn't forget that demand-side policies can be just as important, that reducing the need

for petroleum, some of our state policies that are increasing alternative fuel supplies can also help mitigate and buffer against gasoline price volatility.

Here on the chart is the existing policies. By 2030 they should be reducing about -- gasoline demand by about 25 percent versus 2010 levels, but pretty significant in an environment where population growth is continuing. And that should actually be looked at as also a diversification and protection strategy.

So the four principles which I started on were really, you know, effectiveness. Will the solutions actually have a measurable effect on reducing those frequencies of the incidence I identified in terms of refinery outages, the duration, as well as the size of the impacts? And when we look at those solutions we ask, you know, do those solutions trade off or reinforce environmental public health and worker safety standards? Obviously, if you can improve safety through safety measures you can reduce accidents, you can reduce price volatility. That is one example of, you know, not trading off the worker safety environment versus field price mitigation, field volatility mitigation.

The third area, fairness, really comes out of concern as we work a lot of with local community groups. You know, where do the costs fall for the solution? Who

bears the primary cost versus who are the parties responsible? Obviously, we also engage in litigation. But a lot of times, when we have problems with a source that went out, that released a lot of pollution, we look at these aspects in terms of consent decrees, in ways to mitigate. And really we aim to have the parties responsible offset those mitigation. And that comes up, I think, in the first proposal concept, particularly.

And then finally, is it legal? Does it fall within current agency authority? And does it comport with other statutes and environmental requirements?

Our thought is on the idea of -- essentially, you know, I have a different way of looking at this, about a permanent waiver or variance for importing non-compliant fuel into the state. It does seem to be effectively the idea of giving a permanent variance or waiver to import non-compliant fuel at -- basically, to create an offset mitigation fund in exchange. And it assumes that that arbitrage window may not be long enough or valuable to import current California RFG fuel. That's a question in terms of effectiveness I think the Committee should look at, whether that really addresses how much can you actually shave off in terms of time? Clearly, there's issues with ocean-going vessels in terms of availability. Will that be lowered if we are still importing fuel from the gulf?

The other issue, I think, is in terms of existing variance processes already in place. Do those need to be modified versus having a permanent waiver in place to address Severin's question about the other suppliers in the market versus the one that went out?

The other question we have is in terms of whether or not this addresses the uncertainty still in terms of providing a permanent variance, whether that's still significant to overcome what seems to be a bottleneck, which is the uncertainty in the price that importers receive if they bring in fuel into California. These are just questions that we have as you look at these different proposals.

One of the concerns, obviously, is in terms of tradeoffs, the idea of an increase in air pollution impacts from bringing in non-compliant fuel. The issue of timing and where those impacts occur are very critical from an environmental perspective. A lot of the communities are already significantly impacted by pollution as it is are in air districts already most impacted by air pollution. Eight out of ten Californians live in counties where there is unhealthy air at certain points in the year. And so those types of tradeoffs, I think, are really critical.

Fairness and equity is a big issue for us, as well. In terms of this proposal, from our perspective it

seems to set up a bad precedence of allowing an environmental requirement to be waived, so long as you can have a mitigation fund at a later date. It goes back to, well, how do we ensure that the communities harmed are actually having projects that are actually mitigating the impacts they suffered. So that nexus issue is a big one, I think you'll find.

The other part of this is, you know, in terms of solutions, it does seem that the public is having to choose here, perhaps between higher prices or more pollutions, whereas when there's a refinery accident, right, it doesn't seem like, well, who is the party responsible for the actual accident? Here it seems like the public is paying twice for mitigating the fuel price volatility issue.

And then finally, legal. From a legal perspective, the State Implementation Plan, California fuel blends are very important to meeting our national ambient air quality standards. Everything is about mitigating and lowering and lowering. And so it is concerning when we are talking about can we trade off certain ozone days to have a higher ozone day one day versus another?

These are ultimately about people we're talking about that are exposed, that are more vulnerable to health effects from air pollution. And I just want to flag that as a major concern here.

And then finally, I do want to recognize that oil companies, through current associations now, are currently claiming use of the proceeds from AB 32 Cap and Trade as a tax. There are similarities here in terms of the idea of having a fee in exchange for an environmental requirement that should be looked at from a legal perspective, as well, to ensure that this is actually upheld in courts, as we currently are fighting on AB 32 Cap and Trade.

In terms of requiring sellers to hold a minimum fuel reserve, our question is whether the reserves -- how large would they need to be to offset a loss at a refinery for some time period? The rules would need to be established to release -- what rules would be established to decide to release the reserve, and which party controls those reserves? And ultimately can this provide a buffer at an unplanned refinery outage?

We didn’t see major tradeoffs in terms of environment, public health or worker safety, so it was a good thing from that perspective. Fairness; would the requirement be on sellers or refineries to hold the reserve? It does seem like the onus would be on industry to take preventative action.

The main question to the Comment is, from your perspective, whether having a fuel reserve would be effective, and how other countries are actually implementing

their own reserves and how effective those have been. So we'd be interested in seeing if this is more effective than a permanent variance.

And finally, state --

CHAIRMAN BORENSTEIN: Simon, you're running over, so --

MR. MUI: Okay.

CHAIRMAN BORENSTEIN: -- at this time --

MR. MUI: I'll wrap it up on this one. This is the last slide. But in terms of state-forward purchasing, one question is, given the issue that there are only two supplier -- two companies now looking at forward purchasing, whether or not having this date, sort of as an actor, really addresses the issue, or rather there's more issues around market creation? Creating a more liquid, deeper market that is more transparent might be a better approach than having the state actually go forward. And obviously, those costs will probably come from public coffers, as well, to fund this. So it did raise some concerns there, as well.

CHAIRMAN BORENSTEIN: Okay. Thank you very much.

I want to clarify one thing. I'm pretty sure it is the case that there are not only two companies who are engaged in marketing gasoline into California. I think Gordon's presentation suggested there are two companies selling gasoline to the State of California. There are

certainly a number of companies who were not on that slide who very much engaged in marketing gasoline in California, Nobel America, Vitol, and others, and could be in the business of selling gasoline to the State of California if it were attractive enough.

MR. MUI: Okay. Apologies. I misheard.

CHAIRMAN BORENSTEIN: Yeah. Are there other questions people have?

Okay, I really want to address this because it keeps coming up. And in one way I share your concern, but in another way, this idea that we should never alter the emissions pattern because somebody might be hurt when somebody else might be helped, or maybe the net effect is positive overall, it seems like there is definitely a concern that when the emissions pattern is what it is right now in terms of annual and seasonal emissions, having a waiver that then is made up reducing emissions elsewhere might overall help consumers or public health and might overall hurt public health.

Do you have any studies or suggestion that you have any idea which way that would go?

MR. MUI: So we, ourselves, don’t.

CHAIRMAN BORENSTEIN: Does anybody?

MR. MUI: Well, I think one of the challenges, honestly, is the breadth and extent of the actual proposal.

Details do matter. And I do think some better -- one of the challenges we had was in terms of, okay, is this anytime during the year a supplier can bring it in? Is this all of the field spec requirements within the fuel California RFG right now, or is just a particular portion of it?

So i think to the extent there isn't really an analysis of that, it would be helpful. But, of course, we come from the standpoint of prevention, from the standpoint of caution whenever we talk about trading off either safety or environment in this manner. And that is primarily because it does set up a precedence, right, for any other standard to basically be traded off, especially when the causation isn't really, in our view, directly because of environmental standards.

CHAIRMAN BORENSTEIN: Okay. I just want to lastly say while I know you didn't suggest it, I think the Committee is well aware that this is about people, and people's health does matter. And that's not -- this proposal is not suggesting that we sacrifice people's health. It's exploring the fact that Californians have spent $10 billion since February 2015 more than they would have spent. That's a lot of money relative to the California State Budget and could be spent on improving people's health in other ways, and has instead gone to profits of refineries, or higher costs anyway.

So I think that the idea that health is part of this certainly is recognized but shouldn't be a barrier to thinking about what we might do about this, while trying to maintain people's public health. If there is a study that says this is a bad idea and here's why, I'd like to see it. And certainly if the Committee had resources, we would want to engage in that sort of study. The Committee has no resources, so that is not something we can possibly provide.

COMMITTEE MEMBER JAFFE: I just want to make a quick comment to contextualize what you're saying. Sometimes in markets, the amount of volume that's needed to change prices at the margin is very small. And sometimes you don't even need to actually bring that into the market to reduce market power, you just have to have the possibility of bringing something into the market and that reduces market power.

So I think the concept that somehow a smart regulation couldn't be set up for a waiver system, the way it's being described is if it's going to flood non-specification gasoline into L.A. And, you know, maybe that's not the right way of thinking about it. Maybe what we're really talking about is that if there are parties out there that are using their undue market power to manipulate the market, or say it hasn't even happened yet but it could happen in the future and you have the governor or somebody,

ARB, having the option to use this lever, the fact that the lever exists will discourage people from exercising their market power, and therefore you might actually never have to lower the environmental standard at all.

And by analogy, make the point, is in this country we have a Strategic Petroleum Reserve. And, you know, people are always complaining about the Strategic Petroleum Reserve because they say we never release it, and therefore it doesn't work. But we can't know the counterintuitive reality as if we didn't have the SPR, would we have had a second 1973 oil embargo. The reason we've never had a second one is because we can release the Strategic Petroleum Reserve.

And so by analogy, that's sort of the way we need to think about some of these rules. If I am a player in the gasoline market who might take undue advantage of an accidental shortfall, but I know that the government of California could bet against me by either releasing a waiver, or if we go with this other option of releasing its futures' position, or by mandating release of inventories, or all three, then I'm not going to take that market (indiscernible), manipulative action, and therefore we might never even have to use the waivers. It's just having them exist gives the governor the option. It's not saying he has to use them. It gives the option of discouraging the kind

of behavior that might lead to a persistent one-year $0.80 premium.

CHAIRMAN BORENSTEIN: Other questions? Comments?

Jim?

COMMITTEE MEMBER SWEENEY: Yes. You talk about this as a permanent waiver. And I understand how you could do that because one, at least the variant that I think we're talking about is that any company at any time can bring in fuel that sort of provides. But have you tried to analyze or could you envision a price level such that it generally is not in the interest of anybody to bring in this non-compliant fuel, except in times of price spikes? And can you envision that price level if you analyze that price level such that nobody would bring in the non-compliant fuel at the rest of the year, the rest of the times, but in a time of price spikes you'd be able to bring in non-compliant fuel much more rapidly than you could have if you didn't have the waiver?

Isn't that what we're talking about? And have you analyzed that? Because I get the impression that you're talking about a waiver for which people would always be bringing in non-compliant fuel.

MR. MUI: Yeah. And I think this goes back to what are we talking about here in terms of actual detailed proposal. It was challenging, again, and I was asking for

papers on whether or not, you know, that fleshed out this proposal, to actually understand, is this a year-round thing or is there trigger mechanisms? Because once you start talking about triggers and limits, you know, then that starts getting fleshed out more about when you can actually utilize this. And then maybe, you know, we're imagining the worst-case scenario, maybe it isn't, you know, but it's hard to do that unless there's actually a fleshed out proposal and analysis behind it.

And I have not seen either the environmental analysis of this, nor have I seen the effectiveness of whether this will work and under what conditions. And those are obviously the questions we're trying to get at.

CHAIRMAN BORENSTEIN: Okay. Amy, you get the last comment, then we have to move on.

COMMITTEE MEMBER JAFFE: Okay. Short, short, short comment.

During Hurricane Rita and Katrina, if people are interested in data, I do believe there were waivers made, just for that crisis, and then they were taken away because they weren't needed anymore. And one might be able to look at ozone for that year in Houston or whatever location was effected by those waivers, and that might give you some information.

CHAIRMAN BORENSTEIN: Okay. Thank you very much,

Simon. Thanks for joining us.

We're going to move on to the last presentation before lunch, and that is by Consumer Watchdog. And this is somebody on the phone, Jamie, or who's joining us? Hello, Consumer Watchdog representative, are you hear?

MR. COURT: I'm here, I am, but nobody's turned the hose. Jamie.

CHAIRMAN BORENSTEIN: You're on, Jamie. Jamie, I'm looking at your presentation, and I'm seeing a number of issues that we've covered before. So given the time limits, I want to encourage you to really focus on the proposals.

MR. COURT: Okay. Well --

CHAIRMAN BORENSTEIN: But it's your ten minutes.

MR. COURT: Thank you. Well, hearing you talk about $10 billion we've overpaid and all the profitability in refineries, we can skip that.

But I do want to point out, since we haven't talked since Exxon-Torrance came back online, that we do have a situation now where the laws of supply and demand the last month really seem to have been suspended in the State of California, because up until yesterday, maybe two days ago, have been seeing the highest retail price in the nation in California, but we also have the lowest spot price for gasoline until a run on the market just yesterday. That's a really abnormal situation. And I suggest, while we're

looking at inventory reforms right now, supply reforms, that something else is really sour in the market.

If you go to number three you'll see the gap we've seen traditionally between the spot price and retail gas price is usually $0.88. But in the end of August -- early August, end of July, we've been paying $1.50 more, $1.50 gap. That's a huge, huge premium.

And it goes back to what the Air Resources Board was talking about, how the spot price is not correlated with the retail price.

If we go to next slide, number four, the cause of that problem isn't a supply shortage. We're doing really well on supplies. The cause of that problem is undue, excessive market power in the hands of four refiners that control 80 percent of the market, or two refiners that happen to control 56 percent of the market, roughly.

Next slide.

And the turning point of all this really was this 2013 Tesoro purchase of BPs assets. When we saw not just the refinery go into Tesoro (indiscernible), but also the retail gas stations of the low-priced ARCO brand, and we've talked in other meetings about some of this, but the gap we've seen at ARCO-branded stations with the unbranded, independent sector at that retail level, the gap in pricing is a big driver of these higher prices in California.

Number six please.

So when we talk about what we can do on supply, I'm just bringing back an investor call quote from the new owner of PBF, which, by the way, I think has done a great job of running that Exxon refinery flat out. But he did say in a recent investor call, "bottom line is there's too much clean product, and the only way to solve this problem is reducing the amount of clean product that you make." And he was talking, I think, on a national level, not just about California. But this is definitely the mentality of this market. And it is both the supply side and a retail pricing problem.

So if you go to the next slide please, let's check on this one idea of inventory requirements, minimum inventory requirements. And Cody has done a good job of pulling together some of the research. I just want to go through it really quickly.

The International Energy Agency requires all member states, including California, to have, you know, a certain strategic reserve. These are the requirements, you know, in six states. We went through this a little bit before, and I think Amy even knows more than we do, but six states met their obligation of a refined gasoline reserve in Europe, Greece, Italy, Luxembourg, Sweden, Turkey, and United Kingdom by having industry maintain those

requirements, but setting a standard by which industry would. Many of the EU nations hold their stocks in this form of refined product, such as gasoline.

If you'd go to the next slide please?

The U.S. has had refined products released in the wake of Hurricane Katrina. And it helped to moderate the problems we had.

There was a previous release, because we are a member nation but we keep our reserves in the form of crude, not refined products, in 1991 during the first Gulf War.

Next slide please.

And clearly in the case of natural disaster, it makes a difference. In the EU the member states have these requirements, they have to hold 90 days of average daily imports, or 61 days of average daily inland consumption, whichever of the two quantities is greater. And there's some flexibility about how that happens. And about a third of the supply must be in specific stocks.

The next slide please.

And in the wake of Sandy, something I didn't know but Cody found, President Obama actually created this Northeast Regional Petroleum Product Reserve, so that is a gasoline supply reserve in New York Harbor, Boston and Maine, to mitigate against problems in a natural disaster.

Next slide please.

So overall, we talked a little bit about the one problem that has to be identified. I think if you were to recommend low minimum inventories, which is something we certainly think can ward against a price spike, the degree really depends upon, you know, whether you believe refineries will abuse the situation because they have too much market share.

But the one question that really remains is, you know, what kind of tanks would have to be built in order to meet whatever requirement that is set by the state. But it does, no doubt create a cushion to prevent either supply manipulation award against perennial inventories and to mitigate against price spikes. Disaster relief, obviously, in the case of a major earthquake is obviously another big part of this.

The con side of it, which is something that until recently, you know, I hadn't taken as seriously as I do now is, look, these inventory levels may no longer be the driver of higher gas prices and gas price spikes.

If you'd go to the next slide?

What we may be seeing is something like the situation now where if you look since June, our supplies in this blue inventory range are up through the roof and yet San Francisco is still paying the highest gas price in America. Until recently, California was paying the highest

gas price in America. Our wholesale gas prices, the spot market gas prices where the refineries have been selling to each other are the cheapest.

And just yesterday they went up about $0.10. And, in fact, I'm just getting a note from Cody, the L.A. spot price just jumped another $0.09, so $0.19 up in the spot price. And the reason being reported by OPIS is that Tesoro, which has this market power on the refinery and the pricing side, bought up the spot market yesterday. And BP just bought up some more product yesterday, as well, which is really kind of interesting, given the fact that PBF says it's flooding the market with product and has too much clean product.

So we see the spot market being bought up by the major refineries. If inventories are growing and prices are remaining high, supply-side solutions are not going to necessarily be a help. They may be a help mitigating a very large, quick, sudden, high price spike. But overall you have to match that against a dislocation that these proposals cause.

Which goes to the next slide.

California's forward purchasing of gasoline, again, it's a very small amount of gas you're putting on the market. Will it make a difference when you have this type of market power?

Next slide please.

The CARB pressure relief valve. You creating a fungible case supply that could increase supplies in times of shortage. It could mitigate against imports -- it could mitigate, excuse me, against price spikes. However, again, there is both the problem that you're giving a policy reward to polluters if it's ever utilized. But in addition, you know, you're fighting against a market that may actually abuse that pressure relief valve in a way that we haven't contemplated because of that excessive market share.

So if you go to the next slide, I think our big problem with what we're seeing right now in this market, we've gotten Exxon back online. We have inventory levels higher than the average, and yet we're still seeing, I guess in San Francisco, a very high, high, high spread with America, the highest price in the nation. And in California it's dropping a bit. It went from about a $0.60 or $0.70 spread to about a $0.50 spread. But now refineries are buying up the spot market, literally as we speak, of this gasoline that they've produced. So it doesn't appear to be a problem simply with supplies.

I would propose that if this Committee is going to make some recommendations it should consider dealing with the real problem here, which is market power. And that would mean limiting refiners to owning just one refinery in

California. That would make a difference. Making refineries divest from retail gas stations to spread control to more players.

One of the big problems we've identified in this and other meetings is this huge spread, $0.30 to $0.40 spread between branded and unbranded prices. It's the same gas. Refiners in Southern California that control 80 percent of the stations through branded contracts are pumping up the price and keeping it artificially high. If we prevented refiners from using that contractual power to inflate branded prices, we would see more price moderation.

And so what I propose is that these proposals, while they can help, I think, all three of them, with a price spike and mitigating against price spikes, they're an awful lot of trouble when you realize that market power is now driving higher prices overall and higher profits overall, and something the industry is used to. And we'd ask that you'd consider going after market power directly, because that is the problem here.

And I'm under by 30 seconds. Thank you very much.

CHAIRMAN BORENSTEIN: Thanks, Jamie. I will make a comment right away that as limited as the Committee's power is, we at least do have the ability to -- well, we have the ability to recommend whatever we want, but I think --

MR. COURT: That's right, you do.

CHAIRMAN BORENSTEIN: -- recommendations that could be actually acted on within the State of California are probably more welcome. And I'm pretty sure that forcing divestiture of refineries is not something that the State of California would pull off.

MR. COURT: I think legally is the State of California can do. It is something politically that probably is just as difficult as any of the other things you're going to propose.

CHAIRMAN BORENSTEIN: But it does raise an interesting point, which is the Federal Trade Commission did a very detailed analysis of the California gasoline market when they reviewed the BP-Tesora asset sale. And I'm pretty sure, and I'll have to go back and look at that, they assumed a free-flowing market for imports at that time. And I'm pretty sure their analysis said that that would be a buffer against the exercise of market power.

And it would be interesting to get one of their experts in to talk about whether the date for the last 18 months is consistent with their ex-ante analysis of what could happen in California. My impression is it's not, but it would be interesting to know their view.

MR. COURT: Can I also add that the Attorney General of California had a condition on that acquisition

that BP would supply its ARCO-branded gas stations at the lowest price with the lowest priced gas. And we may have exceeded the period by which that contract -- by which that agreement is still enforced. But clearly ARCO, Tesoro was selling branded ARCO dealers at the $0.30 to $0.40 price above what it's selling to the lowest price-independent stations.

And so a lot of what was assumed in that deal, or even required in that deal, are conditions that have changed.

CHAIRMAN BORENSTEIN: Kathleen?

COMMITTEE MEMBER FOOTE: I don't want to address that, but I do want to mention that the assumption, in addition to imports, was that excess production capacity now in the system would also function to mitigate price spikes.

CHAIRMAN BORENSTEIN: Yeah. I think more generally, returning to that analysis and how effectively it describes where we are today would be very interesting. I think even technically it is possible for the government to rescind or to revisit a merger after the fact if they find that even if they chose not to oppose it at the time, it has increased market power.

BOARD MEMBER HACKETT: Two things. One is if that FTC study is publicly available, I'd love to see it.

