Thank you very much. We'll now go to the questioning of the witnesses. And Mr. McCullough, I want to drill down on what you are saying about this gaping hole. Because we in the West obviously have always looked at this issue, Washington, Oregon, and California, just because we are, as people have always said, an isolated West Coast market. So we've tracked these issues for a long time.

And during the Enron crisis, a lot of people have blamed it for a long time on environmental issues. They kept saying it's all about environmental issues when in reality, it didn't turn out to be about environmental issues. It turned out to be about a lack of transparency and energy traders who took advantage of schemes to manipulate supply.

In very tight markets, obviously, this is when you have to be concerned about these issues. You're saying you see something now in West Coast prices that are not about supply and demand. And you're saying that this benchmark price index is a very important tool for settling the price. Could you explain that and why there isn't a lack of transparency?

Well, first of all, the West Coast's gasoline prices relate to the Brent price, not to the US WTI price. WTI, for people who are new to this, simply means our heartland. And that's Cushing, where it is in the Anadarko Basin. And we're now talking about wildcatter companies, generally smaller and at the moment difficult to finance further drilling.

But the reality in the West Coast is that we buy our oil on the world markets. It is processed by refineries in Washington state and California. Now, I gave a lecture on this at the university last year on where do prices come from.

And unfortunately, prices are not issued magically the way they appear in a textbook. They have to be reported. And we report our commodity prices in world markets in two different ways.

We either have them in very well-regulated exchanges, like the Chicago Board of Trade, NYMEX, ICE, etc. A lot of surveillance there, the rules are well understood, and everything is generally properly reported and works efficiently for the U.S. economy.

That's not true everywhere. We also rely on newsletters. Now, these are actually quite often very well run. It's not as if the newsletters are evildoers, they aren't. But this is a voluntary process, the algorithms are often not public.

The newsletters collect transactions, generally by voluntary submissions, and then generate an index.
Now that index then wanders through an entire economic process. So the refinery price to the middleman, the racks, depends on the index; quite often the price to the gas station, especially if it belongs to a major producer, depends on that index. It's literally written into the contract.

On the West Coast, we have one major price reporting agency. They're called the Oil Price Information Service. Been there for many years. Very effective, very interesting, central to the operation of the industry.

In 2012, Ms. Cantwell, certainly Mr. Wyden, Ms. Feinstein, looked into that. We wrote reports at that period. I appeared in hearings during that period. And we identified that there were sudden shifts in that didn't seem to match fundamentals at all.

October 1, 2012, we had a 50-cent increase in that index. No one ever could understand why that index changed. We had similar results in 2015. And then we had some last month.

Now, in a perfect world, the FTC would subscribe to that newsletter. My information is they don't. In a perfect world, the FTC would have experts that would understand the algorithm that OPEC chooses to go from transactions to prices.

And bear in mind, this isn't an economics textbook. This is the real world where that algorithm drives real dollars from real consumers' pockets to traders' profits, and that is a serious issue we discovered with Enron and their counterparties in 2003 with a FERC final report.

**CANTWELL:** Your time is about up, but so you see anomalies? You think, in the information you're looking at in those indexes -- now, you see anomalies that you don't think are supply and demand?

**MCCULLOUGH:** Absolutely, there's a wide differential at the moment.

**CANTWELL:** Thank you.
CANTWELL: The very issue that there isn't transparency in this particular aspect of the market at the petroleum level. To Ms. Lummis' line of questioning, so you're saying that the price discovery that is supposed to be in a market as it relates to the post-refinery product, that there is an opaqueness to the market that we don't actually understand what those trades are. No one is looking at those trades. Is that right, Mr. McCullough?

MCCULLOUGH: I do, and I think Senator Lummis illustrated that very well. She asked a series of completely reasonable questions, all of which indicated that this was a bit of a mystery to her as well. And I don't disrespect her for it. It is a mystery.

She asked, where did WTI and Brent come from? Those are worldwide markets; they're dominated by bad actors. Saudi and Russia certainly are two actors who we worry about. So we don't have much discovery in that. We probably never will. Everyone in the industry believes the Russians and the Saudis are never truthful about their activities. That's fine. But when we get to our shores, we're benefited by knowing more. And with many citizens wondering where these numbers come from, it's well within our abilities to be able to answer it.

I've worked for the FTC on some of the previous investigations. And quite bluntly, they've started from scratch. And that's a terrible place to start. They did not have the data. I've been told, I can't prove it, but I've been told the FTC does not get a copy of the OPUS newsletter. That's disgraceful. I don't know why that would be. They certainly need that, any analyst does. So these are things we can fix very easily. And we can give citizens that answer.

CANTWELL: So I'm concerned that in the flavor of today's hearing that people are, it reminds me so much of the Enron discussion. It literally took until we had the traders on a tape saying what they had done. People used all the same things that they're saying today. So the fact is, the FTC doesn't collect or look at this data, is that correct?

MCCULLOUGH: Well, they have no way to do it unless they actually go for full bore investigation and subpoenas. And the fact is that the number of documents is enormous. In other contexts, I've been through three and a half million documents on some of these issues. This is not something you pick up one morning in an investigation. This requires ongoing transparency so you know where to look.

The only reason we got through the manipulations on electricity natural gas is that Enron employed some of the most incompetent traders known to man. And if they had not been singing songs about raping customers, and burning fires, possibly we would never have had the political will to get the transparency we have in those markets.

Now, I do not believe there is a single major company in America that would employ traders that stupid ever again, for obvious reasons. But the fact is, we need that. We need it in all of our commodities. We have it in almost all of our commodities, except for this gaping hole in the center in oil and gasoline. Not hard to fix, certainly beneficial.

If Senator Cruz and the other senators here are doubting that there is any, we'll prove it. They'll be right. And I'll be satisfied. But if