CHAIRMAN BORENSTEIN: I'm pretty sure that there

is some FTC documentation. I'm not sure that it's all publicly available, but there's some record. Or maybe -- yeah. No, this is FTC. There should be.

COMMITTEE MEMBER FOOTE: Yeah. I believe the FTC did issue an explanation that went along with its decision not to challenge that merger, and that is publicly available. It was sort of part of their --

BOARD MEMBER HACKETT: Great.

COMMITTEE MEMBER FOOTE: -- press release. And when we have our meeting, when we talk about some of these market power issues, that would be one of the more recent kind of overviews of what we thought would happen, you know, prior to the 2015 experience. So it's possibly a good one to examine, did it work the way people thought it would work?

BOARD MEMBER HACKETT: Thank you. And then the second -- my second point is that when you look at a lot of the volatility that we've seen in this market that's been around the ExxonMobil Torrance refinery, right, and that could be for any number of reasons but that seems to be singled out, I would say that that's a single refinery.

ExxonMobil didn't have a system out there. It had to divest one of the two refineries it owned in California. And in my view, a network that has more than one refinery in it has synergies. The refineries can send materials back

and forth to help reduce their costs. They can share their labor costs. And they can share feedstocks and the like.

And so a problem in one refinery and a multi-refinery system is not as bad as it by a single standalone refinery.

CHAIRMAN BORENSTEIN: Yeah. And I think that is the perennial trade off when examining concentration in the market, that there are economies of scale in production. And when you don't allow firms to grow large, they don't get the economies of scale, but they also don't get the market power. How that nets out depends on -- obviously, we don't think that one firm should be producing all the gasoline for California, even if there are some additional economies of scale. On the other hand, we wouldn't want every refinery to have a throughput of 10,000 barrels or something.

So where does that trade off is, I think, the critical point. I think the Federal Trade Commission, when they did their analysis, came to the conclusion that the benefits outweighed the potential risks of market power from the BP asset transfer. But it would be interesting to know if their analysis is consistent with what's happened, even more interesting to know if whoever made those decisions and what the experts thought at the time would still believe that those were good decisions.

MR. COURT: I would say also that on the

production side, the production agreements, and even exchange agreement, particularly production agreements seems to have been what got Exxon through this with Tesoro. So on the production side, Exxon got the benefit of its competitors capacity.

However, what's, I think, really jumping out from the time we've seen Exxon come back online is this hold that these refiners have over the branded retail sector and what they can do to pricing in that sector. That's historic anomaly.

We went back, as you recall, you know, and found that $0.04 was the traditional spread between branded-unbranded prices. And now it is consistently $0.30 or more. And that's been going on since last -- for a year, for a year.

CHAIRMAN BORENSTEIN: Yeah. Jamie, you raised that --

MR. COURT: And that --

CHAIRMAN BORENSTEIN: -- and this has come up, and maybe Dave will show data that are inconsistent with this, but when you raise that, like six months ago I went back and looked at the data. And my recollection is that if you look at the spikes in 2015, it is all at the spot level, and that retail margins averaged pretty much where they normally were.

But, Dave, that's not what you found?

BOARD MEMBER HACKETT: And so I'd be happy to put that up, you know, after lunch --

CHAIRMAN BORENSTEIN: Okay.

BOARD MEMBER HACKETT: -- when we've got the time. But, yeah, basically what we're seeing is that there was a fairly dramatic increase in retail margins in '15 and '16 versus prior periods, on an annual average basis.

CHAIRMAN BORENSTEIN: And that is ex-tax, retail price, minus the spot price?

BOARD MEMBER HACKETT: Yes.

CHAIRMAN BORENSTEIN: Okay. Yeah, I'd be interested in seeing that.

Jim Sweeney?

COMMITTEE MEMBER SWEENEY: Jamie, can you talk a little bit more about the proposal to make refiners divest from retail stations to spread control?

My impression is that refiners still can enter -- even if they don't any retail stations, they can have a contractual relationship to sell at a given price for branded versus unbranded, that they would still have just as much control if they did not own any of the retail stations. And in addition, you can have some areas, more isolated areas where one proprietary who has nothing to do with the oil company, but one proprietor can own all or most of the

retail gasoline stations and still have market power there.

So could you explain how your point of making refiners divest would make any real difference?

MR. COURT: Well, what we're seeing is through particularly the DTW price, the Dealer Tank Wagon price, the refiner has, you know, through Dealer Tank Wagon price, and obviously selling at the branded rack, but generally through the Dealer Tank Wagon price, the ability to set, by setting that price on its branded stations $0.30 to $0.40 higher than what's it selling, or selling through a super jobber to the unbranded, independent sector, which it does sell to, it's artificially inflating the street price at the vast majority of gas stations which are unbranded -- which are branded, excuse me, particularly in Southern California where we have a huge -- 80 percent of them are branded.

So by having a contractual right to charge a price that's $0.30 higher or $0.40 higher in some cases than what you're charging to the lowest, to Costco, to an independent, to an unbranded station, well, that can go anywhere. That has the ability to vote with its feet and got to any super job or any refiner or any importer. You are artificially keeping the street price higher because it's not only the price that's dominant in most of the gas stations, but the unbranded sector will gravitate towards a higher price that's closer to the branded price in terms of, you know,

what it's charging the public.

So I guess what I'm saying is this contractual power in the last year, we identified this, I think, at your first meeting when we just started to see it in the unbranded-branded rack prices. But since then we've seen an even bigger differential because we've gotten DTW prices. And then we talked about these dark deals or special deals which are below even the unbranded rack. And if you look at that spread, that's where were get that $0.30 to $0.40 difference.

So what I'm really saying is that when the refiners can have these moments of strong supply, which we have seen over, even with Exxon-Torrance out, the prices have remained high because they have this way of overcharging their branded stations through these contracts which the branded stations have to pay. And the public then gets that added price added on to us.

And so it is -- if we did have a divestiture of branded stations or we required contracts that had some more price equity between the branded and unbranded sector, like what we've seen in the past, the $0.04 to $0.05 spread, or making clear that perhaps that that's already illegal under Robinson-Patman or other federal antitrust laws that are little enforced, that we would have the ability to prevent refiners in times of strong supply and strong inventories

from artificially pumping up the price at their branded stations to keep gas prices higher than the market would ordinarily price them if they didn't have that contractual power.

COMMITTEE MEMBER SWEENEY: It sounds -- I didn't hear a word you said that had anything to do with who actually owns retail stations. Everything you said had to do with the nature of the contracts that they have.

So you would want a contract where you would somehow limit the price that could be charged for branding services as sort of a state price regulation?

MR. COURT: You could either limit the amount of branded contracts that a refiner can have of branded gas stations in a given area, or you could look at the contents of that contract and say if you have a branded contracts your prices need to be based on a spread that's no greater than X cents from the unbranded. Now that would strike an economist, of course, as downright socialist. But the reality is does that control refiners are exhibiting over their branded stations, not the unbranded contracts, not the -- and the independent sales they have, that is the cause of this big price disparity we see.

So I think you could limit in any given, particularly in a rural area, you know, how many stations an owner could have. But I don't think that's the real cause

of the problem we're seeing and we're trying to address.

I think the bigger problem is the nature of that branded station market saturation and the refiners being able to dictate prices at 80 percent of the branded gas stations in Southern California.

CHAIRMAN BORENSTEIN: Okay. We've got two more questions from Amy and Dave.

I'm just going to say, I don't think that strikes the economists as socialist. It might strike the economists as not clear that they will lower the DTW as much as raise the other price if you set a maximum margin between the two.

MR. COURT: Well, that's if you believe markets don't work based on supply and demand. I mean, this --

CHAIRMAN BORENSTEIN: No. No, that -- if you believe in incentives, if you set a maximum margin between the two they either have to lower the DTW or raise the price to the discounters. And it's not at all obvious that they would --

MR. COURT: Well, it should -- look, if we have a --

CHAIRMAN BORENSTEIN: -- lower the DTW.

MR. COURT: If we know that $0.88 is the traditional add-on from a spot price --

CHAIRMAN BORENSTEIN: No.

MR. COURT: -- to a retail price --

CHAIRMAN BORENSTEIN: Jamie, you're starting out by assuming they have a whole lot of market power. And then you're assuming that this would cause it suddenly crumble rather than have them actually --

MR. COURT: Well, I guess what I'm trying to do is -- that's why I cited divestiture in terms of not allowing more than a certain percentage of branded contracts is one way to go because that limits their market power.

CHAIRMAN BORENSTEIN: Yeah.

MR. COURT: That's why I said economists are really (indiscernible) to the other issue, which I understand.

But either way, it's getting a very specific problem, which is the control the refiners are exerting through those types of contracts at the pump --

CHAIRMAN BORENSTEIN: Okay.

MR. COURT: -- through the price, not through supply.

CHAIRMAN BORENSTEIN: Okay. We're running way over, so I'm going to give it to Amy and Dave, and then we've got to break for lunch.

COMMITTEE MEMBER JAFFE: I just want to make a quick comment, Jamie, so you don't -- so to un-confuse the record.

The reason inventories can be high now, and

there's no response to gasoline prices from the inventories if there's market power, is that there's no mechanism to force refiners to release the inventory into the market. Presumably, if the state had an inventory system, an emergency inventory system, there would be a trigger to it where the state would announce that it would like the are release of xyz amount of the inventory into the market, and that would have a price impact, as it does in the IEA system, and as it's seeming to work, hopefully, in the Northeast.

Now I did want to point out, having just been at the National Petroleum Council meetings, that the DOE will be coming out, I think in the next few weeks, with a new proposal for improving the SPR system, with some allocations that need to be made because pipelines have been reversed and so forth in the United States. And that they are considering what could be done for expanding the portion of the U.S. national system that involved gasoline stocks, so just sharing that with the public, that even at the federal level, people are thinking that increasing the government's ability to access gasoline inventories is becoming a more important tool, even federally.

CHAIRMAN BORENSTEIN: Okay. Dave, the last comment, and then we'll go to lunch.

BOARD MEMBER HACKETT: Two points. The first one

is retail gasoline prices in Southern California continue to decrease, according to EIA states. I can see they're down $0.08 a gallon over the last few weeks, while the national average for regular unleaded is flat. That's the first point.

The second point is, I don't know if there's consume just benefit here in the disparity between DTW and wholesale prices. I know I can go to a Costco. The Costco I go to is in Tustin, and the last time I was there it was $2.25. And the Chevron that's catty-corner around the street is about $2.85. So there was a $0.60 spread between the two. And now presumably the Chevron customers are not unhappy paying more or else they'd be at Costco.

CHAIRMAN BORENSTEIN: Okay. We're going to break until 1:00, well, why don't we make it 1:10 so that people can actually get out and get some food, and we will pick it up at 1:10. And we will start at that point with Kinder Morgan. I believe, despite the agenda, we actually don't have representatives from Vitol or Noble Americas; is that right, Ryan?

MR. EGGERS: We've had everybody muted. We were going to check right before --

CHAIRMAN BORENSTEIN: Okay.

MR. EGGERS: -- these presentations --

CHAIRMAN BORENSTEIN: Okay. So --

MR. EGGERS: -- to see if anybody wanted to speak.

CHAIRMAN BORENSTEIN: -- we hope we will still have representatives from all five of the people listed, and we will proceed as we can. See you at 1:10 sharp.

(Off the record at 12:21 p.m.)

(On the record at 1:13 p.m.)

CHAIRMAN BORENSTEIN: Welcome back. It is 1:13. And we're going to switch the agenda a little bit. David Hackett had a couple of things to comment on, a couple of slides that he's going to use for that. And then we're not quite sure, we'll either then go with Kinder Morgan or Jay McKeeman from CIOMA, who I thought we were going to move to the front, but he's not here right now.

So anyway, Dave, if you would like to present your thoughts?

BOARD MEMBER HACKETT: Yes. Thanks, Severin.

So we've seen through this process that people have looked at the components of gasoline prices. And you see this typical stacked bar chart that we've got up here where we're looking at crude oil costs and taxes and refining gross margin. We're trying to understand the various components of gasoline price. And so these are represented in cents per gallon is the vertical access. And then there are from 1999 to 2016 here.

Next slide.

So in this -- and so what we're going to do is we're going to decompose that complex graph in assuming that maybe you can see the trends a little bit better. And here we've taken out the crude oil price. So this is the graph you've seen before but without the crude oil price. And you can see that there aren't any real strong trends over this entire period. But certainly in '15 and '16 the gasoline prices, crude oil prices have been higher than prior periods.

Next slide.

And now we're kind of examining refining gross margin. And we kind of describe this in two ways. The total gross margin is the top of that bar, but the kind of pink is the New York spot minus the NYMEX market. And so you can see that you might think of that as the California effect. And then the refining gross margin, which is NYMEX gasoline minus crude. And a big uptake in '15.

Next slide.

And so then just focusing on the L.A. spot market relative to the NYMEX, the world market, a big uptake in '15. We know all about that. That's the ExxonMobil Torrance refinery.

Next slide.

Okay, so here we've cut away the taxes. And essentially what -- this is roughly a refining margin where

we've assumed, made some assumptions about dealer margins and prices and the rest of that sort of thing. And, indeed, starting in '14 we added a little bit for what my colleague John Fosdick calls regulatory, which is primarily low carbon fuel standards and cap and trade costs. But again, you can see, you know, really kind of from 2007 or '08 onward, an upward trend with a really kind of a pretty sizeable pickup sort of '12, extending into '14, '15 and '16.

And so when the ARB says, you know, we think marketing margins are strong in this period, that's consistent with what these data seem to show.

And so I thought it would be useful to be able to look at these individual pieces. And really, to some degree or other, what you've got here are the facts; right? The facts according to these calculations, you know, tell you what's going on. And it seems that on average, you know, marketing margins are stronger than they've been in the past, and they've been on an upward slope.

Any questions about that?

CHAIRMAN BORENSTEIN: Yeah, Dave, if we look at this figure on page six, it's clear that marketing margins are up. But it looks, from eyeballing it, like there they're up about $0.15, that in 2015 they were up $0.05 or something from 2014, and that in 2016 they're up about $0.15 from 2014. Obviously, they're higher than in previous

years, which is interesting, and might be consistent with the issues that Jamie Court has raised from Consumer Watchdog.

But if you were asking the question, how much of the net of taxes and cap and trade and LCFS price increase is due to marketing gross margin, how much of the spike in 2015, it would be a pretty small part, it looks like. It looks like once you take out cap and trade and LCFS and taxes -- these are all net of taxes, I assume; right?

BOARD MEMBER HACKETT: Net of taxes but with the LCFS and cap and trade --

CHAIRMAN BORENSTEIN: Right, are the light blue.

BOARD MEMBER HACKETT: -- you know, shown in, because is it a tax or a fee?

CHAIRMAN BORENSTEIN: Well, I'm not going to get into that.

But basically, the cost increase from the marketing gross margin increase looks like it's about $0.05. And in 2015 we saw prices go from, in 2014 about the usual differential when you add taxes and regulatory costs and $0.10 a gallon for producing CARB gasoline, $0.10, $0.12 a gallon, to $0.40 more than that on average or something, so this would be a fairly small piece of that.

BOARD MEMBER HACKETT: The marketing margin would be a fairly small piece of that total increase.

CHAIRMAN BORENSTEIN: Right.

BOARD MEMBER HACKETT: a lot of the rest of that is the regulatory fees.

CHAIRMAN BORENSTEIN: Right. Right. But when you take out regulatory fees, the number that we got for 2015 was about $0.40 higher than we would expect it to be normally. Instead of being on the order of $0.35 a gallon higher than the rest of the country, we're on the order on the $0.80 a gallon higher than the rest of the country on average, after you take out taxes, after you take out cap and trade, after you take out LCFS.

BOARD MEMBER HACKETT: You know, we'll go and reconcile those.

CHAIRMAN BORENSTEIN: Okay.

BOARD MEMBER HACKETT: Make sure that we --

CHAIRMAN BORENSTEIN: Well, but in any case --

BOARD MEMBER HACKETT: -- that we've got apples and oranges.

CHAIRMAN BORENSTEIN: -- the number, the $0.05 a gallon from market and gross margin is not going to explain most of the increase in gas prices, even net of all the regulatory and tax costs.

BOARD MEMBER HACKETT: I think that may be right. And so let's go -- let's back up, Ryan, to here. No, let's go to the refining gross margin. California gas prices,

this is really kind of the California refining gross margin -- I'm sorry, give me five please. There.

So there's, you know, something like $0.20 a gallon, or a bit more depending on how you eyeball average from prior periods.

CHAIRMAN BORENSTEIN: This is net of taxes, certainly. Is it also net of cap and trade fees?

BOARD MEMBER HACKETT: Yes. This is strictly the L.A. spot price minus --

CHAIRMAN BORENSTEIN: This is the spot price?

BOARD MEMBER HACKETT: -- the (indiscernible) price.

CHAIRMAN BORENSTEIN: Okay.

BOARD MEMBER HACKETT: Yeah.

CHAIRMAN BORENSTEIN: So this is the part that's not in that other part. And we find that we have gone from an average of about $0.10 a gallon higher over the last 15 years to $0.32 a gallon higher?

BOARD MEMBER HACKETT: That's correct.

COMMITTEE MEMBER JAFFE: I just want to make the point that having served on other committees, that when there was a discussion about the impact of the LCFS there was a study by BCG that said that refineries were close because they'd be so unprofitable. So I just wanted to make a note for the record that that doesn't appear to be what

has happened.

BOARD MEMBER HACKETT: Well, I would say that my view is that it was at the end of the period when things really got -- supply and demand really got tight and it didn't apply necessarily to early on.

But any other questions about this? Because I'd got one other point I'd like to make. I've got one more slide.

Ryan, go to the last one. There we go. Okay.

So these are low carbon fuel standard credit prices. This is sort of the price history from September of 2012. The vertical access in carbon is dollars per metric ton. And you can see here that -- and I want to move my pointer to that point -- early in 2016, go up to the peak, right, so you're about $130 a ton there early in the year. And then the prices seem to come off somewhat. And then by the time it got to around May, they fell off the clip in (indiscernible) that was an airdrop. And so if you were a participant in this market and you held these shares, these contracts, these credits, the value of your holdings was roughly cut in half. It went from 130 to about, what's that, 60 or so, and has recovered somewhat since.

And so we are bringing this up, and the reason this is germane is because we talk about low carbon fuel standard in the past. And so I wanted to point out that we

don't know what caused this airdrop, and I've discussed this with a number of different folks. I think sort of the leading opinion is that at some point in the early summer there were some discussions about trading a low carbon fuel standard for an increase in the timing of AB 32, you know, looking, trying to gain some support for that. And it may very well be the market heard that that trade was in the wind and prices collapsed.

And so I only bring this up to point out that this is a risky market. And if you're a market participant, you trade this market because your business is in renewable fuels, or you're looking to do to a project in the space, you want to build low carbon fuel-producing equipment for California, and all of a sudden your incentives, you know, evaporated.

CHAIRMAN BORENSTEIN: Okay. Thank you. And just to clarify, our last meeting was right around that peak. And at that time I think somebody said the contribution to the price of gasoline in California, given the current LCFS benchmark, is about $0.045 a gallon. So it's now down to about $0.02, $0.025 a gallon; that's right?

BOARD MEMBER HACKETT: Correct.

CHAIRMAN BORENSTEIN: Great. Any other questions of Dave before -- I think we will move.

Jay is here. And since he has to get on a

conference call, we will go to him. And then on to the Kinder Morgan presentation.

Jay? Jay McKeeman of CIOMA.

MR. MCKEEMAN: Good morning, and thank you for the opportunity to briefly address the panel. I'm Jay McKeeman. I'm with the California Independent Oil Marketers Association, so we represent the fuel wholesalers and transporters, and a fair amount of the retailers in the state.

I'm not going to -- I don't have a slide set, and I'm not going to go into extensive detail on conversation on the proposals that were teed up for today. I think my points have been made before me, which is that there is a lot of potential for unintended consequences on all three of the options. And in our experience in this fuels market, every time government starts maneuvering in price space, things happen and they happen in ways that nobody expected them to happen.

So that's, I think, our general caveat on the discussion, that it's complicated. When you pull the trigger, who pulls the trigger? What happens when the trigger is pulled? What does that do to the overall dynamic of fuel supply in the state? There's just a lot of questions involved. And I don't think any of the proposals today have really delved deeply into the consequence

analysis that needs to happen on them.

That being said, in our simple mind there is a way to look at this problem, and that's Southern California is traditionally short on product. If the fuel consumers in the south state want to pay for storage and fuel, a fuel buffer, that's something that could be added to fuel cost in the south state to give them a buffer of supply. And that could be quantified because you need to buy the -- I mean, arrange for the space, whether it's existing space or construct new space, and then you have product that you would need to purchase and place into storage as a supply.

I do agree with Commissioner -- or, I guess Commissioner or Panel Member Jaffe that fairly small amounts of verbiage or intention can have a dramatic effect on the price speculation, because price speculation happens because of lack of knowledge. And if there is a buffer in there of knowledge that says, well, this could happen, do you think that would temper at least the high ends of the peaks? But, you know, there's a lot of work that would have to be done to figure out how to secure the storage, how to secure the supply. And again it gets back into when the trigger is pulled, so there is still that quandary that needs to happen.

But I think in terms of, quote, "internalizing the externality of short supply in the South Coast area," there

is a way to do that and make a proposal to the South Coast fuel consumers that if you want to see some attrition in the risk of the area that you live in, here's the cost and here's how much it will take to provide a buffer.

That's it.

CHAIRMAN BORENSTEIN: Thank you.

Questions or comments?

Yeah, I will just say that I think that I'm certainly aware, and I think we're all aware, that all of these proposals would come with costs. And I think ultimately the person -- the people who are going to bear that cost is consumers, but the consumers are bearing a cost now that since February of 2015 has been over $10 billion above where one would normally expect gasoline prices to have been. And so a bit of cost is something that may still save consumers quite a bit of money if done thoughtfully.

There's no question that unintended consequences happen, and we would want to minimize that. But, of course, there are unintended consequences under the current policy still.

MR. MCKEEMAN: Absolutely.

CHAIRMAN BORENSTEIN: And trying to address those is part of what we're here for.

MR. MCKEEMAN: I guess something that you said just triggered a thought, too.

In the discussion about health effects of bringing in non CARB-spec fuel, there is a health impact, I think. It's definitely -- I don't have the metrics on it, but I believe strongly that there's a health impact in high prices of fuel, especially at the low-income level. That's discretionary spending that is being cut into. And who knows whether you need a fill-up or send your kid to the dentist or, you know, take care of preventative medicine. So there is a health cost to that, too, and just I don't think it's -- well, I don't know if it's quantifiable, but it's certainly there.

CHAIRMAN BORENSTEIN: Dave?

BOARD MEMBER HACKETT: A long time ago, did that strategic fuel reserve report. And one of the things we talked about was the Gasoline Bank of California. Basically, the state owns a tank of gasoline in L.A. And when market participants want to draw on the bank they can do that, but they have to replenish it later.

And I think what I've always thought about that was it wouldn't have to be that much gas to take the steam out of one of these spikes, 100,000 barrels, something like that, which frankly, well, I mean, it sounds like a lot, but in the trading world it's sort of a nominal amount. And so the availability of that kind of stock, I think would be useful.

So you ask yourself, well, why don't the arbitragers, why don't the traders do that? And some of it, I think, in general it becomes the cost. The cost of storage is relatively high relative to other markets, and it's risky. You can put that barrel in storage at what you think is a low price and then, indeed, it becomes a high price later as the market falls away. So often times they don't want to -- you don't see them participating in that market.

And so I think what Jay is suggesting is that perhaps the taxpayers would want to take that on, instead of the market.

CHAIRMAN BORENSTEIN: Jim?

COMMITTEE MEMBER SWEENEY: I full accept your idea that it would additional cost.

Have you gotten any rough quantifications of it? If you were talking about a pretty significant budget, storage, are we talking about an additional price of gasoline of half-a-cent or $0.10? Or do you have any rough quantification, or have you simply not done that at all?

MR. MCKEEMAN: Really haven't done the math because the variables are there. If you're going to build storage, that's certainly a different cost than arranging for excess storage. And I don't know if there is a thing called excess storage in the South Coast. So I haven't done

the math but, you know, that's a little bit above my pay grade. But I think you have access to people that could do that.

COMMITTEE MEMBER SWEENEY: Thank you.

MR. MCKEEMAN: Okay.

CHAIRMAN BORENSTEIN: Thank you.

Okay, we are going to move on to the presentation from Kinder Morgan. That's not it.

Johnny, are you on the call, Johnny Thomasson.

MR. THOMASSON: I am. I am here. I appreciate the opportunity to speak. I think --

CHAIRMAN BORENSTEIN: Well, thank you for joining us, and thank you for allowing us to move the agenda around a little bit.

MR. THOMASSON: Okay. I think probably most of the items that I've got on here, if not all, have already been spoken to or addressed, so I'm just going to kind of go through this fairly quickly.

Next slide.

As far as the pressure price relief valve concept, in addition, you know, using non-CARB gasoline, it's already been discussed, but that would also require an EPA waiver. My experience is, where I have seen those waivers granted, is typically for an emergency-type condition, such as the Hurricane Katrina situation. And I just don't really know

how open the EPA would be to granting waivers as a price control measure. It's something (indiscernible).

In addition to the EPA, there's potentially other regulatory waivers that could be required. An example of that could be a local facility air district permit. Sometimes those can be pretty specific in the requirements for how the facilities are operated. And these regulatory reliefs would have to be in hand, obviously, ahead of the need. By the time the need hit, you could yet -- the waivers, it would probably be too late.

So then speaking to the infrastructure limitations, particularly as far as Kinder Morgan is concerned, there are no surplus tanks that would be available to handle additional grades of gasoline to segregate those different grades of gasoline. And just a typical seasonal gasoline transition can take up to six weeks. So if you chose to make a conversion to a non-CARB gasoline with existing tankage, some of those tank yields that have CARB gasoline in them would probably be downgraded. That would probably be an expense to the consumers, as well as the suppliers.

And then the loading rack configurations obviously would have to change from the additives and product recipe changes that would be required to make that happen. While it's certainly doable, it's just time consuming. And then,

of course, the transition, going back to CARB gasoline once the waiver period is over. As we said, a typical gasoline transition, a seasonal transition can take up to six weeks. So we could be looking at, depending on how many tanks and how much, you know, product we're talking about, it could be up to six weeks to turn these tanks back the other way.

Next slide.

As far as the inventory requirements for the fuel sellers, there's already been discussion about limited tank space. A lot of the terminals, the customers are operating those top to bottom on a seven-and-a-half-day cycle now to the pipeline. If we're going to require them to hold dormant inventory, which is really just an expense for the suppliers, that is going to reduce the operating space and very likely limit their ability to do the business they need to do. I mean, if they're running top to bottom now in seven-and-a-half days and you're going to take up part of that space, that's business they wouldn't be able to manage.

Again, the volatility requirements are changing with the seasons, the RVP of the products, which would also impact the seasonal transitions because you're carrying more inventory. That's inventory you have to convert, so it's going to take more time to do that.

Again, most of these have already been discussed.

And as far as the next slide, the state, you know,

on a forward purchase of gasoline, that's really not a pipeline issue, so I really don't have any comments for that topic.

CHAIRMAN BORENSTEIN: Okay.

MR. THOMASSON: Just to point out a few things that -- how it would impact us and the other pipeline operators in the business.

CHAIRMAN BORENSTEIN: Thank you. I have a couple questions. Maybe I will lead off here.

On the typical seasonal gasoline transition and handling additional grades of gasoline, how does it work now when -- so my understanding is a great deal of gasoline going to Nevada and Arizona is already flowing through California pipelines.

So how does that work now, and why isn't or is that creating the same issues of handling additional grades of gasoline, or why is it?

MR. THOMASSON: Well, the additional grades of gasoline in the pipeline itself is not really the issue. The issue is the terminal storage tanks with the loading racks, because that's where you're storing the product.

And as far as the pipeline goes, once it comes out the end, it's gone. But where you have the storage to supply the loading racks, that's a specific grade of gasoline in those particular tanks. The pipeline can move

the different grades for Arizona or wherever through because it's basically piping all the way through the state --

CHAIRMAN BORENSTEIN: So --

MR. THOMASSON: -- to the delivery point.

CHAIRMAN BORENSTEIN: So my understanding -- so how is the -- I'm trying to understand, are those tanks never used for storing non-CARB gasoline?

MR. THOMASSON: For California markets?

CHAIRMAN BORENSTEIN: For Nevada or Arizona market?

MR. THOMASSON: The product destined for Nevada does not go through the terminal storage tanks that are provided in the markets for California.

CHAIRMAN BORENSTEIN: So is non-CARB gasoline ever stored in California?

MR. THOMASSON: Only as it's required to do so to supply another pipeline.

CHAIRMAN BORENSTEIN: Right. But --

MR. THOMASSON: It goes through (indiscernible).

CHAIRMAN BORENSTEIN: And so it is stored in California?

MR. THOMASSON: I wouldn't say stored. We have breakout tankage, what we call breakout tankage where you bring a product in to stage it for another pipeline's pumping, and that typically is only for a day. It's not

very long, even if it's a day. It really just provides a buffer accumulator to operate the pipeline system. The breakout tankage is really considered part of the pipeline system. It's not a terminal storage tank.

COMMITTEE MEMBER JAFFE: Well, why couldn't you use that if you had a couple of days where you were going to have a special cargo come in or a special batch come in because of the waiver?

And then also, could you explain for the general group here how batching is done in the pipeline and whether there's anything you can do in storage that's related to batching? Because as you know, people do put in the pipeline different grades of gasoline.

MR. THOMASSON: That's correct. And the more grades of gasoline you have the more tankage you have to have to segregate that. And on the gathering system, obviously, you can't bring -- the product doesn't come in at the same velocity, at the flow rates at which it moves out. So you have to have tanks to gather those products to have them staged to pump. And that's where we originate on the source point, and it's takes our breakout tanks to gather that product and have it available to pump. Those tanks are not utilized to supply the loading racks to send the product to market.

Now as far as the pipeline and the batching

through the pipeline, the products are just typically abutted against each other. We will run gasoline jet, gasoline diesel. We do try to stage it. You know, we'll put the Arizona products together versus intermingle a number of California products. But the system just operates on a seven-and-a-half-day cycle. And we'll either speed up or slow down the line to maintain that cycle of product. That way the supply for the market is always being met.

Did that answer your question?

CHAIRMAN BORENSTEIN: So I have one more questions, Johnny.

If there were a rule in place that allowed non-CARB gasoline to be sold, and it particularly allowed it to be sold in one location in California, which I'm thinking -- or a set of locations which would probably be fairly low density populations and ones that are not -- that don't -- that have less of an air quality problem, and so they were occasionally receiving non-CARB gasoline, the problem you're raising is that the pipes can handle carrying, let's say federally formulated to a county that has relatively good air quality, but once it gets there you'd have no place to store it without missing with CARB gasoline?

MR. THOMASSON: That is correct.

CHAIRMAN BORENSTEIN: Okay. And --

MR. THOMASSON: Yeah. Once you've missed it with

the CARB gasoline, it all becomes non-CARB compliant.

CHAIRMAN BORENSTEIN: Absolutely.

MR. THOMASSON: And then when the period is over you've also got to transition that back.

CHAIRMAN BORENSTEIN: So if we're thinking about a rack that's in a sort of rural location or less highly -- less population -- lower-population density county, how many separate storage tanks does a rack like that have? I mean, they don't -- they're not keeping all their gasoline in one tank. Is this a matter of -- I just don't know how the logistics work. Do they have 30 tanks or do they have 3, or how does that generally work?

MR. THOMASSON: Well, and a lot of it is dependent upon, obviously, the market, what's the demand for the throughput of the terminal. If you're moving 3 million barrels a month you're going to need a lot more tanks than if it's 300,000. So it really is just driven upon the size of the market demand from that facility.

CHAIRMAN BORENSTEIN: Can you give us an idea of the range of -- I mean, what are the smaller racks? What does storage look like? And what sort of a medium rack -- I assume there are no really large racks in areas with low population density.

MR. THOMASSON: Yeah. First of all, you're also talking about regular and premium. So obviously, you're

talking about two different grades of gasoline already --

CHAIRMAN BORENSTEIN: Right.

MR. THOMASSON: -- the CARB-compliant. And typically you're going to have a minimum of two tanks for each grade, so you're talking four tanks minimum, even at a small-volume facility.

CHAIRMAN BORENSTEIN: At a typical rack, what are we talking about?

MR. THOMASSON: Again, it can range.

CHAIRMAN BORENSTEIN: The median.

MR. THOMASSON: We've got some facilities that do like 2.8 million barrels of throughput, you know, and just -- and those can have maybe upwards of eight to ten tanks in gasoline storage.

CHAIRMAN BORENSTEIN: Okay. Okay.

COMMITTEE MEMBER JAFFE: Can I ask, also, if somebody had a very small batch of non CARB-compliant gasoline and it got mixed into one single tank of CARB-compliant gasoline, you know, how many days of throughput would that actually represent of off-spec, quote unquote, "gasoline" for the mixture? I mean, first of all, it would be very -- very little of it would be -- the amount it was off-spec would be actually more limited if it was blended with ARBOB material, so you'd have less of an environmental impact when you finally used it, number one.

And number two, you know, if the volume was very small, it seems to me that that might work through the system rather rapidly if demand was high in the middle of the summer or even in, you know, a location, eventually. The number of days that that small contribution into a tank would be, I mean, how often and at what rate does material move in and out of the tank? You know, does the tank un-fill in one day, three days, five days?

MR. THOMASSON: Again, it depends on the size of the tank. I mean, if you're talking about a small tank with a high-volume facility, you're going to turn that tank pretty quick, and it could be as little as a day.

COMMITTEE MEMBER JAFFE: Right. So the point is --

MR. THOMASSON: But if it's a larger tank --

COMMITTEE MEMBER JAFFE: So my point being that if somehow a waiver was given and some small supply of non-ARBOB gasoline was put into a tank and it was mixed with ARBOB gasoline, in one day we might see that product go out, and then it would be finished and you could fill the tank back up with ARBOB gasoline; is that correct?

MR. THOMASSON: Probably not because -- potentially, maybe. I mean, under the regulations today we're not permitted to do that, to mix anything with a CARB gasoline. But if you had a waiver that allowed you to do

that, I mean, it depends on the dynamics and the specifications for the fuel. How long it's going to take you to transition that going back the other way would be the bigger concern because you don't completely empty the tank. You always leave some fuel in it, even when it's, quote, "at the end of the operating capacity." You have to maintain the floating (indiscernible) floating in these tanks for air regulation requirements, which means you have to keep a heel.

COMMITTEE MEMBER JAFFE: And how, in a situation where say by accident somebody delivered an off-spec cargo or your people are using blending, I mean, in the regular operations of business, how is that managed with tanks when you go from one product to another? How is that generally managed in the industry? Forget the whole waiver process. Like what would happen in normal life?

MR. THOMASSON: In normal life, if we had some off-spec fuel delivered into a CARB gasoline tank, we would lock that tank out, tank it out of the rotation of the market, and we'd work with CARB for whatever the requirements were to put it back on spec, or what we had to do with it. But we wouldn't do anything with it without CARB being aware of it.

CHAIRMAN BORENSTEIN: Okay.

MR. THOMASSON: Does that --

CHAIRMAN BORENSTEIN: I'm going to move on to Dave Hackett who had a question.

BOARD MEMBER HACKETT: One way to think about this is that each pipelines pump cycles. And they're roughly seven days long, seven-and-a-quarter days long. And within those cycles they typically will pump unleaded gasoline, which is the high demand product, two or even three times within a cycle. And so that gives you an indication of how relatively constrained the tankage is because it continuously fills and draws down.

So there's not much spare capacity at the end of the pipeline, is the answer. And that's a way to measure that.

COMMITTEE MEMBER JAFFE: Yeah. I was thinking about it the other way around, that the turnover rate is so fast, right, that one would imagine, as engineers, you could come up with a system for testing it and it becomes more and more -- as more and more ARBOB goes back into that tank, it becomes more and more infinitesimal, the fact that there was a slight contamination.

MR. MCKEEMAN: Well, there's no doubt that any contaminated fuel that got into the system and went through would be through the system very quickly, just a matter of days.

COMMITTEE MEMBER JAFFE: That is my point, that

it's just a matter of days.

CHAIRMAN BORENSTEIN: So that raises a question. Again, I'm not aware of how this is actually done.

When is specification? Where is specification testing done? And what happens to a shipment of what was thought to be CARB gasoline that arrives and turns out to be off-spec?

BOARD MEMBER HACKETT: Do you want to go into that now or do you want to reserve a block of time for that one?

CHAIRMAN BORENSTEIN: IS that a long answer?

BOARD MEMBER HACKETT: It's more complicated than you might think.

MR. THOMASSON: Yeah, it definitely is.

CHAIRMAN BORENSTEIN: I think we need to understand this if we're going to talk about the -- gives us your best few-minute answer.

Johnny, you want to --

BOARD MEMBER HACKETT: Okay.

CHAIRMAN BORENSTEIN: -- or Dave.

BOARD MEMBER HACKETT: Johnny, why don't you go first, all right?

MR. THOMASSON: Okay.

BOARD MEMBER HACKETT: Because I not the --

MR. THOMASSON: Well --

BOARD MEMBER HACKETT: You're the guy that's doing

this every day.

MR. THOMASSON: Okay. We have the specifications from the refineries that have to give us specs of the fuel before it's brought into the system, and it has to meet the specs of the product being shipped. We've become aware of something going down the line or in the system through our own oversight testing, if we catch something that's off-spec we're going to isolate that at a terminal.

And obviously, then we're going to work with the customer and with CARB, or whatever the appropriate regulatory agency is to the remediation and mitigation steps that get beat out. And that could be as simple as blending it down, or it could be as complex as having to declare the entire contents off-spec and truck it back to the refinery. I mean, it just depends on the circumstances of the contamination. And we've had it go both ways.

So it's really a little bit more complex. It's what's the content? What is the contamination? What was the contaminating product? You know, what's the volumes? Can it be salvaged at all? Can it be salvaged at all. Can you downgrade it and make it something else?

COMMITTEE MEMBER JAFFE: So I think my point is if you had a purposeful contamination and then a purposeful cleanup as part of a waiver process, that is something the industry could manage. And we're talking about maybe a few

days. We're not talking like two months later we still have this contamination problem.

MR. THOMASSON: Well, let's think about it from the aspect of a seasonable RVP transaction. That's a purposeful change in the product codes. And it typically takes us about six weeks to transition completely the system through that. That's from the refiner supplying us the product ahead of time, well ahead of --

COMMITTEE MEMBER JAFFE: But that's the entire system for the entire state in every single location as opposed to one place with one batch. So I don't think that's relevant.

MR. THOMASSON: That's correct. But bear in mind, we manage a battery of tanks. It's a comingled system. We don't manage segregated tankage for -- let's say 100,000 barrels of regular gasoline is not a segregated tankage pool. That's a pool of tanks that operates as one system.

COMMITTEE MEMBER JAFFE: I'm just saying that, you know, I mean, think about it, like for the laypeople in the room. Let's imagine that I've got my bottle of water here, and we put in one tiny drop of yellow food coloring. You know, how many times do I have to fill this up before you can't see the yellow food coloring anymore and it's no longer important; right?

So I think the point is when you're talking about

like a three-day waiver or something of that ilk, we're talking about a very short, concentrated process where you're going to pick one location or two locations and you're going to allow some change in those locations, and then you're going to convert it back. And it's even going to be comingled.

It seems to me that the process by which you'd get back to restoration is not going to be the same thing as doing the entire state. It could be actually -- it's still a cost and it would still be something that has to be done and retested and so forth. But the burden of it, I think in the way people have been talking about at the beginning of this hearing, made it sound very, very extreme where I don't think it's quite as extreme as we're talking about because it's just about having a tank or two tanks somewhere in the state that have to be then -- you know, stuff will flow through it and eventually it will have no contamination again.

MR. THOMASSON: That's a simplified concept. I'm not sure at the end of the day it's really going to be that simple. There's other impacts, as well. Let's just say this is an intermediate delivery point along the mainline pipeline system. Now you're talking about all the barrels in that particular batch has got to come off the pipeline at the one delivery location. It could be we're slowing down

the pipeline because we can't basically just take a portion of the stream as it goes by. They have to take the entire stream as it goes by.

And it's not just, you know, Kinder Morgan. It's also the customers that have their own facilities we deliver to, as well. They're going to be impacted by such a rule, as well.

It is a bit more complex than just putting a drop of food coloring in a jar.

CHAIRMAN BORENSTEIN: Thank you. Before we let you go, Ryan, do we have any more word on who else we have coming?

MR. EGGERS: Our plan was to unmute everybody, and then have you make the announcement --

CHAIRMAN BORENSTEIN: Okay.

MR. EGGERS: -- and ask if there are --

CHAIRMAN BORENSTEIN: Okay.

MR. EGGERS: -- any participants.

CHAIRMAN BORENSTEIN: Okay. Johnny, I'd like to ask you sort of questions in a different direction, and that is about importing CARB gasoline. If I'm trying to bring CARB gasoline into the state, there's a bunch of stuff that happens outside the state in terms of getting a tanker and finding a refiner and having them produce CARB-spec gasoline, and so forth.

Can you walk us through what happens once that tanker approaches a port in California, and how it gets to a set of pipes, and what the intermediate steps are that get it from a tanker out on the water to the pipes?

MR. THOMASSON: I can speak to the process, as far as Kinder Morgan goes --

CHAIRMAN BORENSTEIN: Yeah.

MR. THOMASSON: -- here in L.A. I mean, we, obviously, we have a dock in the Port of L.A., a berth there we operate. And the customers have to nominate before the ship arrives. So we have to know what the cargo is, the product specifications, you know, the flag, where it comes from. There's specific information we require from the customer prior to accepting the nomination. And if we can accommodate it at the dock, we will allow the vessel to come to the dock.

Once it gets there it has to have the requirements, you know, clearance from customs, fire department, Coast Guard, all the regulatory agencies, you know, to allow the ship to conduct the business. Of course, then we would hook up our hoses, get the final clearance from the fire department, and start the discharge of the vessel to our facility for whatever tankage the customer has designated it goes into --

CHAIRMAN BORENSTEIN: And just so --

MR. THOMASSON: -- (indiscernible).

CHAIRMAN BORENSTEIN: And if I can just pause you there, the tankage, is that owned by Kinder Morgan, or is that owned by the customer, or is that owned by a third party?

MR. THOMASSON: It's owned by Kinder Morgan and typically leased by the customer.

CHAIRMAN BORENSTEIN: Okay.

MR. THOMASSON: So once it goes into the tank --

CHAIRMAN BORENSTEIN: Is that a long-term lease, or do they sort of lease it as their -- just for a few days as their -- from the time their shipment arrives to the time it goes into the pipe?

MR. THOMASSON: I don't know that we have any leases that are that short term. They're typically a little more long term than that.

CHAIRMAN BORENSTEIN: Okay. Okay. Okay. So --

MR. THOMASSON: And these vessels typically can accommodate somewhere up around 300,000 barrel cargo or less.

CHAIRMAN BORENSTEIN: Uh-huh.

MR. THOMASSON: So then they bring the product in and it's distributed however the customer wants it to go, just like any other product on the system.

CHAIRMAN BORENSTEIN: Meaning they then have to

nominate for space on the pipe, and when space is available their product us put into the pipe and taken to wherever it is supposed to go?

MR. THOMASSON: Yeah. Yeah. The Berth Act 118 at Port of L.A. discharges to our Carson Terminal Facility. And from there we have connections back to all the refineries in the L.A. Basin, except one. So the customers have the option of moving it back to the refinery, or obviously moving it over through our mainline system for destination down the pipe somewhere.

CHAIRMAN BORENSTEIN: Okay.

MR. THOMASSON: But they would have to nominate the barrels to go down the pipeline, that is correct.

CHAIRMAN BORENSTEIN: And so that's Kinder Morgan's operation in L.A. How many --

MR. THOMASSON: Correct.

CHAIRMAN BORENSTEIN: And that is, in a sense, open to any marketer who wants to bring gasoline in; is that right?

MR. THOMASSON: Well, they've got to have a tank to store it in, but, yes.

CHAIRMAN BORENSTEIN: Right. And the tank they are generally leasing from Kinder Morgan?

MR. THOMASSON: That's correct.

CHAIRMAN BORENSTEIN: Are there other facilities

like that, that are open to general imports that are not completely owned and operated by one company for their own use?

MR. THOMASSON: Yeah, I really wouldn't want to speak for anybody else's business.

CHAIRMAN BORENSTEIN: Are there -- okay. Can you just answer, are there any other ways of importing gasoline into California?

MR. THOMASSON: Well, I'm sure there's other docks available that are capable of bringing products in, yes.

CHAIRMAN BORENSTEIN: Okay. And you can't speak to like how many there are? Or maybe I can get Dave Hackett --

MR. THOMASSON: Well, as far as --

CHAIRMAN BORENSTEIN: -- to speak to that. Okay.

MR. THOMASSON: I really wouldn't want to, like I said, speak about other customer's business. I mean, there obviously are other docks in the Port of L.A. or Port of Long Beach that are capable of bringing products in.

CHAIRMAN BORENSTEIN: Okay. Before we let you go, Jim Sweeney has one more question, and then I'll ask Dave my questions.

COMMITTEE MEMBER SWEENEY: Just to follow up on that line of questioning, I think you've dealt with this at an earlier point, but I want to confirm. During this whole

period of high prices, did you always have excess capacity so you could have brought in more gasoline from -- that somebody wanted to ship into California? Or to put it in a different way, was there any limitations from any of this process that would have stopped you from increasing the flow of gasoline into this state if somebody was to bring cargos in and wanted to use it? And that's it.

MR. THOMASSON: There's been periods of time when our dock has been capacity. I mean, you know, we've got ships back to back to back. That would be a limiting factor. And as well as what's the customer's ability to handle their product, their tankage, in the Carson Terminal.

COMMITTEE MEMBER SWEENEY: But it --

MR. THOMASSON: So that would be --

COMMITTEE MEMBER SWEENEY: The question was: Is that a rare occasion during this last year or was this a normal occasion where you were -- the pipeline or the ability to import was really the limiting constraint?

MR. THOMASSON: I would say our dock was quite a bit busier during this period of time, but I wouldn't necessarily say we were turning customers away.

COMMITTEE MEMBER SWEENEY: Okay. So you're saying to whatever extent caused the prices to go up, it wasn't that there was a physical inability to import more gasoline?

MR. THOMASSON: No, I don't believe so. No.

CHAIRMAN BORENSTEIN: Great. Thank you very much. And we appreciate your joining us today.

So, Dave, you had --

BOARD MEMBER HACKETT: Sure.

CHAIRMAN BORENSTEIN: -- some answers.

BOARD MEMBER HACKETT: Sure. All the refineries have the capability to import products into their refineries. In addition, in Los Angeles, in addition --

CHAIRMAN BORENSTEIN: Wait. Can you just clarify, what does that mean, they have the capabilities? They actually --

BOARD MEMBER HACKETT: They have docks.

CHAIRMAN BORENSTEIN: -- own a port? They have their own docks?

BOARD MEMBER HACKETT: They have docks and tanks and pipelines, so they can and do bring gasoline and gasoline-blending components into the refineries from ships.

CHAIRMAN BORENSTEIN: Okay.

BOARD MEMBER HACKETT: It's not an unusual thing.

In addition, there are --

CHAIRMAN BORENSTEIN: Can I ask you one more question about that? There are some refiners that are inland. There are a couple refineries in California that are not on the coast.

BOARD MEMBER HACKETT: Yeah. The small ones in

Bakersfield, for example.

CHAIRMAN BORENSTEIN: Right. And the don't have --

BOARD MEMBER HACKETT: No.

CHAIRMAN BORENSTEIN: -- port facilities?

BOARD MEMBER HACKETT: They don't have access to the water.

CHAIRMAN BORENSTEIN: Okay. So the ones who do have port facilities, are all of them able to produce CARB gasoline at the refiners or are there some who actually are not in the CARB gasoline business --

BOARD MEMBER HACKETT: No.

CHAIRMAN BORENSTEIN: -- but could import?

BOARD MEMBER HACKETT: No. The large refiners are on the coast. And the Bay Area and L.A. all produce CARB gasoline.

CHAIRMAN BORENSTEIN: Okay. So those are all companies that are already in the CARB gasoline business?

BOARD MEMBER HACKETT: Yes.

CHAIRMAN BORENSTEIN: Okay. Sorry.

BOARD MEMBER HACKETT: And then in Los Angeles there are four commercial facilities that have the capability to take in cargos. Kinder Morgan is probably the biggest one. Shell has a logistics operation in Los Angeles, not connected to a refinery. So they've got a big

terminal in Carson that's connected by pipe to the water, and then to the Kinder Morgan distribution system, and to their own internal terminals.

Tesoro has a large commercial facility that they essentially inherited from ARCO. ARCO built it originally. It was ARCO Terminal and Services Corp., ATSC. So that's three. The fourth one is Chemoil has constructed some tanks in transition from doing fuel oil to doing gasoline. So they've got a fair amount of gasoline storage capacity, as well as a dock.

And then on this subject I want to point out that Kinder Morgan is about to lose its import dock in Los Angeles. The port is going to take that over and convert it to containers. And, you know, presumably Kinder is going to move over and share a dock with Chemoil over in the Long Beach side. But that's in my view, going to constrain the ability to import gasoline into that market.

CHAIRMAN BORENSTEIN: When is that going to actually happen?

BOARD MEMBER HACKETT: I don't know.

Jimmy, do you have a date on that?

CHAIRMAN BORENSTEIN: Johnny?

MR. THOMASSON: Well, we are in the -- we are working with the Port of L.A. on, first of all, an extension for the existing facility to allow us to relocate that

facility. So we're going to be there several more years, probably. But, yeah, I wouldn't expect that to be happening before -- for another four or five years.

BOARD MEMBER HACKETT: Okay. So that's not going quite as fast as I originally thought.

And then I'd also add that there's a fifth facility, Petro Diamond has a terminal on the water in Long Beach with connections into the pipeline network.

CHAIRMAN BORENSTEIN: So these are all Southern California?

BOARD MEMBER HACKETT: Yes.

CHAIRMAN BORENSTEIN: Are there any Northern California facilities that are open to marketers?

BOARD MEMBER HACKETT: A third party, a place that's capable of taking cargos of gasoline would be the Plains Martinez Terminal. That's sort of in between Shell and Tesoro and Venetia.

CHAIRMAN BORENSTEIN: So all of the refinery docks could take somebody else's gas? They could, in theory, lease their facility to somebody else to offload product?

BOARD MEMBER HACKETT: Well, and generally what they would do is they would bring that product in for their own account. They'd buy that from somebody and bring it in and do what they needed to do with it.

CHAIRMAN BORENSTEIN: So they do not operate as

logistical support for marketers, they will actually -- if it's coming into their dock, they're buying it?

BOARD MEMBER HACKETT: That's right. It would be very unusual for them to be doing that for a third party.

CHAIRMAN BORENSTEIN: Okay. And four you mentioned in northern -- in Southern California, your understanding -- actually, five, including Kinder Morgan, your understanding is these five, if I had all of the paperwork in order I could go to these facilities and say I have a tanker coming in next week, I would like to purchase -- well, I guess I'd first have to get a longer-term storage agreement to store it there?

BOARD MEMBER HACKETT: And so I think these public warehouses; right? And so sometimes if demand is strong the warehouse is full and you can't get in. And so you might very well want to take a long-term lease, and sometimes you're using it and sometimes you're not. But you want to make sure that you're guaranteeing yourself space when it comes time to really need it.

CHAIRMAN BORENSTEIN: So do they sublease or --

BOARD MEMBER HACKETT: Yes.

CHAIRMAN BORENSTEIN: So if you were just an independent marketer and kind of bringing a tank in, a tanker in, you could go to these who have leases and say I need to use your facility for four days while I -- from the

time I offload the tank to the time it goes into the pipes?

BOARD MEMBER HACKETT: Something like that is entirely possible.

CHAIRMAN BORENSTEIN: Okay. Other questions?

And just the last question. Your understanding is also, like Johnny said, that this has not been a binding constrain over the last year-and-a-half, the actual logistics of bringing in?

BOARD MEMBER HACKETT: I would say that when you look at total inventory levels, you'd see there's been room in the tank. And if you think of one big tank in Southern California, we know how big that is; right? And I think that there's been room in that tank, number one.

And number two, there's a story of a tanker that came to L.A. and then turned around and went back; right? And so --

CHAIRMAN BORENSTEIN: Yeah. Consumer Watchdog raised.

BOARD MEMBER HACKETT: And so I don't understand why that didn't get unloaded. I would say that when I talk to market participants, they're very reluctant to discuss sort of the dynamics of these things. So I think it's interesting that there might not have been a free flow of cargos into that market in '15.

CHAIRMAN BORENSTEIN: is one possible explanation

that they knew the cargo had gone off spec and they didn't want to unload it there and find that out?

BOARD MEMBER HACKETT: Well, if they'd known it was off-spec, then presumably they could have unloaded it and then bought something, bought some other components to fix it with.

CHAIRMAN BORENSTEIN: Oh. Okay.

BOARD MEMBER HACKETT: Right. And so it seems to me it's expensive to sail a ship all the way to California, and then sail it away again.

CHAIRMAN BORENSTEIN: Okay. Any other thoughts or questions before we move on? Okay.

Thank you very much, Johnny. I very much appreciate that.

And the last -- oh, we're going to open up and see if we have representatives from --

MR. EGGERS: Yeah. We wanted to quickly ask if any representatives from Vitol would like to speak today?

MR. LUCAS: Yeah. This is Brad Lucas, Vitol.

MR. EGGERS: Okay, Brad.

MR. LUCAS: I hear a terrible echo.

CHAIRMAN BORENSTEIN: Yeah.

MR. EGGERS: We're going to try to mute the other participants.

Brad, could you quickly tell me which login you're

logged in under online so we can just --

MR. LUCAS: Hit the pound, the pound sign.

MR. EGGERS: Okay. Did that clear up a little bit, Brad?

MR. LUCAS: Yes. Right.

MR. EGGERS: Okay.

MR. LUCAS: That's fine.

MR. EGGERS: Go ahead.

MR. LUCAS: Okay. Well, a couple of things. I mean, I've been listening to these conversations and they all make a lot of sense. It's been interesting hearing it from a non-trading perspective, so --

CHAIRMAN BORENSTEIN: Actually, Brad, this is Severin Borenstein. Before you proceed, could you just introduce yourself, give us your name and explain the company you're with?

MR. LUCAS: Sure. Brad Lucas.

CHAIRMAN BORENSTEIN: Sorry to interrupt.

MR. LUCAS: I'm the PADD 5 Distillate (phonetic) and Gas Trader for Vitol. We're a trading company out of Houston. So we bring in --

CHAIRMAN BORENSTEIN: Excellent. Thank you.

MR. LUCAS: -- gasoline and components. Yeah.

So you know, last year we brought in quite a few cargos into L.A., both alkaloid (phonetic) and finish CARBOB

that went through Kinder Morgan's system and sold direct to Exxon and some other refiners.

You know, one of the big things that this whole conversation has entailed is about the high prices. One of the reasons why, in my opinion, was the lack of transparency with what was going on with Torrance. Because if you remember when it first blew up back in February, there was like an eternal rolling one-month period where they were going to get back up and running. And they kept saying next month, next month, next month. So the trading companies in general, it takes four to five weeks to ship a cargo out, if Exxon is coming back up they're not going to ship into closed ARB.

So because there was no real timeline of when Exxon was going to come back up and running, we would generally not -- you don't put cargos on the water and ship them to the West Coast just on a punt, basically, hoping that you can sell them when they get there. That's what happened with that one cargo that was done by another trading company who sent it out there, at which point in time the market had collapsed, and so he was unable to sell it, and so he sailed it away again. So that's what happened with that one.

So if there was more transparency with what was going on with refinery maintenance, when it was going to

come back up, it would have allowed us to see if it was more -- if we were going to be able to land these cargos and actually into a competitive market. If Exxon is back up and running the market is going to fall dramatically.

So basically kind of that lack of information kept cargos at bay. There were still a lot shipped into the West Coast, but not as many as could have been or would have been done. If we had actually known that Exxon was going to be down for over a year there would have been a much bigger import play over that time frame.

Make sense?

CHAIRMAN BORENSTEIN: Yeah. Thank you. Do you have more to say? We already have lots of questions, but we definitely want to hear what you have to say.

MR. LUCAS: Okay. So on these three different options here that you guys put together, I'll give you our thoughts on them.

The price pressure relief valve, I mean, it would certainly limit the immense volatility. Probably the easiest way to get barrels into the Southern California market would be through the PNW, Pacific Northwest, which unfortunately Jones Act ships are expensive. But if there's problems, then you're able to get barrels out of the Northwest, which is generally long, and they export quite a bit of the Northwest, and get those to California. That

would be the quickest solution to providing additional product.

I think, as the gentleman from Kinder Morgan mentioned, once you get off-spec product into the system, it could be there forever. I mean, there are stations out there that do, you know, 1,000 gallons a month. It's going to go into those stations. And I don't know how you're ever going to get it out of the system completely. You could do that with RVP. Basically, you're talking about a transition. It's a transition from summer to winter and winter to summer on RVP. But you're talking about sulfur and benzene and all sorts of other specs that might not be so simple to blend off. So you could have off-spec product in tanks forever.

At that point I'm not quite sure what oversight you have to go out and test the station and fine that individual station for having off-spec product when he could have bought it during one of these periods. It's just a whole can of worms that I think would cause issues long down the road.

The second one was the inventory requirements for each fuel seller. I don't -- 100,000 barrels is not that much product. And it really -- I mean, there's days where the market moves a million barrels, so I'm not sure 100,000 barrels would be able to solve any sort of short-term

pricing issue.

The question, you know, in looking at the way this was worded, my big question would be you have two different types of -- well, more than two, three different types of people in L.A.; you have refiners, you have traders with tankage, then you have pipeline traders. The traders with tankage, tankage is very expensive in L.A., and it's also limited. If you were to acquire people to hold inventory in L.A., what you'd probably end up doing is taking anybody that didn't have tankage in L.A., they'd have to go get it, which means that a lot of them would just drop out of the market, which would decrease liquidity in L.A. Because they wouldn't want to go lease tankage just to put product in there to sit.

So you'd have a lot of the -- I think we figured there was 27 traders and refiners in L.A. right now. You'd probably lose a couple. I mean, I can't say how many. But people that are just pipeline shippers would not be able to lease space, or they wouldn't be able -- or they wouldn't want to lease space and so they would just leave L.A., which would not be a good thing for market liquidity. So you'd have to consider that would be -- and who would actually hold this inventory? And, of course, it would cause the prices to move up because you have to hold inventory now in basically a dead tank, waiting for some opportunity to sell

it at some point in time in the future.

The final one that we had notes on was the California forward purchase of gasoline. They could do this now; right? The could do this anytime they want. We have a program where we offer prices that are risk management programs. So do a number of the other market participants. But the state chooses not to do that.

So I guess the overall recommendation from -- or thoughts on my side are the more intervention that goes into a marketplace, the messier it gets. So I think the easiest solution to this last problem would have been more transparency in what was going on in the market and allowing market participants to actually act appropriately with the precise information, but it was almost impossible to get.

CHAIRMAN BORENSTEIN: Yeah. Can I ask you -- I have a feeling I'm jumping ahead of others, but I have questions, both about more transparency.

Can you imagine from Exxon's point of view what they could say and how we would actually have a transparency rule? We can -- I mean, the folks at Consumer Watchdog have actually proposed this. And I keep wondering, how would you enforce it? Because Exxon would say we think we're going to be back up in July, but there's a great deal of uncertainty. And, in fact, they never said anything, I believe, but many other people kept saying things like that.

How would you write such a rule to get more transparency? Do you have any thoughts on that?

MR. LUCAS: The only thing I could think of is if there were multiple times they went to ask for waivers and they thought waivers were going to be granted and then they weren't. So that's an internal government, either CARB or -- I think it was CARB that could make that call, or the EPA. So --

CHAIRMAN BORENSTEIN: Wait. What --

MR. LUCAS: -- those --

CHAIRMAN BORENSTEIN: -- sort of waivers are you talking about?

MR. LUCAS: Well, they were trying to start their second electrostatic precipitation unit.

CHAIRMAN BORENSTEIN: Yeah.

MR. LUCAS: And they basically said they were going to start back up, and so the market stopped sending cargos because they were going to start back up. Well, it was supposedly a done deal, and then it got denied. So then all of a sudden there were no cargos coming up because they thought it was going to start back up, and the market shot back up again because no cargos were coming, because it was kind of a head fake.

So if there was a better -- if there was better communication between Exxon, CARB, and then to the public as

to what was actually really going to happen, then people like myself and other countries would plan on bringing in the appropriate amount of imports.

CHAIRMAN BORENSTEIN: You can't --

MR. LUCAS: (Indiscernible.)

CHAIRMAN BORENSTEIN: You can't pin this one on CARB. That's South Coast Air Quality Management District.

MR. LUCAS: There you go. Yeah, SCCAQMD. Yeah.

So that was hard for us to tell what was really going to happen. So they just made it more difficult for us to plan imports.

CHAIRMAN BORENSTEIN: Okay. And on the third possibility, you said the state could do that right now, could forward purchase gasoline, and chooses not to. In some ways that's heartening in the sense that people keep saying, well, this would require legislation and that would require EPA approval. So in some sense perhaps this is something the state could just do.

Would that have made a difference to your company if the state had come to you and said we would like you to bring in 300,000 barrels of CARB-spec gasoline for delivery in six weeks, and here, we'll make a deal with you on the price right now?

MR. LUCAS: Anybody could do that, for sure.

CHAIRMAN BORENSTEIN: And would that have changed

Vitol's incentive to bring product in? It sounds like that would have overcome one of your big concerns.

MR. LUCAS: Well, for sure. If you have a sale, if you have a guaranteed sale against it then, yeah, that's what we're here for.

CHAIRMAN BORENSTEIN: Are there other barriers that you can think of to doing -- I mean, other than, obviously, there are some on the state side that it may be politically unpopular, because occasionally they buy fuel and the price would drop --

MR. LUCAS: Right.

CHAIRMAN BORENSTEIN: -- which might, after all, be the point. But are there barriers that you would run into in signing a contract like that? I want to explore a little more. What would that contract look like? They would say we want -- this would be a physical, not just a swap? So they --

MR. LUCAS: Correct.

CHAIRMAN BORENSTEIN: They would actually say we want this product delivered to this point, or how would you work that?

MR. LUCAS: Well, we don't generally distribute fuel like Southern Counties Fuel would, but we would sell at the rack. And they would work with whoever their normal distributor is, but they could contract directly with

somebody like a trading company, it doesn't have to be us, it could be a refiner, too, to lock in a price based on today's, you know, current Merk and the basis, and lock that number in. So a $1.50 a gallon for, you know, 10,000 barrels a month or whatever they want. And that would be guaranteed throughout the contract.

CHAIRMAN BORENSTEIN: And where would a contract like that specify delivery, right at the dock or --

MR. LUCAS: No it would be contracted at the rack.

CHAIRMAN BORENSTEIN: So --

MR. LUCAS: Because, I mean, (indiscernible).

CHAIRMAN BORENSTEIN: -- Vitol would get it all the way to the rack?

MR. LUCAS: Correct. Yeah.

CHAIRMAN BORENSTEIN: Huh. So --

MR. LUCAS: Not just Vitol. Anybody could. I mean, any --

CHAIRMAN BORENSTEIN: Right. But I'm just --

MR. LUCAS: -- (indiscernible) could or any --

CHAIRMAN BORENSTEIN: I'm just --

MR. LUCAS: Yeah.

CHAIRMAN BORENSTEIN: -- using your company as an example.

MR. LUCAS: Yeah.

CHAIRMAN BORENSTEIN: So the state could come to

Vitol and say we want you to deliver X-thousand barrels to the following racks. And you would say, well, that's going to take us five weeks or something. And they might say, okay. And then you'd agree on a price for delivery in five weeks. Obviously, when the product gets to the rack, the rack price is not going to be whatever you agreed on. And so the state would either then make a profit or a loss, depending on how the prices moved in the meantime.

MR. LUCAS: Exactly. Yeah.

CHAIRMAN BORENSTEIN: And it sounds like if the state had been pretty active in doing this during the last 18 months that probably, given what we just heard, that there weren't really logistical constraints on bringing in product, that that probably would have brought in more imports over the last 18 months than we actually saw, particularly when people were uncertain, when this uncertainty about Exxon was holding up imports.

MR. LUCAS: Well, it would have certainly provided certainty. So we would have known you had to sail against that cargo. So, yes.

CHAIRMAN BORENSTEIN: Okay.

Amy?

COMMITTEE MEMBER JAFFE: So I have a question for you about the trading community and its participation in the market.

Does Vitol have positions in gasoline that are separate from the import -- importing cargos into the market? Do you ever play in the wholesale market in other ways?

MR. LUCAS: We have a rack --

COMMITTEE MEMBER JAFFE: Do you have positions on pipelines or, you know, in the internal market?

MR. LUCAS: Yes. We have positions up and down the West Coast. We have a marketing group that markets at the rack. We buy from all the refiners in the Southern California and Northern California, and the Northwest. And we ship on the pipelines to Phoenix and Fresno and San Jose and Stockton and Portland and Eugene, well, that's up in the Northwest, but pretty much everywhere, San Diego.

COMMITTEE MEMBER JAFFE: And you're not the only company that does that; correct?

MR. LUCAS: No. There's multiple companies that do that.

COMMITTEE MEMBER JAFFE: Okay. So would you agree as a company that trades for profit -- am I characterizing Vitol having a business, one business line being that you trade for profit?

MR. LUCAS: Correct.

COMMITTEE MEMBER JAFFE: So when you have multiple companies that trade for profit, what that might mean, I'm

not saying you did this or Vitol, I'm not making any accusations on any particular company, but it might mean that after you'd get long product in the state, you would then have a disincentive to bring a new cargo and have prices and come down; would that be correct, if you were long product?

MR. LUCAS: Well, yeah. But if you're long product and the market is strong, then you're selling the product, so then you bring in more. I mean, the demand is certainly there. And that's one of the reasons why the price has moved up, because demand outstripped supply.

COMMITTEE MEMBER JAFFE: Can you describe to the hearing room, what I mean when I tell you that companies sometimes make a squeeze? Could you tell the room, what do I mean when I say there's a squeeze made on the market? What's a squeeze?

MR. LUCAS: I prefer not to delve into that, because we don't do that.

COMMITTEE MEMBER JAFFE: But other people do; correct? People --

MR. LUCAS: I mean, I don't know --

COMMITTEE MEMBER JAFFE: People from time to time --

MR. LUCAS: -- to be --

COMMITTEE MEMBER JAFFE: -- do make a squeeze in

the market. Could you just tell the group what a squeeze is, since you're a trader and I'm not a trader? I don't want to garble it.

MR. LUCAS: I mean, I think what you're referring to is somebody who is either long product and trying to keep the market tight potentially, or --

COMMITTEE MEMBER JAFFE: Or short product and --

MR. LUCAS: -- short product and -- yeah.

COMMITTEE MEMBER JAFFE: -- yeah, keep the market short. In other words --

MR. LUCAS: Yeah, keep the market long.

COMMITTEE MEMBER JAFFE: -- what you do is you take a position, right, and then you use, if there's market power, you would use that market power to accentuate the profitability of that position over time.

MR. LUCAS: I mean, one could, yes, but --

COMMITTEE MEMBER JAFFE: Right.

MR. LUCAS: Yeah.

COMMITTEE MEMBER JAFFE: So, and indeed, if the refiners were exercising market power and a smart trader saw they were doing that, that trader could also make even more money by adding a squeeze on top of a shortage that was created by market power, by refiners; is that correct?

MR. LUCAS: Well, traders, I mean, traders generally look for arbitrage. So if we can by cargos of

CARBOB out of Point Tupper or out of Europe or Asia and land them at values that are -- at current market values, we will certainly do that. And that helps bring in more product.

So we bring as many cargos until the price, until the arbitrage is closed. So we keep selling the cargos until all of a sudden --

COMMITTEE MEMBER JAFFE: But you would agree --

MR. LUCAS: -- and it's uneconomical to bring them in.

COMMITTEE MEMBER JAFFE: You would agree, for example, when the market is entangled with the cargo markets, for example, are that sometimes trading companies will make the decision to hold material in storage until it gets to the point where you can make a lot more margin than you might have just to play the arbitrage. You might wait and see if you can get an even wider profit in the arbitrage by playing the timing of a market that seems to be structurally having a problem.

MR. LUCAS: I mean, in theory it works both ways, though, so the market -- and Southern California is one of the most volatile markets in the country -- it goes both ways where the market can go up much higher or it can go much lower. As you've seen recently, it was trading at minus $0.15 cents just last week. So the market, it was the lowest price in the country.

So, yes, you could say that you could hold it back, but not to say that another company won't bring a cargo in and sell it, and all of a sudden you're left with product in tank and it's decreasing in value, so --

CHAIRMAN BORENSTEIN: Okay. Jim Sweeney?

COMMITTEE MEMBER SWEENEY: I want to push back a little bit on something you said. When you were asked the question, if the government of California were to offer you a fixed price contract at whatever is an attractive price, you would have taken that, which I understand. But given that you and others were already importing, would you on net increase the amount of gasoline you're bringing in, or would you shift dominantly from the ones that are riskier for you and just sell it to California, to the State of California, and therefore, in fact, not bring in any more on net but just bring it in on a riskier -- in a less riskier situation? How would it work, really, when you take that whole system together?

MR. LUCAS: Once again, if the arbitrages are open, so if we sold it to the state and the arbitrage was still open, the price hadn't gone down, we would be incentivized or, A, trading up to -- we would be incentive to bring in more ships.

Now, remember that it does take weeks to charter a boat, find the product, get it across from Asia, and get it

into tanks. So the uncertainty is what -- not being able to sell far out is what keeps -- not -- the uncertainty and the not being able to hedge farther up the curve keeps people from bringing in more cargos. And the main certainty had to do with Exxon not knowing if they were going to come back up next week or next month or next year.

COMMITTEE MEMBER SWEENEY: But I'm assuming that if you went to this contract with the State of California and you're going to bring in multiple more contracts, you would believe that that would depress the price of gasoline from what it would have been otherwise. And with the -- but would it reduce any of the uncertainty for the other types of contracts?

In that case, are you saying that you would still be bringing in just as much as those other types of -- those other cargos, even though you knew that the price is likely to be lower than it would have been otherwise and the riskiness wouldn't be declined, wouldn't be decreased? I'm just wondering. I would think that you're responsive to your expectations of the future prices and you know that more imports would change your expectations of what the prices are going to be.

CHAIRMAN BORENSTEIN: Brad, are you still on the line?

COMMITTEE MEMBER SWEENEY: Or did you reject the

question?

CHAIRMAN BORENSTEIN: Brad? Brad? Uh-oh.

MR. LUCAS: Hello?

MR. EGGERS: Okay. There we go.

CHAIRMAN BORENSTEIN: Brad --

MR. EGGERS: Sorry.

CHAIRMAN BORENSTEIN: -- are you there?

MR. LUCAS: Yes, I'm here.

CHAIRMAN BORENSTEIN: Did you get cut off? Did you hear Jim Sweeney's question?

MR. LUCAS: Yeah, I heard it.

CHAIRMAN BORENSTEIN: Okay. Sorry. They apparently accidentally muted you or something.

MR. LUCAS: Oh.

CHAIRMAN BORENSTEIN: I'm not sure. Anyway --

MR. LUCAS: Oh, well.

CHAIRMAN BORENSTEIN: Yes. Would you like to respond?

MR. LUCAS: Sure. Yeah, I mean, the state's volume is relatively small. So if they bought at a fixed price or risked a locked in price for fuel, it's a fairly small volume. So that particular piece, the demand is still going to remain the same in the state, whether it's a locked in price or whether it's a floating price, it really doesn't make any difference. You're still going to consume the same

amount of product in the state.

So it just would guarantee certainty for particularly one potential cargo for -- to supply the state's demand at that price. So would that change the overall strategy? I can't say that it would because the state's much -- there's much more demand in the state than just the state's own internal demand. I think it's like one to two percent.

COMMITTEE MEMBER SWEENEY: Okay. You're assuming very small quantities of these contracts.

MR. LUCAS: Well --

COMMITTEE MEMBER SWEENEY: And I think that we were suggesting maybe larger quantities, other than the state's own internal demand. But I guess we haven't fully specified the alternative.

CHAIRMAN BORENSTEIN: Can I ask a question --

MR. LUCAS: Yeah, I mean --

CHAIRMAN BORENSTEIN: -- Brad? And this is, I'm sure, proprietary, but if you want to give us a ballpark. How much does Vitol import annually into the State of California? Is it -- can you --

MR. LUCAS: I mean, it is proprietary. But, I mean, multiple cargos last year were brought into California of alkaloid and CARBOB.

CHAIRMAN BORENSTEIN: Oh, actually, it is

proprietary, but there is a public database with all the shipments that have arrived.

MR. LUCAS: Yeah, you could probably dig it up.

CHAIRMAN BORENSTEIN: Yeah. Okay. So we can look that up. But it would be probably still less than a couple percent of the entire California demand, I would think?

MR. LUCAS: Yeah, but there's -- yeah, I would agree with that.

CHAIRMAN BORENSTEIN: Okay.

MR. LUCAS: But there's multiple trading companies bringing in cargos, too.

CHAIRMAN BORENSTEIN: Yeah. Yeah. Yeah. Okay.

MR. LUCAS: So --

CHAIRMAN BORENSTEIN: And one last question on this. If the state did come to you or one of the trading companies, there is -- you then are in the business of finding a tanker, finding a refiner somewhere in the world that can produce CARB gasoline, and so forth, that's your bread and butter; right?

MR. LUCAS: Part.

CHAIRMAN BORENSTEIN: That's what you do for a living?

MR. LUCAS: Yes.

CHAIRMAN BORENSTEIN: What is the time frame -- what is the, sorry, range of time frame, let's say over the

last 18 months? What's your best guess at sort of how quickly you might have ended up -- be able to say we will have a tanker at a port in California in X days, what's the range of X?

MR. LUCAS: Thirty to forty-five.

CHAIRMAN BORENSTEIN: Thirty to forty-five. Great.

COMMITTEE MEMBER FOOTE: I have a question.

CHAIRMAN BORENSTEIN: Kathleen?

COMMITTEE MEMBER FOOTE: Okay. Brad, thanks. This is really helpful information.

Does Vitol or do traders generally -- how far into the market on the other end, not in acquiring product but in distributing it, do your connections go in terms of regular customers, long-term contracts, the nature of the contracts, fixed amounts versus supplies, et cetera? And does it go all the way to retail or at what point does it stop?

MR. LUCAS: We stop selling at the rack. So we break bulk out of L.A.-Carson, or GATEX and Kinder Morgan's Terminal, and it goes out to the other terminals, San Diego and whatnot. And then we sell to jobbers, to retailers at the rack. And they provide their own truckers and they haul it to their stations or wherever it goes. That's as far down the chain as we go, at least on the West Coast.

CHAIRMAN BORENSTEIN: Dave?

BOARD MEMBER HACKETT: Hey, Brad, Dave Hackett. Thank you very much for coming to our meeting today. I can't tell you how happy I am that a real market participant, somebody who's sitting, you know, there in the seat trying to make a decision about whether he's going to supply gas to consumers of California or not, actually showed up to talk to the Committee, and we thank you very much for that.

MR. LUCAS: You're welcome.

BOARD MEMBER HACKETT: Let me ask you a question about storage capacity in L.A. Is it -- if you show up with a Cargo and, you know, you've done your homework, you've talked to all of the storage facilities' operators, is it very difficult to get dock space and tank space in Los Angeles?

MR. LUCAS: If you don't have it, I mean, as available, you either have long-term leases on your tanks, which we do, or it becomes as available. So we make sure before we send a ship to the West Coast that we have the (indiscernible) of the tank space in order to receive that vessel. It's very expensive to sit a vessel offshore, just waiting for tanks to open up. So we obviously have a plan that we buy the cargo, we make sure our tanks empty when the cargo is going to arrive, and then we offload the cargo with the window that Kinder Morgan gives us that coincides with

the arrival of the ship. And we haven't had any issues.

BOARD MEMBER HACKETT: Okay. So you may in slack times be running space and tanks that you're not using? Because basically you've got air in those tanks.

MR. LUCAS: Yeah.

BOARD MEMBER HACKETT: Okay. Thank you.

MR. LUCAS: Quite often.

CHAIRMAN BORENSTEIN: Can I ask you, Brad, when that happens, if somebody comes to you, do you sublet that tankage?

MR. LUCAS: Well, certainly we have and we could. But generally, if somebody is coming to me because they want the tankage, there's probably an opportunity, which we would be taking advantage of ourselves.

CHAIRMAN BORENSTEIN: Okay.

MR. LUCAS: So --

CHAIRMAN BORENSTEIN: So, yeah, you would want to -- that would be a signal, there's some business that you'd like to do with that yourself?

MR. LUCAS: Right. Usually, because the market structure is constructive total product, so --

CHAIRMAN BORENSTEIN: Got it.

MR. LUCAS: -- we'd be doing it ourselves.

CHAIRMAN BORENSTEIN: Yeah.

MR. LUCAS: Yes.

CHAIRMAN BORENSTEIN: That makes sense.

Any other questions for Brad?

Thank you very much. This has been really eye-opening and helpful, and I thank you for being willing to share your insights with us.

MR. LUCAS: Yes. You're welcome.

BOARD MEMBER HACKETT: Chairman, one other thing.

CHAIRMAN BORENSTEIN: Dave Hackett has one more question.

BOARD MEMBER HACKETT: According to EIA stats, Vitol was the importer of record for about 3 million barrels of product last year.

MR. LUCAS: That is darn close.

CHAIRMAN BORENSTEIN: And just for the record, California was importing -- or California was using about a million barrels a day, although that's of gasoline. And the number you quoted is probably all refined product.

BOARD MEMBER HACKETT: I bet it's all gasoline or gasoline --

CHAIRMAN BORENSTEIN: Okay.

BOARD MEMBER HACKETT: -- pumping components.

CHAIRMAN BORENSTEIN: Okay. So it would be a little under --

MR. LUCAS: Yes.

CHAIRMAN BORENSTEIN: -- one percent of the

market. And that was in a pretty busy import year.

BOARD MEMBER HACKETT: Or another way to think of it is it was probably -- I can't do the numbers in my head -- close to 10,000, 8,000 or 9,000 barrels a day on total imports of, what did Lynn have in there, 40 or so, so maybe a quarter of the imports, something like that.

MR. LUCAS: Yeah. One thing, I think you would have seen more imports coming in if people had some sort of idea of what the market or what the refining capacity or capabilities were going to be throughout the year. But it's -- I mean, the Merk has a lot of intel, I mean, OPIS and Genscape that gives us an idea of what's going on, but you never really know.

But I think certainly more cargos would have come in if the information was more readily available, and that would have helped, I would assume that would have helped pump up supply and lower prices, but we'll never know.

CHAIRMAN BORENSTEIN: On that subject -- this is Severin again -- you guys do make risky bets sometimes, though; right? I mean, I imagine that's part of your business. You obviously want to minimize the chance of making a mistake. But occasionally you get product somewhere and the price isn't where you hoped it would be?

MR. LUCAS: Yes.

CHAIRMAN BORENSTEIN: But if it's looking too

uncertain you hold off, even though you think you might be able to make money, maybe even on average you would, but the risk is just too great; is that fair?

MR. LUCAS: Yeah, that's fair. And it's the same with the refineries, they do the same thing. They look at bringing in products and they'll look and say -- and they, of course, know more about what their own internal systems are than we do, and they'll say whether they think they can make money on it or not and decide whether or not they want to bring it in.

CHAIRMAN BORENSTEIN: Yeah. Okay.

Amy?

COMMITTEE MEMBER JAFFE: Well, I just had a quick question.

For the product that you trade in the state, do you also buy and sell product at the rack and you get product and you get product from different refiners, as opposed to having everything you trade in come from imports?

MR. LUCAS: Oh, of course. Yeah. We buy most of our product from domestic refiners.

COMMITTEE MEMBER JAFFE: Okay. Great. Thank you.

MR. LUCAS: Yeah.

CHAIRMAN BORENSTEIN: I think we -- Jim, did you have one more question or not?

COMMITTEE MEMBER SWEENEY: Well, yes.

CHAIRMAN BORENSTEIN: I promise to let you go soon.

COMMITTEE MEMBER SWEENEY: Yes. When you're making these risky bets, are you doing basically an expected value calculation, probability times payoff, or are you acting in a very risk-averse manner? I know this is shades of gray in here.

MR. LUCAS: Sure.

COMMITTEE MEMBER SWEENEY: But could you say whether you're operating roughly in a risk-neutral manner or a heavily risk-averse manner in making these risky trades?

MR. LUCAS: I mean, we use all the information available based on historicals, based on turnaround schedules, based on inventory levels. And you put all that into your mind and figure out whether or not the risk is worth the reward.

COMMITTEE MEMBER SWEENEY: Right. Do you try to avoid risks or do you say, hey, that's part of the business and do something? That's like if we have a large gain in expected value, probability times payoff, we tend to take those risks, so you tend to avoid risks.

MR. LUCAS: I mean, in general, trading companies tend to embrace the risk, so --

COMMITTEE MEMBER SWEENEY: Yeah. Because, by the way --

MR. LUCAS: -- (indiscernible).

COMMITTEE MEMBER SWEENEY: -- that's my image of trading companies in other areas, they make money on being willing to guess the risk well. And I was wondering if you're operating differently than most?

MR. LUCAS: No. I think that's why (indiscernible) come to the West Coast. That was a risk bet that didn't pay off for the particular trader. They brought it to the West Coast and there was no home for it, and it left. So that was a high risk trade that didn't work out.

COMMITTEE MEMBER SWEENEY: Yeah. Okay. That's helpful. Thank you.

MR. LUCAS: Yeah.

CHAIRMAN BORENSTEIN: Okay. Now I think we are going to let you go, unless there's anything?

MR. LUCAS: All right.

CHAIRMAN BORENSTEIN: Okay. Thank you very much, Brad.'

MR. LUCAS: Thanks, guys.

CHAIRMAN BORENSTEIN: So our last speaker today -- or, actually, do we think we have --

MR. EGGERS: Well, do you want to try to see if Noble is on the line?

CHAIRMAN BORENSTEIN: Sure.

MR. EGGERS: I was going to unmute everybody.

CHAIRMAN BORENSTEIN: Let's check.

MR. EGGERS: All right.

CHAIRMAN BORENSTEIN: I think it's unlikely, but --

MR. EGGERS: Okay. We have unmuted everybody. Is there a representative for Noble America who would like to speak today?

MR. COURT: Yeah. Hi. It's Jamie Court. I need to get back to the issue --

MR. EGGERS: Jamie? Jamie --

MR. COURT: -- (indiscernible).

MR. EGGERS: -- I need a representative for Nobles. All right. I'm going to take that as a no, and we're going to move on to the WSPA representative; is that correct?

(Colloquy)

CHAIRMAN BORENSTEIN: Okay. Then we are going to mute everyone again on the line.

And we're going to ask Skip York from Wood McKenzie on behalf of WSPA.

MR. YORK: So I think it should be pretty easy for me to get it into ten minutes, because I think probably 90 percent of the comments I was going to make have already been made. So I'll just flip through and just sort of talk about what this chart would have been if I had spent time on

it, and then just keep moving on.

This first chart just says that there are other relief mechanisms that already exist. And we heard this morning, some detail about how those mechanisms work. The only comment I'll make before flipping on is that we don't see a lot of history of these other mechanisms being used in California, even though they're available.

This next chart, Gordon, this morning, and then Jay in the afternoon kind of covered a lot of it around, you know, how do you actually structure this and then know when you're going to use it? How do you know when is the right time to pull the right price lever to get whatever the desired result is? And then the risk around that policy or that criteria is what are the unintended consequences if you pull the wrong lever or if you pull the wrong combination of levers?

So then the one thing that -- before I get into actually talking about the three proposals is that, you know, there hasn't been a whole lot of discussion about, you know, if we're at some point in the future, what is it that caused the price change? And then asking the question, do we have a policy lever that addresses that driver? Because just merely reacting to a price change could actually exacerbate whatever the environment was that created the price, you know, the increase in prices to start with.

And so the next example is kind of -- and I'll walk through and kind of say, well, let's actually look at what happened in 2015 based on the component prices, the components that make up the prices. And what you kind of see is, certainly, we went from January into the late spring and early summer when we saw this dramatic increase in prices. But if you look at the components, about 20 percent of that price increase was rising crude oil prices, and another 15 percent of the price increase was due to higher operating costs, in part a surge in natural gas prices.

Now, the point of this is --

CHAIRMAN BORENSTEIN: Skip, can I just --

MR. YORK: Yeah.

CHAIRMAN BORENSTEIN: Where am I seeing higher operating costs on this graph?

MR. YORK: So the higher operating costs are going to be under there is within this refining element here, part of that dark blue, I don't know, yeah, you can see it, part of this dark blue is the higher operating costs. So this is using -- so what I did is I took the Energy Commission's components that they produce, and I'm just plotting that here, and then going back through what our models suggest was going on inside that dark blue was a part of that, because that's the operating margin and cost of the refineries. And part of the reason why that blue bar got

bigger is because OPEX went up.

CHAIRMAN BORENSTEIN: Okay. How much of that margin does your model tell us is market power?

MR. YORK: Well, we're simulating what's going on inside the refineries. We're not modeling the system. We're modeling what was going on inside the refineries.

CHAIRMAN BORENSTEIN: Right. But --

MR. YORK: And that's just something we just do.

CHAIRMAN BORENSTEIN: -- your model is not taking -- is not -- has no strategic behavior in it.

MR. YORK: No. It's just --

CHAIRMAN BORENSTEIN: And that number, that refining number is a result of both costs and strategic behavior. So your model is necessarily missing a big part of -- a potentially big part of what's going on.

MR. YORK: Our model is not even trying to capture the strategic.

CHAIRMAN BORENSTEIN: I understand. I'm just --

COMMITTEE MEMBER JAFFE: And let me just say that --

CHAIRMAN BORENSTEIN: I just want --

COMMITTEE MEMBER JAFFE: -- the companies have reported what was profit and what was cost. And, of course, the profits that they reported in 2015 were ginormous compared to past years. And they didn't really report --

and it was a very -- if part of the increased costs was infinitesimal compared to the profits that they reported, like Valero and companies like that, compared to historic levels of profit.

So I would say that if you're not having profit on this chart that is matching the actual profits of the company, this chart is pretty much useless.

MR. YORK: Yeah. And I agree with you. The State of California ought to revise the way they calculate this chart.

CHAIRMAN BORENSTEIN: Okay. We'll let you finish.

MR. YORK: Because the blue bar is profit and cost, per the State of California's definition of what they're capturing.

What we're saying is that when we simulate the refineries in California, that part of that blue bar is higher operating costs. And we would not say that 15 percent is infinitesimal. We would say that 15 percent is material.

Now, the point of this chart, though, is you've got rising prices. And if all you're addressing is the top of the bars, without understanding what drove the bars higher, you could be really -- you could have a price -- a policy mechanism --

COMMITTEE MEMBER JAFFE: And you would --

MR. YORK: -- that actually could --
COMMITTEE MEMBER JAFFE: You would agree --
MR. YORK: -- exacerbate it.
COMMITTEE MEMBER JAFFE: You would agree that this crude oil bar that you're talking about was true for every refinery in the country and was not related to California at all? Because crude oil prices --
MR. YORK: The height of the --
COMMITTEE MEMBER JAFFE: -- went up everywhere. It's, you know, a law of --
MR. YORK: Twenty percent of --
COMMITTEE MEMBER JAFFE: -- one-to-one price.
MR. YORK: Twenty percent of the increase in the change in the heights of the bars was due to higher crude prices.
COMMITTEE MEMBER JAFFE: That would be true in Houston. That would be true in Pennsylvania. That would be true everywhere. But gasoline prices in California were higher in those locations.
MR. YORK: Gasoline prices rose everywhere in the U.S. in the spring.
CHAIRMAN BORENSTEIN: Right. But just to be clear --
MR. YORK: And part of it was --
CHAIRMAN BORENSTEIN: -- what this Committee is

focused on --

MR. YORK: Now, hang on.

CHAIRMAN BORENSTEIN: -- is the differential between California and the rest of the country.

MR. YORK: This is not the differential.

CHAIRMAN BORENSTEIN: I understand.

MR. YORK: Right.

CHAIRMAN BORENSTEIN: But that --

MR. YORK: The horizontal access --

COMMITTEE MEMBER JAFFE: You're presenting information to confuse people --

MR. YORK: No, I not.

COMMITTEE MEMBER JAFFE: -- that's not relevant --

CHAIRMAN BORENSTEIN: Well, let's --

COMMITTEE MEMBER JAFFE: -- to the question.

MR. YORK: I'm just saying very simply, if you look at the light blue bar from January to June, it's higher. And the cost of crude oil is higher in June than it was in January. That's all that chart says, and that's all we're saying that it says. What we're saying is if you go from the stack bars in January to the stack bars in June, 20 percent of that delta is due to crude price, and 15 percent of it is due to higher operating costs. Now there's still another 60 percent out there that didn't have anything to do with the feedstock of the refineries or the operating costs

of the refineries inside California. So 40 percent of it can be -- 40 percent of it is things that were beyond the refiners control, because they don't control the price of crude oil and they don't control the price of gas.

But all your trigger does is address the height of the bar and not the drivers of the height of the bar, then you could trigger something that would actually impair supply into the market. So, for example, here, if the reason why prices were going up was because of rising crude prices, and you imposed a trigger that reduced -- that switched you from -- that allowed you to sell non-CARB gasoline at a $0.25 discount, you would be changing the environment under which prices were rising, because non-CARB gasoline and CARB gasoline both come from crude oil.

CHAIRMAN BORENSTEIN: Okay.

MR. YORK: And crude oil has become --

CHAIRMAN BORENSTEIN: I'm sorry.

MR. YORK: -- more expensive.

CHAIRMAN BORENSTEIN: I wasn't going to interrupt you again, but you've mischaracterized two things here.

First of all, it's a 25 percent surcharge, not a 25 percent discount for non-CARB gasoline.

Secondly, it is a gasoline-to-gasoline comparison. So the price of crude oil, presumably the crude that goes into either one, is the same crude oil. And so a movement

in the price of crude oil would not change the relative economics of CARB and non-CARB gasoline.

MR. YORK: Exactly.

CHAIRMAN BORENSTEIN: So this unintended consequence --

MR. YORK: No. This --

CHAIRMAN BORENSTEIN: -- you're claiming --

MR. YORK: This is --

CHAIRMAN BORENSTEIN: -- doesn't seem like it's --

MR. YORK: This isn't --

CHAIRMAN BORENSTEIN: -- a plausible story.

MR. YORK: This isn't an unintended consequence. This is no consequence.

CHAIRMAN BORENSTEIN: Absolutely. And if the price -- and if the reason the price of --

MR. YORK: So --

CHAIRMAN BORENSTEIN: -- the gasoline has gone up is because crude oil has gone up, it would have no effect.

MR. YORK: Right.

COMMITTEE MEMBER JAFFE: The point --

MR. YORK: And if you triggered --

COMMITTEE MEMBER JAFFE: Well, the point is you're point --

MR. YORK: And if you triggered the policy --

COMMITTEE MEMBER JAFFE: -- is irrelevant.

MR. YORK: Ad if you triggered the policy --

COMMITTEE MEMBER JAFFE: Your point is totally irrelevant.

MR. YORK: If you triggered the policy and nothing happens, if all you're doing is responding to the top of the bar and not to the drivers of the bars, you could trigger and nothing happens. All right?

Same thing with the operating costs. Now the operating costs is a bit different. If the reason why the bars are rising is because operating costs are rising and you trigger, you could actually reduce run rights. That's not what you intended the trigger to do. But if you're taking the -- if you're reducing the -- you know, if I've got higher costs and I can't cover those costs, then I either don't make a change, like on crude price, or I actually change my operating environment, which would be to run less crude.

CHAIRMAN BORENSTEIN: Does making CARB gasoline take more natural gas than making non-CARB gasoline?

MR. YORK: Yes.

CHAIRMAN BORENSTEIN: By a lot?

MR. YORK: Not by a lot, but it's about -- of the $0.12 to $0.14 that we think is the incremental cost, it's about -- it can be $0.02 to $0.03 a gallon. So it's not all of it.

CHAIRMAN BORENSTEIN: That seems like it's in the noise, in the --

MR. YORK: It's --

CHAIRMAN BORENSTEIN: -- when you're evaluating this policy alternative.

MR. YORK: No, that's true. In terms of a --

CHAIRMAN BORENSTEIN: So --

MR. YORK: -- like a $3.00 environment, it's in the noise. But when you think about that incremental cost, it might be a third, a quarter to a third of that incremental cost is natural gas.

CHAIRMAN BORENSTEIN: Okay.

MR. YORK: But it's a couple of cents, it's a couple of pennies a gallon. Okay.

And then the final point was made -- to make on this chart is that if there's something outside the system, for example, we're heard a lot about logistics. And what it sounds like is that we didn't hear of any sort of chronic logistics problems in 2015, but this would be sort of if the reason why prices were rising is because we had a logistics interruption, then, you know, then the policy trigger doesn't allow the refiners to respond. Because even if they bring more -- if there's a logistics constraint, even if they bring in more non-CARB gasoline, if they don't have the logistics to get it into the market, they don't have the

logistics -- if they don't have the logistics to get CARB gasoline in, they don't have the logistics to get the non-CARB gasoline in.

So the big -- the final take away from it is that understanding what's driving it, why the market -- why we're seeing the price response is critical to knowing which lever that we pull and to what degree we pull it on.

Then the next thing we did is we looked and said, well, what would happen if you allowed non-CARB gasoline to come in, what does that do to the import arbitrage window? So this is sort of a hypothetical exercise, looking back. We went all the way back to 2013 to and get a couple of different price cycles in it to see what happens.

And what we see is that it doesn't increase the import -- it doesn't increase the arbitrage window all that much, it's about 20 percent. And it tends to be more -- it extends the operating -- it extends the arbitrage window more than it brings the arbitrage window forward so that that volume shows up sooner. It tends to be that the back end of the arbitrage stays open longer, not that the arbitrage window opens sooner, which we thought was kind of interesting, because we thought it would be symmetrical, that once the window -- once the non-CARB window opened it would just open for the exact same interval as the imported window opens for CARB. But we actually saw something where

it basically sort of elongates the tail.

Now that doesn't mean that the policy doesn't work. It just means that you probably don't get as prompt a reply as you might have thought, but you'll get an extended reply. And so it might not stop the price increase, but what it might do is it might alleviate how long it takes to get the market back into balance --

CHAIRMAN BORENSTEIN: Can you just clarify --

MR. YORK: -- by leaving that window open.

CHAIRMAN BORENSTEIN: -- what's on the vertical access of this graph?

MR. YORK: Yeah. So this is dollars per gallon. This is how big the import window is. So this is the import arbitrage.

CHAIRMAN BORENSTEIN: What does import window mean?

MR. YORK: So this is if I'm sitting -- and, you know, we did this example using Singapore economics. So if I'm a refiner sitting in Singapore and I see California CARB prices, which are the dark blue, so if I see California CARB prices, and then I say, well, what's the cost of me making CARB gasoline as opposed to the conventional gasoline I would have been making, assuming that I can do that, so the refiners that have the ability to do that, and then I take that CARB gasoline, minus that incremental operating cost,

minus transportation. And when that differential is above the line it says it's economic for me to make that cargo and move it into California.

But like when we were talking to the previously speaker, there's that window of uncertainty, is that it might be economic today, but by the time the cargo shows up in 30 to 45 days, the window might not be there. But this says when is that window open as opposed to when does it not make sense for me to do it?

The light blue line is taking the same economics but I'm going to -- so we did is said now you can sort of sell -- since we don't know what RFG is worth we just used the $0.25 a gallon and we said RFG would be at CARB minus $0.25 a gallon, and then did the exact same. And so now the importer is saying instead of delivering CARB, I could deliver another fuel, a waivered fuel, and I'm not going to get the CARB gasoline price for it, I'm going to get CARB minus $0.25. And now when are the import -- when do the import economics work on that alternative fuel? So I don't get as much for it as selling CARB, but I also don't -- it doesn't cost me as much to manufacture it, but the shipping cost is the same. And that's why the two bars -- that's why the two lines look different. Okay.

And so the takeaway from this is that there's two takeaways from it. One is that offering the other fuel does

open the import window. It doesn't open it as much as -- it only opens it up about 20 percent. It opens up more on the backend. The challenge is going to be then, in terms of what infrastructure we can use, can I actually get more gasoline off the -- you know, from the boat into the distribution system? What we heard is that, you know, a lot of the comments around the system was tight. But as I guess it was Johnny from Kinder Morgan said, we didn't turn anybody away.

So there was some ability to move more material in, but not really no -- is there enough capacity, inbound logistics capacity that wasn't being used in January in 2015 that would have been enough to reduce price pressure if this non-compliant fuel had come in? That's the uncertainty. And we don't know. You know, we don't know how much volume we needed, so -- and we don't know how much excess capacity there was, and we also don't know how much volume was needed. But that's one of the uncertainties, is do we have enough?

So one of the things, what would you might want to do? You may want to think about how much inbound logistics do you have in place so that when these events happen, that other CARB fuel can come in from the guys that can make CARB. And now you're opened up the supply window because you've opened up the supply window because you've allowed

the non-CARB refiners in the world the opportunity to get in at something less than the CARB price. So we've opened up the supply envelope by doing this. But we don't know, do we have enough logistics for those incremental suppliers to be able to get here in a way that they could actual material move the price?

So that's one of the -- so we've got a bigger import window, but we don't really know, would this have been enough to have knocked those price spikes out? We don't know what the volume is that would have been required.

So then we looked at the inventory floor. And the comments we have around the inventory floor is, is we approached it a little bit different than Gordon did. Because Gordon walked us through this morning that chart that said, well, if you require inventory from the existing tanks, if you require more inventory to be held you reduce the working capacity. We worked it the other way and said if you require -- if you impose an inventory requirement you're going to look for more storage capacity than you already have, because you want to keep your working inventory where it's at, because presumably that's -- your business is optimized around that. So if you're going to require me to hold more inventory, I want more capacity. That's the way that we would approach it.

And then we asked ourselves, well, we came up with

some questions about, well, where is this inventory going to be held in the supply chain? Are we going to -- is the requirement that you hold blend stocks, and that would be sort of -- and then if you could hold -- the requirement was it could be held in blend stocks, that would probably something you're holding at the refinery. And then they would blend it up to CARBOB and move it into the distribution system towards the wholesale terminal.

Is the inventory requirement going to be CARBOB, which means now you're not going to probably be held in the tanks at the refinery, they're probably going to -- you'd probably prefer to hold the tanks at the wholesale terminal. Or is the inventory requirement going to be finished gasoline? Which means that not only do you need more tanks of CARBOB, but you might also need more tanks for ethanol now. And that ethanol is going to be held, is going to be just held in -- you know, is sort of is going to just be held dormant until -- you know, because you've got to have it in case there's an inventory release. If you pull the trigger you need to put CARB into the market in the scenario, and you've got to have not only the CARBOB sitting there, but you also have to have the ethanol sitting there so you can actually blend it in and make the finished product.

So where you're in the supply chain is going to be

critical, is a critical definition. It also sort of tells you something about the economics of it. The farther upstream you are, so the closer you are to the refinery, probably the larger the tanks can be and the more scale you've got. But the closer you are towards the rack, the faster the inventory can get into the market. So there's a tradeoff that has to be made.

And then, also, there's just more distribution sites than there are refineries. And so there's the whole issue of can we actually get the permitting and the footprint to put those incremental tanks in across all those locations across the distribution system?

And then the final one is on the forward purchase of gasoline. And the way we approached this is that this wasn't -- you know, is that this is sort of a structural business since the state doesn't know. Because by definition we don't know when a refinery is going to have an unplanned upset, so the state is going to have to be doing something on a fairly structural basis because they don't know when they're going to need to bring that cargo in. Now it doesn't mean they're doing it every day, but they're going to want some sort of a supply, create some sort of a supply chain so that when that incident does happen they don't have to wait for 30 to 45 days for the first cargo to show up. And then sort of -- that creates back to the non-

CARB issue. That creates the same infrastructure. We say, do you have the inbound logistics in place?

But one of the things we heard this afternoon that I hadn't thought about when I was putting this together, in addition to the operating costs that the state would have to cover to sort of run this program in a structural manner is just merely -- you know, if you contract with Vitol or a trader and they go to the supplier, they get the ship, they get the berth, and they move it all the way to the rack, that's only the first end of a deal. This is a back-to-back deal for this to actually impact the market.

So the first deal is working with a trader like Vitol. And they go and procure the material and get it all the way to the rack.

The second deal is the state now has to get it from the rack into the market. And that's going to be -- the state is going to turn from a buyer on the Vitol contract to now they're turning into a seller in order to get it into the market. And they're probably going to -- you know, and the state is going to sell it clearly unbranded, because the state doesn't have a brand. And the state is also probably going to -- you know, and you're going to largely be selling it to jobbers. But there has to be a way. You have to build sort of -- you know, either you're going to contract somebody to do that and sell to the

jobbers for you, or you have to build sort of a marketing organization to do it.

But either way, you're going to have to figure out, how are you going to allocate those volumes around the state? So, you know, is the volumes -- are you going to tell Vitol to deliver to this location in Northern California or another location in Southern California? Do you have the space at the rack to hold it there until the jobber can take it off your hands?

And then the second part of it is, you know, you're going to have to be holding storage and not contracts, but you're going to have to have connections on the buy side, not all around the state but in different parts of the state. Once again, because you don't know where the incident is going to show up in the state, you don't know where you need to have the supply chain in place. So you kind of have to have a supply chain around the state, or covering the big parts of the state, maybe the large population parts of the state.

But just merely getting it from, you know, from overseas to a dock to a distribution rack isn't going to solve the problem of prices rising. That volume actually has to get sold into the jobbers so that they can get it onto the street for it to have any impact on retail prices. So stopping at the rack may drive down wholesale prices, but

that doesn't necessarily mean it would be a dollar-for-dollar or penny-for-penny impact on pulling down retail prices at the same rate.

So the other part of this forward risk then of this forward contract is once the state brings it in as sort of, in some senses, as a logistics company, as sort of midstream, how do they actually then hand it off to the downstream so that it actually gets into the market and is volume that can be consumed by the consumers?

CHAIRMAN BORENSTEIN: Okay. Thank you, Skip.

So I have one question. If a refinery -- so I certainly don't envision the state running a constant desk trading forward. I would more envision the state having some other financial unit. The state has a Department of Finance who have competent people who are already trading in lots of markets, getting into this market, getting enough expertise to make trades. And then the Exxon-Torrance Refinery blows up and they immediately get on the phone and say this looks bad, we want a delivery, and they keep doing it, recognizing that at some point they're going to lose money on the last shipment because that one is going to come in after the price has gone down.

It seems to me that if they did that, a natural buyer would be Exxon, that they could go to Exxon and say we see you're down your entire production, we're going to bring

some product in, how would you like to buy it? Don't you think Exxon would be interested?

MR. YORK: Well, I sort of think that the impacted party, certainly you would think they would be -- they would -- that would -- I would say that's probably the first phone call you make.

CHAIRMAN BORENSTEIN: Yeah. And then one would also think that Costco and Safeway would be interested if you run --

MR. YORK: The unbranded guys.

CHAIRMAN BORENSTEIN: Yeah, the unbranded guys.

MR. YORK: (Indiscernible) as well. But you need to -- but those guys. And they wouldn't have to do it every day, but they've got to be sort of in the market so they kind of know, you know, so they kind of know who it is that they call at Costco. Who is it that we call at Exxon?

CHAIRMAN BORENSTEIN: Yeah. No. And I don't want to minimize that.

MR. YORK: And you kind of have to be --

CHAIRMAN BORENSTEIN: But I also --

MR. YORK: You have to be on -- but you don't have to do it every day, but you've got to be fairly regular at it.

CHAIRMAN BORENSTEIN: But I don't want to minimize that, but I also do want to recognize that the incumbent

refiners who WSPA represents would not find this is in their interest to have the state doing this. And so you would expect to put forward arguments that this is going to be really difficult. I'm not saying that there's no difficulties. I'm just saying that it's something that could very well save the public billions of dollars, could have over the last 18 months. And therefore, it might be worth developing a modicum of expertise to be able to make these trades.

COMMITTEE MEMBER JAFFE: Saying it would be worth --

CHAIRMAN BORENSTEIN: Mr. Lucas --

COMMITTEE MEMBER JAFFE: It would be worth --

CHAIRMAN BORENSTEIN: -- certainly suggested --

COMMITTEE MEMBER JAFFE: Right.

CHAIRMAN BORENSTEIN: -- this I was a doable thing.

COMMITTEE MEMBER JAFFE: It would be worth having that expertise, even if you weren't going to make the trades, because then you would at least understand what's happening in the marketing --

CHAIRMAN BORENSTEIN: Yeah.

COMMITTEE MEMBER JAFFE: -- and you could respond on policy --

CHAIRMAN BORENSTEIN: I mean, that is the other

point, Skip --

COMMITTEE MEMBER JAFFE: -- (indiscernible).

CHAIRMAN BORENSTEIN: -- you said, you know, you don't -- without knowing what's really going on in the market, how can you solve it? We've been trying now for a year-and-a-half to understand what's really going on in the market. And at one point, and we've been told, that the refiners, including the ones who are a very big chunk of this market, never think about the strategic effect of their production on price, that it's just not in the models. And I find this not credible, or they're incredibly naive and incredibly lucky then in making any money. But I think the idea that a major refiner in California is not taking into account the effect of their output on the market seems not likely to be the case.

So we are trying to find out what's going on in this market. You've done calculations about natural gas. That seems like that's sort of the noise, not the signal here. And so we're trying to figure out what's the big action. It seems the big action is certainly that Exxon's refinery went out, although it's been back on for a while now.

And then there is some issue of imports. And we've been trying to figure out what the issue of imports is. It sounds like we heard today that uncertainty about

price is a big issue. And I guess simply telling us that, you know, you don't know exactly what the problem is, so how can you suggest solutions, is a recipe for having what happened -- exactly what's happened for the last 18 months, which is we didn't know what's going on. We still don't know exactly what's going on.

COMMITTEE MEMBER JAFFE: And let me --

CHAIRMAN BORENSTEIN: But if we wait until we know for certain, we're never going to do anything.

COMMITTEE MEMBER JAFFE: Well, let me just say, the three of us or five of us are getting together once every couple of months. If it was my day job, which it used to be because I was a pricing reporter for the media on oil and gas, if it was my day job, in two months of doing that every single day I could tell Skip exactly what happened in the market.

So, you know, with all due respect to everybody having an opinion, if the California government had someone who was in the market and was participating in the market in some way, even if it was just as an analyst talking to people all day every day, you know, I can tell you, if the person really understood the market, they would be able to walk in here and tell you what's happening. Because we have sort of a theoretical idea that we can't prove just from listening to people talk to us.

So somehow the idea that the state is to incompetent to do something that the oil industry can do itself is really ridiculous. It's just a question of personnel. We could find some young person who's working as a trader now in the oil industry somewhere or for a trading company, and we could hire them for the public good. Because perhaps if they're a millennial or somebody else or near retirement, they would want to do something for the public good. And I can assure you, if it was their day job, they could figure it out.

CHAIRMAN BORENSTEIN: Yeah. There is the issue of compensation.

COMMITTEE MEMBER JAFFE: There could be somewhere out there --

CHAIRMAN BORENSTEIN: Okay. Okay.

COMMITTEE MEMBER JAFFE: -- that would be willing to do it --

CHAIRMAN BORENSTEIN: We can't --

COMMITTEE MEMBER JAFFE: -- as a public service.

CHAIRMAN BORENSTEIN: We're not going to settle that question.

MR. YORK: Yeah. But we'll all in agreement that you have to have skills and capabilities to understand it, and to know which lever to pull and how hard to pull.

COMMITTEE MEMBER JAFFE: Would agree that Adam

Seiminski has the same level of understanding about oil and gas as you do?

MR. YORK: Yeah.

COMMITTEE MEMBER JAFFE: All right. He's a public servant.

MR. YORK: Yeah.

CHAIRMAN BORENSTEIN: Yeah.

COMMITTEE MEMBER JAFFE: Okay.

CHAIRMAN BORENSTEIN: So --

COMMITTEE MEMBER JAFFE: I mean, I'm just making the point.

MR. YORK: And before he was a public servant he was the Chief Oil Economist at Duetsche Bank; right? So he's exactly the prototype of who you're describing; right?

COMMITTEE MEMBER JAFFE: And I'm saying the State of California could have people like Adam Seiminski, because they're out there.

MR. YORK: Exactly.

CHAIRMAN BORENSTEIN: Other comments? Thoughts? Questions?

COMMITTEE MEMBER JAFFE: For those who don't know, he's the head of the Energy Information Administration for the U.S. Department of Energy.

CHAIRMAN BORENSTEIN: Okay. Thank you very much, Skip.

So it is now 3:15, and I swore up and down everybody gets to leave by 4:30. And I'm getting dirty looks even for saying that, but okay. And we do have a public comment period, which I think we're going to put in now, and then move to the Committee discussion.

Are we allowed to do that? Yes. Okay.

MR. EGGERS: Yeah. So if anybody has any public comments, now is the time. Just come right up to the podium.

CHAIRMAN BORENSTEIN: And give us your name and --

MR. EGGERS: And please announce yourself --

CHAIRMAN BORENSTEIN: -- affiliation.

MR. EGGERS: -- before you -- yeah.

MR. NOYES: Good afternoon. Graham Noyes with the Low Carbon Fuels Coalition. Thanks for the opportunity to address this Committee, and thanks for all your work on this crucial issue.

As the name suggests, the Low Carbon Fuels Coalition is a technology-neutral organization. It's a nonprofit that promotes sound low-carbon fuel policies. My own background prior to going back into fuel regulatory law was in biodiesel distribution. I spent quite a bit of time in the California markets learning about infrastructure, rail, rack, vessels, so I have some perspective on this.

And as to the specific proposals that are under

discussion today, the Coalition, generally speaking, would support the ARB comments on the price pressure relief valve regarding the gas inventory requirements. We would support that concept, but suggest that it be expanded out. And I'll talk about the details about that a little bit further. And think the forward purchasing concept is very interesting in terms of addressing these issues.

I know we're entering this conversation a little late, but want to introduce the possibility of low-carbon fuels, and not just new supply but new suppliers into this marketplace as a fundamental way to drive prices down.

One of the things that's been discussed extensively already is the lack of true competition among the market participants. Low-carbon fuel providers very much want to get into this market. They typically are offering fuels that are at a price discount on a wholesale basis to conventional petroleum fuels out there. I would challenge the assertion that there's any cost to California consumers from the low-carbon fuel standard. Typically those prices are coming in less than the petroleum fuels. And as with everywhere else, competition is a good thing that helps consumers, and we see too little of it in the petroleum markets.

We see real chokepoints out there in the distribution system, particularly at storage and the rack.

These are places where the state could work to provide market access to new supplies, new suppliers, cleaner burning fuels that deliver co-benefits on the health and greenhouse gas reduction side. There's opportunities in E-85, in the E-15 to E-30 blend levels. Also, on the diesel side, I know you're not focused on diesel, but renewable diesel is fungible, so you've got great opportunities there. And state participation in terms of doing purchasing and forward purchasing would send great price signals to some of these new facilities that want to be sited in the state and would very much appreciate the opportunity to have guaranteed off-take agreements.

Thank you for the -- if there's any questions, I'm glad to take them.

CHAIRMAN BORENSTEIN: Thank you.

Any questions?

Thank you very much.

MR. MURPHY: My name is Colin Murphy. I'm with NextGen Climate America. Thank you for the opportunity to address the panel today.

First, I wanted to say we generally agree with the content that was presented by the ARB at our D.C. Consumers Union. I find their analysis persuasive.

I wanted to talk about diversification about California's fuel supply. Because I think over the long

run, that is the best hedge we have against fuel price volatility. And I wanted to make two points, the first of which is the long one is probably closer than we anticipate. The LCFS is going to have a ten percent carbon and (indiscernible) reduction by 2020, that's going to require probably a more than ten percent reduction in petroleum consumption on an energy basis. Some of that is credits that have been banked up over the past, but you're still going to see a significant decrease in the amount of petroleum consumed. And that diversification, and also the sort of relaxation it puts on petroleum supplies, will help fight against petroleum price volatility in general.

I think there is a question as to whether we'd be moving out of one volatile market into another market? And I have a letter that I'm submitting to the docket here that does some sort of basic analysis onto that.

I think the answer is there's no reason to believe why switching out of petroleum fuels and into either biofuels or electricity would increase the state's net exposure to price volatility in the vehicle fuel market. There doesn't appear to be any strong sort of causal relationships between petroleum and agricultural, even though that seems somewhat counterintuitive given that petroleum is an input. I go into some of the research that's out in the field on the subject right now. And even

if they are to some extent correlated, unless there's multiplier effect from going to these alternative fuels, simply diversifying and giving either consumers or fuel suppliers or businesses the ability to substitute alternate fuels for petroleum gives them more options for the same reason that having a diverse supply chain would make a manufacturing business less vulnerable to price volatility, or would make a personal investment portfolio less vulnerable to volatility with the natural market.

So I look forward to any questions you have. Thank you.

CHAIRMAN BORENSTEIN: Thank you.

Questions?

Thank you very much.

Do we have any on the WebEx who want to make public comments?

MR. EGGERS: No, we do not.

CHAIRMAN BORENSTEIN: Okay. Then that's the end of the public comment period.

And I think we should move to talk about how we proceed or what we took away from today, and what we should do next. Anybody want to start? Is this like one of those everybody --

COMMITTEE MEMBER SWEENEY: Yeah. I think one of the things that kept coming clear to me is, one, while we've

talked about many of these things, we've been at such a broad conceptual level with so little specificity, it's really hard for people to be all arguing at cross purposes because they're all making different assumptions about what we're talking about. So I think at a minimum that if we're going to make further steps of progress we're going to have to set up a straw woman so that we can be more precise about what we do have in mind as we go forward.

The second comment I have as going forward that I think on over and over again is there will be a lot of unintended consequences over what we do. And until we have more precision about it, it's going to be even more impossible to be able to sort out what those intended consequences are. And I think that we're going to have to do so if we're going to make progress in here.

We also have to have enough information so we can have some quantification. I mean, it's easy to talk about these things will lead to more cost for the consumers. I don't know if a tenth of a percent, a tenth of a penny is very different than $10.00. And if we can't even begin to quantify and of these things we're sort of floundering.

So I don't think that there's anything that's been said so far that causes me to outright reject any of the alternatives, but I see more problem potentially than I saw in the past. But I do think unless we get to that level of

more specificity we're going to always keep talking past each other.

COMMITTEE MEMBER FOOTE: Well, I've had several reactions to what we've heard. Well, let me just begin with a disclaimer. I'm not speaking for the Attorney General or anyone else, other than myself and my reactions to what I've been hearing on this Committee.

First, with regard to the price spikes, probably the most consistent point that we've heard is that uncertainty can be a significant contributor to the price spikes, either because uncertainty in terms of lack of knowledge, uncertainty because of such a small number of large players having so much, a lot of different things. Certainly, I'm not a specialist in this industry the way you guys are, and much more have looked at many other industries where risk is a factor. And risk always enormously increases prices. The less you know the higher the price is to offset the uncertainty. So the spikes are one thing.

But then the industry's reaction to the spikes is something else. And there, what we've been hearing pretty consistently is there's a lack of will to invest in the kind of infrastructure and other sorts of moves that would allow prompt addressing of the spikes. Nobody wants to build more terminals. Nobody wants to create the internal infrastructure to take advantage of the famous excess

product capacity that already exists. There are all kinds of ways in which there's just a lack of will to invest.

There's certainly a lack of will on the part of -- there's sort of lack of political will, and there's also lack of commercial will to invest, all of which makes us look a whole lot like what everyone's been saying, that is this is an industry without a whole lot of competition. And it has all the hallmarks of an oligopolistic industry, a lack of innovation, lack of investment in improving, renewing, and so on. And the few folks that seem willing to come in and really try new stuff don't get rewarded by additional market share in doing that. And that's a structural problem at this point in the industry.

In terms of how you deal with that, probably the first option makes the most sense, and that is you join a larger risk pool, one that has additional competitors, as well as additional sources of options and information. And the price pressure relief valve seems to do that, although just how much effect that would actually have, you're not just looking for effect on prices, you're looking on it on a galvanizing effect to the industry as a whole, so you would want more. You want infrastructure investment of a variety of kinds. And I think the comments just recently made about additional alternatives, fuel alternatives coming in to create more competition is very much a part of that.

All of that said, there's one thing that we haven't really talked about a whole lot, except for Jamie Court, and that is retail prices. I think Jamie was making the point that there seems to be a kind of a disconnect between what we've been talking about, which is supply, and retail prices. And I find myself wondering if the source of the disconnect is simply the fact that now all the retail outlets are owned by the majors, so there isn't a real potential for shifting market share anymore, it's all kind of fixed, or if there are some other characteristics of that, that would be worth greater exploration.

But I mean, there are certainly some objective factors. If we look at Los Angeles, you're variability to access competing sources of retail gas get more and more difficult, especially on the 405.

So there are maybe some changes there that need more attention. And I think that disconnect is something else that may mean that any of these three things that we're talking about will be less effective if we're looking at prices at the pump than we hope that they will be.

That's all for now.

CHAIRMAN BORENSTEIN: Thanks.

Dave or Amy?

BOARD MEMBER HACKETT: I'll go next.

CHAIRMAN BORENSTEIN: Okay.

COMMITTEE MEMBER HACKETT: In kind of looking at these three that we've talked about on the state buying at a fixed price, Vitol brought in 3 million barrels of gas last year, and the state buys somewhere between 3 and 6 million barrels. And so, you know, Vitol, I think, quite properly had been interested in that business, because what it does is it gives them a ratable short. It gives them a customer or customer base. They know what the price is. And they will fill that demand, they will meet that short whatever way that makes the most money for them, whether they buy it from the refiner or they bring it on a boat from Eastern Canada, they'll figure out how to bring it in.

And so I can't see how that is going to improve -- you know, maybe the state wants to buy fixed price gasoline. Maybe the state should look at that. But as a taxpayer, I would say take a look at that and see if that makes sense. But I can't see how that's going to have any impact on price spikes or high prices in general. I don't see the correlation. That's sort of number one.

Number two, inventory requirements, I think, and I think I believe we heard the Vitol guy say this, basically it would increase the cost of doing business for somebody like him, and it makes him less likely to come to California. So it creates barriers to entry and reduces liquidity. So I don't think I would sign up for that.

And then the third one which is, you know, at some price you can, you know, bring in non-complying gasoline. And here it might be worth looking at some numbers.

And, Ryan, if you could find Lynn Westfall's slides and put up, let's see, which one is that, and put up slide nine?

And I'm sitting really close to my screen so I can see the numbers. But you see here that in the 2015 column, demand, export was 42,000 barrels a day; right? And then you go and you look to the right where Lynn's got kind of a quickie supply-demand balance change.

And basically what, I think I got this right, he says, that imports to California from '14 to '15 increased by 41,000 barrels a day. And so the implication is that if that gas that got exported for PADD 5, which includes -- well, that's mostly Washington, you know, there's some in Alaska and Hawaii and not much, but basically there would have been enough gas in this region to sort of offset all those imports. And there was other stuff, that inventories drew, and gas came in from, you know, the east, and there were some exports, et cetera.

And so there's some potential there to, you know, provide mitigation that gives you something to think about. And I think that, you know, you'd have to sort out exactly how to do that. But the one piece of that that gets to be

difficult from a logistics standpoint is finding enough tonnage. Getting enough tankers and barges to move this down to the Northwest or move it down from the Bay Area to L.A. where the shorts normally occur.

So we're not going to solve that problem, but potentially the market will. I mean, there's some signals that, indeed, Jones Act ships are being overbuilt right now, that there isn't going to be as much demand for these new ships as people thought. But those markets move up and down.

So you know, as a practical matter, I don't see anything that we've talked about that's going, within this space, that's going to really remarkably reduce the potential for the price spikes.

CHAIRMAN BORENSTEIN: Amy, you want to weigh in?

COMMITTEE MEMBER JAFFE: So let me say just a few things.

The first thing is because the U.S. Department of Energy is analyzing where to put gasoline stocks in the country, it might behoove the State of California to be proactive in soliciting DOE to consider putting some of them in the State of California. That solves the whole problem of whether the state knows how or how it isn't going to do it because it will be a federal program, and then presumably, if the state had an emergency that was different

than the rest of the country, the state could call the federal government and ask for reliefs. And we have, you know, relief systems. Clearly there must be some mechanism that they developed for New England that could also apply to us.

The other thing I would mention, which is off topic but is something that I've looked at as a professor, and I think Berkeley is looking at it, too, but maybe in a different way than we have, we have started looking at the weather effects of climate change in the State of California, and where probabilities are contiguous with the distribution system for refined products and the manufacturing of products in refineries. And there is several places where there are areas of concern.

And so I don't see this problem getting better, I see this problem as worsening because, you know, everything from a wildfire to flooding to sea level rise is going to effect, even maybe drought, is going to affect different facilities in different parts of the state. And the time to get prepared is now.

So the fact that, you know, in four hours at a time, three times a year, we can't come up with a definitive solution off the top of our heads is not -- shouldn't be taken as a win for the forces that say that, oh, it's too hard to do. Because I think that, you know, with the proper

study and investigation, of course you'd come up with a system that would alleviate these problems, which are going to get worse, not better over time.

I agree with the public comment that as we introduce new fuels, maybe one of those fuels being electricity or, you know, even hydrogen, since we have some hydrogen going into L.A., that that will make it harder for the industry. But let me just say that one of the big issues, even with alternative fuels, because, of course, I've studied that, too, is this question about the competitive point of infrastructure; right? You know, can a new entrant, a new fuel entering into the market compete adequately with an incumbent infrastructure system that's already been amortized and so forth? And so the state, you know, needs to think thoughtfully about that.

On the question of Vitol and the trading in the state, they did open my eyes to one possible concern, which is that if you have an active group of speculators in the state and the state itself is going to hedge, then you run the risk that these speculative players in the state will bet against the state as the state takes a position. And that could actually make things worse if it's not handled properly.

And if the state is using one of those players to do its trading for it, that trader would have a window into

how to manipulate the market. Not naming any names. It doesn't matter what company it was. So that's something to not be looked -- that needs to be looked at carefully.

Retail concentration is something that is highly, highly manageable. It has -- in other markets, people have decided that a retailer has too much concentration in a particular market or a particular part, you know, a particular side of a city. And a regulator can come in and just literally tell someone they have to sell their stations. So if there's a demonstration of that, there's an easy solution. So just throwing that out there.

But we did, at a past meeting, talk about the complexity of some of these issues, and we talked about perhaps the need of the Committee, or CEC, or both, having a workshop that would look at some of these issues. And I think that there's data out there because, you know, people have -- maybe New England already has an example of something they've done with their gasoline stocks, or maybe there's some lessons to be learned from Rita and Katrina and the exercise of some of these options as they've been taken in other locations, or even just learning from things that other places have done to eliminate market power.

So we might want to open our minds to that, instead of just throwing up our hands that it's a complicated topic. One might want to consider having a

workshop with people. And a lot of these issues have been studied in the past, so there's probably some data out there that could be brought to bear.

CHAIRMAN BORENSTEIN: Thanks, Amy.

Let me make a few comments. The workshop that we had planned for the fall is still under planning. And I hope we will have it. October or November of this year is the hope.

Kathleen raised this issue of will to invest. And I'm not sure if it was during this Committee's meeting, but certainly I have heard this from industry participants, that it's a lot to ask, on the one hand, that, you know, we should be investing in this industry, and on the other hand another part of the state is telling us we're about to kill your industry by replacing your product. And so I think I'm not optimistic we're going to see any more investment in the gasoline industry in California, certainly in the refining business.

And we need to think about how to make the market work during this transition period, which is likely to be decades. But refineries are not built for a decade, they're built for 50 years. So I don't think we're going to see that sort of investment anytime soon.

I actually came away less bullish on the price pressure relief valve and more bullish on the forward

purchasing. I'm going to have to think about the point that both Jim and Dave raised, this possibility that a state-sponsored forward purchased load will just crowd out an un-state sponsored, I'm not convinced that's right. But I'm going to have to think about -- I think given that there's more than one of these marketers, if the state went to them and essentially did a competitive RFP for a locked-in price, they might be able to pull in quite a bit.

I also did a back-of-the-envelope calculation. If the state is bringing in a million barrels a week, which would be a huge amount -- well, let's not even say that, let's say half a million barrels a week for four or five weeks, a couple million barrels overall, and let's say this goes south and they lose $10.00 a barrel, they've lost $20 million. That's just -- compared to the sort of money we're seeing flow out of the California economy during the current spike.

Losing $20 million every couple years in response to having an office that jumps in and starts bringing in fuel as soon as this Chevron or Exxon or whatever disruption occurs, seems like it might be a pretty good investment, actually. And there's also the possibility they don't lose that money. And there's also the possibility that they don't end up buying that much fuel, because as soon as they buy the first load it becomes apparent that a lot of other

traders or a lot of other production is going to come into the market.

So you know, I think we've got to think about the numbers. I'm actually -- I'm not as optimistic as Amy that we're going to get a name-brand trader to come for the good of the state, but maybe. And maybe we could actually have some sort of arrangement with a trader who is acting on behalf of the state. But the sort of money we're talking about losing seems not that critical compared to the losses that amount to hundreds of dollars per person in California over the last couple years. This would be pennies.

The price pressure relief valve, listening to the discussion today, I am more concerned about the logistics and about how you would actually make it work, and where you'd have to do the testing to make sure this didn't open up a window.

I wish there weren't such a knee-jerk response from some environmental folks that anything that could possibly ever raise any environmental measure of anything for more than one second is therefore to be immediately rejected. I think that's really not a productive way to address this issue. I think that we really need to ask the question on net, is this good or bad for the environment, not is this good or bad for the environment on Thursday, March 22nd, because that's not really the way people's lungs

work. So we would have to ask the question. There would be better days than worse days. How could be mitigate it?

I did these calculations a long time ago about auto buybacks and using the assumptions the state was making then about auto buybacks. It seemed that back then I think I did it with $0.15 a gallon. It easily paid for reducing PM and NOx more than the additional that would come in. And as Amy pointed out, if it's a market power issue you might not have to actually ever do this. Just the threat of this might be enough to keep prices from spiking.

So, you know, we heard a lot today that, you know, this Committee really hasn't put forward a concrete proposal and hasn't given us real analysis of it. I will remind the public that this Committee is this set of people, and part of Ryan's time, and part of Susan's time, and that's it. There are no resources for hiring consultants to do major studies, or even doing back-of-the-envelope calculations with any depth. So you're not going to get that out of this Committee.

I hope that the folks who do have resources to do that will do a more serious job than, frankly, we saw today about how we would balance the costs and benefits of that.

And then I would like to see a sort of less advocacy approach to how difficult this would be, is it really feasible? And I'm open to saying, no, this really

doesn't make sense, that it just would be too difficult to bring in federally formulated gasoline or conventional and track it well enough so it doesn't become a problem. So I'm not ready to jettison it, but I am more appreciative of the potential problems.

The inventory requirements, I guess in some ways seems like the biggest headache and potential cost with the -- in a sense that would impose a constant inflation of the price of gasoline in California that would just be X cents per gallon that would be constantly weighing on the economy rather than having spikes. And I hope we can avoid that, particularly if then it still leaves open the problem of the political decision of when you actually release those inventories. The forward purchasing, I have a vision in my head of a fed-like operation, not a governor's office operation, that is traders who operate on behalf of the government but are not -- and at some point are answerable to the state, but are not essentially operating in a political environment.

Maybe that's naive but it seems that's potential feasible, particularly since, at least my back-of-the-envelope calculations are that this would just not be a huge amount of money. This would cost, at worst, cost Californians a dollar per person per year or something like that and would potentially have a significant effect, if we

had another outage like this.

And then the retail structure issue and retail concentration, I don't agree with Amy that it's a simple problem. I'm pretty sure there is no authority of the state to step in and say you must -- just unilaterally say we've decided this is too concentrated.

COMMITTEE MEMBER JAFFE: Isn't that regulated by the Justice Department?

CHAIRMAN BORENSTEIN: It's not regulated. There's antitrust laws, but they're not -- but simply owning a lot of retail outlets is not a violation of the antitrust law. Now, if they come forward with a merger, then you can fight it based on that. And we were saying that there's a possibility that after the fact you can go back and revisit mergers, that's extremely rare. But it is a real issue. Consumer Watchdog has convinced me, you know, that this could be a piece of the puzzle, and that we should be looking more into it.

I thought -- when Consumer Watchdog first came forward with this argument, I went back, and the CEC, and I separately did some calculations in that almost all of the run-up for 2015, and I think this is actually consistent with your numbers, Dave, was that spot was not down further downstream, and therefore wouldn't be solved by addressing the retail. But I am certainly open to that if it is an

issue. I think there are potentials. And with some thinking around the edges we could think about how that would actually work.

It's not that the refineries own the outlets, by the way. It's that they have branded outlets, and therefore those outlets have to buy their product. They don't directly control the pricing at the retail, but they do control the prices to the retailers.

Jim?

COMMITTEE MEMBER SWEENEY: Yeah. I'd like to make a couple of comments that are less directly related to these specific proposals.

The first thing is I heard the uncertainty argument maybe differently than some of the other people here did. The reason I was asking Vitol about are you willing to take risks, are you doing it on an expected value basis, is consistent with my view of traders are not so worried about risk, per se, they're worried about the expectation of how much they're going to get. And they're in the business to make money by doing better guesses than the other people in the business, and that's part of their job.

What I heard people say, if I've got this correctly, is not that there was risk, per se, but that the beliefs about when the ExxonMobil refinery was going to come

back into operation was systematically wrong. So it was different than uncertainty, per se, it's systematic errors, that people believed it was going to come online, and the South Coast Air Quality District or other organizations said, no, you're not coming online at this time, or internally they found more problems and they said they're not coming in.

So solving that problem of uncertainty isn't one you solve by the government agencies jumping in, because the government agencies up here at the state level don't have better information about what's going to happen there, about what the South Coast Air Quality District is going to do, or what the technological problems are within ExxonMobil.

So I think we've got to be really careful about differentiating between uncertainty, per se, and the fact in this case there was systematic wrong information, and we can argue as to why, but government doesn't necessarily solve that problem.

CHAIRMAN BORENSTEIN: Jim, can I --

COMMITTEE MEMBER SWEENEY: Yeah.

CHAIRMAN BORENSTEIN: -- take issue with that --

COMMITTEE MEMBER SWEENEY: Sure.

CHAIRMAN BORENSTEIN: -- before you move on? Here's what I'm thinking about that, that I think does argue for a government intervention.

First of all, there is certainly the possibility that Exxon would continually signal, we're about to come back online when they know perfectly well they're not, or they know it's unlikely. Because if you do come back online the last thing you want is a bunch of imports coming in.

COMMITTEE MEMBER SWEENEY: That's possible, but do we have any evidence --

CHAIRMAN BORENSTEIN: No, we don't have --

COMMITTEE MEMBER SWEENEY: -- that that happened?

CHAIRMAN BORENSTEIN: -- any evidence.

COMMITTEE MEMBER SWEENEY: Okay.

CHAIRMAN BORENSTEIN: But the incentive is there to do that. You're an economist.

COMMITTEE MEMBER SWEENEY: Sure.

CHAIRMAN BORENSTEIN: You agree, there's an incentive.

COMMITTEE MEMBER SWEENEY: Sure. And I differentiate between incentives to do something and things that you may choose not to do because of the ethics that you have, or because you may get caught if you're lying.

CHAIRMAN BORENSTEIN: Well, I mean, I don't think it's a matter --

COMMITTEE MEMBER SWEENEY: So I -- yeah.

CHAIRMAN BORENSTEIN: -- ethics. I think it's a matter of spin. It's a matter of being a leader of an

organization who is very optimistic, who thinks you're going to -- but let me say one other thing --

COMMITTEE MEMBER SWEENEY: Yeah.

CHAIRMAN BORENSTEIN: -- about the --

COMMITTEE MEMBER SWEENEY: Let's go on.

COMMITTEE MEMBER JAFFE: There have been incidents --

COMMITTEE MEMBER SWEENEY: And I'll let you say it --

COMMITTEE MEMBER JAFFE: There have been incidents --

COMMITTEE MEMBER SWEENEY: Then push it back.

COMMITTEE MEMBER JAFFE: -- with the trade publications that people have been found to plant information in the trade publications, quote unquote, "anonymously," and then it turned out there were --

COMMITTEE MEMBER SWEENEY: Oh, sure.

COMMITTEE MEMBER JAFFE: -- there were incentives, so --

CHAIRMAN BORENSTEIN: There was the LIBOR scandal that went on for years.

The other piece of this is I think what we are worried about here is not just economic efficiency, it's a huge wealth transfer that's occurred. And there is an externality, using the term slightly loosely, from the state

getting into the market, which is even if the state loses money on it, if it pushes down the market price it redistributes excessively high prices back to consumers. And so I think that it may be a trade that a Vitol doesn't want to take and that the state might, on average, lose a bit of money on, and yet is still solving the problem that we're here to discuss which is very high gasoline prices.

COMMITTEE MEMBER JAFFE: And let specify what Severin is saying. What's Severin is saying is that average consumers in California, and low-income people who are disproportionately hurt by high gasoline prices because it's a much higher part of their household budget, income was transferred from them to refining companies in 2015 to the tune of $10 billion. So average people, voters, gave up an extra $10 billion to corporations. And I think we need to think carefully about that.

COMMITTEE MEMBER SWEENEY: Yeah. By the way, that's a separate point about what you want to do, versus the point I wanted to make. Let's be clear about risk, per se, versus errors. I don't know that Exxon didn't manipulate the information or they did manipulate the information. I don't think we have any evidence in there, so I don't reject that possibility.

But I want to go to one more sort of a bottom line of where I'm coming from now. I look at each of these

proposals, and they may or may not -- they could make some benefits at the margin. I don't think they get a hold of the jugular of what we're talking about. And if were at the beginning of this process and you told me that you'd have this elevation of prices this long, I'd say, no, it's not -- it can't happen, it won't happen because there will be lots of entry into the supply system. There will be more imports coming in rapidly. There will be ways of people adjusting on their refineries in other states so that they can make CARBOB in there. There will be supply expansions and market adjustments that will allow the price spike to happen, maybe a week, maybe a month, maybe two months, but it won't happen as long as it did.

And so I ask, I don't think we have fully identified why it lasted as long as it did. However, I think it has to be somehow the mechanisms of entry into the industry or expansion of existing players inhibited somehow from what we would have expected. We've asked questions about whether the inhibition is because of the physical ability to bring it in, in ports? And the answer I think we've heard is, no, that's really not been a problem. Is the inhibition the ability to move the gasoline around in pipelines? No, that's not the problem.

I think that there really has to be much more understanding about all of those rigidities that are

reducing it. I do believe that there is a rigidity at the retail level, but it's not because the oil companies own the refineries -- the retail stations, because for the most part they don't. But they do have particular contracts which in the contractual structures create rigidities associated with the branding system. And what I don't know is whether the branding system, per se, and the ability of the refiners to unilaterally set their prices for sales of branded gasoline, whether, in fact, that is one of the essentially rigidities that is stopping the system from coming into being. It's what Jamie Court has been saying in different words, but I think that there's really something potentially there.

Well, if that is the issue, then having the ability of the state to import more gasoline doesn't fix the problem. If you have future purchases of gasoline by the state, so even refinery inventory in place, it doesn't fix the problem.

So what I'm feeling at my gut level I'm comfortable about is we're jumping to debating several solutions when I don't think -- it's not clear to me that those solutions correspond to the underlying problem that caused it. And it is a market structure problem, I believe, and that we've got to come to grips with in some way.

COMMITTEE MEMBER JAFFE: Let me just comment on two things. Number one --

CHAIRMAN BORENSTEIN: Amy?

COMMITTEE MEMBER JAFFE: Number one, we have seen this problem before, when a concentration of companies control a particular trading market. We've seen it with the Alaska North Slope market, we've seen it in the Brent (phonetic) market. We have seen groups of companies move against the trading company that was trying to break and take a position in the market, and that company has gotten punished. And some of them don't exist anymore; right?

So the other thing we've seen is what we know about being economists, is we know what the concept of parallelism is. So you don't have to necessarily have collusion, you can just have parallelism, right, where everybody sees what everybody else is doing on price and nobody breaks from the pack; right?

So you know, the bottom line is it is the responsibility of government to create the market design so that an oligopoly doesn't form that transfers $10 billion from average people to corporations. So there's no question that there is a responsibility here in the public domain.

So the question is really, you know, if we're saying that and we think it's such a large conspiracy that it's the responsibility of the Attorney General, you know, I guess that's different than saying the market is structured and therefore there's no way to fix it in the market. Now,

the United States Government, together with Europe, Japan, and South Korea figured out that OPEC had monopoly power, and so they created the inventory system of the International Energy Agency; right?

So you know, I'm not saying whether any of these solutions are or aren't the solution. I'm saying that there's two sets of ways of looking at the problem. Problem number one -- well, there's three ways of looking at the problem.

We can take a sort of, you know, trust-busting, you know, approach to the problem and just say that's it. You know, there's a big problem here in the State of California. We don't like the ownership structure of the facilities. We're going to bring in a regulator. We're going to analyze it. And we're going to tell some people they have to shed assets; right? Or you go in the direction of we believe that there's parallelism or some kind of evidence of too much market power being exercised over a consistently long period of time, and so we're going to handle that on a prosecutorial basis. Or three, we believe that there is this market power but it can be alleviated, maybe not by one policy, maybe it has to be a series of policies; right? Maybe, you know, it's a combination of some of the things we proposed or an additional thing; right?

But, you know, I think to say that, oh, you know, there's clearly a problem. The market is not behaving in a way that markets correct for an extended period of time. And therefore, since we can't prove what it is, we're just going to let go another two years having the, you know, working poor of California transfer their income to corporations, that's not an acceptable solution.

COMMITTEE MEMBER SWEENEY: Just let me quickly respond.

First, you asserted a lot of things well beyond what I was saying about market structure. But if you're trying to solve the problem by getting instruments that are not related to the underlying source of the problem, you're just as likely to make things worse than as to make it better. You don't fix it.

So I just feel uncomfortable. I didn't say we shouldn't do anything. I just feel uncomfortable about recommending doing something without understanding, really understanding the nature of the problem or jumping to some things --

COMMITTEE MEMBER JAFFE: Same thing.

COMMITTEE MEMBER SWEENEY: -- which are different --

COMMITTEE MEMBER JAFFE: It's the same thing.

COMMITTEE MEMBER SWEENEY: -- which are different

from the nature.

COMMITTEE MEMBER JAFFE: The market problem is a concentration of market power among a small amount of players. And whether they exercise that market power at the retail level, they exercise that market power at the rack or they exercise that through the use of their docks or by colluding with each other. I don't think it really matters. We know what the problem is. The problem is there's too much market power in the State of California.

CHAIRMAN BORENSTEIN: Okay.

COMMITTEE MEMBER SWEENEY: I'm glad you know.

CHAIRMAN BORENSTEIN: I guess I'm not as convinced that we know what the problem is. But I also think that we are never going to know perfectly what the problem is. We're not going to without power of subpoena, and some negligent people in the corporations writing documents that their lawyers would tell them never to write, ever have rock-solid proof of market power, exercising market power.

And that's why in some ways I'm looking for solutions that are low- or no-regret solutions which makes the forward purchasing, I think sort of attractive, given the back of the back-of-the-envelope calculation I've done. I'm not sure of that. Certainly, inventory requirements will require a lot more capital investment. And the price pressure relief valve, which I though was a pretty simple

no-regrets solution, may have bigger logistical problems than I had fully appreciated.

But I'm hearing an interest in -- I'm seeing the clock and thinking about what we're doing next -- in focusing a meeting on retail and a better understanding of retail. Would there be interest in doing that?

COMMITTEE MEMBER FOOTE: Oh, you'd definitely get that here.

CHAIRMAN BORENSTEIN: Okay.

BOARD MEMBER HACKETT: Yeah.

CHAIRMAN BORENSTEIN: And, Dave, you're not --

BOARD MEMBER HACKETT: Okay.

CHAIRMAN BORENSTEIN: Okay. We also have talked about having a workshop, the idea of which was to bring in research on competition and price spikes. And there's some work out there directly on the California market, some of which accesses, confidentially, IEA data.

So I think that I would like to propose that we think about two meetings, one which would probably be the next one would be this workshop, which would be a broad -- I'm trying to think about order. Maybe it actually makes sense to do it in the opposite order, to first have a meeting that would be particularly on retail and to learn about retail, and then to have a workshop that would be a broader competition and logistical disruptions in California

gasoline. And that would be the one that, A, would be a workshop, the rules for which are slightly different, and B, would be broader whereas the meeting would be specifically on retail and understanding retail better.

I'm seeing some thumbs-up. I'm seeing some nodding. Okay.

I want to say one other thing. First of all, we're not a legislative body. We're not an administrative body. We're not a regulatory body. All we get to do at best is issue a report saying we looked into all this stuff and here's what we think. And we hope the CEC and/or the legislature pays attention to it. So I'm not feeling like -- and as I've mentioned once or twice, resources are scarce for this Committee, so we're not going to be able to write a detailed proposal.

So I think that just trying to get a better idea, narrow down options, and give realistic pros and cons on some possibilities, when the legislature in particular pays attention to this again, which won't happen with the price of oil at $40.00 a barrel, is what we should consider our mandate. And, Commissioner Scott, I see sort of nodding, so I hope -- and so I would like to continue with this and, I hope with a couple more meetings, be ready to start wrapping it up at that point and saying here's what we've learned, which is not going to be all I would want to know, but I

think we're never going to get there.

COMMITTEE MEMBER SWEENEY: I think a couple more meetings may be a little optimistic about how long it will take, I think. But that's okay. We can decide meeting by meeting whether there's going to be a couple more, or even more than that.

CHAIRMAN BORENSTEIN: Yeah. And I think Bagley-Keene is going to make it very difficult to do the reports or whatever product writing in an efficient way. But I think at some point that's where we will turn, and maybe at that point it will be a couple more meetings. But we will -- I promise you to try to do this as efficiently as possible.

Commissioner Scott?

COMMISSIONER SCOTT: Yeah. I'll just note for the report writing, the way that -- the Energy Commission, as you know, each year does an Integrated Energy Policy Report which has the thoughts and feedback of all five Commissioners in it. It's a lot of work of the staff person who has to take all of our comments and make them her comments so that we can't see who's saying what about which thing, because that would be the Bagley-Keene violation.

But our staff is prepared to do that with you all. So as you're writing you can assign out who you want to write each chapter. And then they can put it together and

then get it back to you in a way where it's each member's different thoughts and opinions on the topics aren't getting there, but you'll see the comments through the way that, you know, they'll either come as Ryan's comments or Susan's comments.

And so we've got a plan in place to help you get the report drafted when you get to that point.

CHAIRMAN BORENSTEIN: Okay. Dave?

BOARD MEMBER HACKETT: Yeah. Two quick things.

Jim, you asked Jay McKeeman what this gasoline bank would cost. And the answer to that is if you greet it with 100,000 barrels of gas that you want in L.A., that's about $6 million at today's price, $6 million for 100,000 barrels of gasoline in a tank in Los Angeles.

COMMITTEE MEMBER SWEENEY: Are you talking about the annual or monthly or capital cost?

COMMITTEE MEMBER HACKETT: Yes. Six million bucks to by the gas, and $2 million a year to run the program.

COMMITTEE MEMBER SWEENEY: That's what I want to know.

BOARD MEMBER HACKETT: So that was the one thing.

And the second thing is Kathleen keeps talking about how there's slack capacity in refining. And so I would like to understand what she means about that, because I'm not sure if I agree with that.

And so under Bagley-Keene, how do she and I have that conversation, or is that a problem?

CHAIRMAN BORENSTEIN: You have it right here in front of everybody. Because otherwise that -- or I guess you could be designated as Bagley-Keene buddies, as I am with Jim, because you're allowed to talk to one other person. That would leave Amy out in the cold.

COMMITTEE MEMBER JAFFE: That's okay.

CHAIRMAN BORENSTEIN: She's okay.

COMMITTEE MEMBER JAFFE: I like being an outsider.

CHAIRMAN BORENSTEIN: Okay.

BOARD MEMBER HACKETT: And so does that take an act of god, or how does that work?

CHAIRMAN BORENSTEIN: Pardon?

BOARD MEMBER HACKETT: What does it take to get so designated?

MR. EGGERS: Dave, this is --

I don't know, Kathleen, do you want to do that?

MR. EGGERS: David, this is Ryan Eggers with the Energy Commission. We'll talk to you about that offline and we'll --

BOARD MEMBER HACKETT: Okay.

MR. EGGERS: -- figure out a way to make that happen.

COMMITTEE MEMBER HACKETT: Thank you.

CHAIRMAN BORENSTEIN: They can talk to you about whether you can talk to each other offline.

COMMITTEE MEMBER SWEENEY: Maybe the Chairman has to appoint you to his buddies.

CHAIRMAN BORENSTEIN: If I do, I do, I hereby do. But if there's more to it, we'll work on that.

MR. EGGERS: Samantha, did you want to --

CHAIRMAN BORENSTEIN: Yes.

MR. EGGERS: Samantha will direct.

CHAIRMAN BORENSTEIN: Samantha, our Bagley-Keene expert.

Samantha?

MS. AARONS: Samantha Aarons, Staff Attorney with the Energy Commission.

There's no formal process for designating Bagley-Keene buddies. But we can, as Ryan mentioned, if you want to decide to go forward with that tactic and there's no overlap between the currently existing alliances, we can have the offline discussion to explain to you how it works. But I think that there will be no overlap if it's Committee Member Hackett and Committee Member Foote with the existing alliance. So we can decide to go ahead with that, and we'll contact you offline about how it works.

CHAIRMAN BORENSTEIN: Okay.

MR. EGGERS: So just to recap really quick. We

are changing focus from -- the next possible get together will not be the workshop. We will be working towards setting up a meeting regarding retail. I just wanted to confirm that.

CHAIRMAN BORENSTEIN: Yes.

MR. EGGERS: Okay.

CHAIRMAN BORENSTEIN: And we'll have all the same scheduling problems we would have had for the workshop.

MR. EGGERS: Yeah. But I will go about setting up a (indiscernible) to make sure, you know, we can align everybody's schedules to that. So me and my staff will begin working on that.

CHAIRMAN BORENSTEIN: Okay. And I think I am going to come out 20 minutes ahead, if I don't hear any objection. Okay. This Committee is adjourned. Thank you very much.

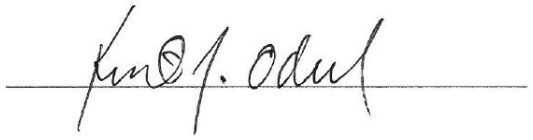
(Whereupon at 4:10 p.m., the meeting was adjourned.)

REPORTER'S CERTIFICATE

I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were reported by me, a certified electronic court reporter and a disinterested person, and was under my supervision thereafter transcribed into typewriting.

And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

IN WITNESS WHEREOF, I have hereunto set my hand this 29th day of August, 2016.



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And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

I certify that the foregoing is a correct transcript, to the best of my ability, from the electronic sound recording of the proceedings in the above-entitled matter.

Martha L. Nelson

MARTHA L. NELSON, CERT**367

August 29, 2016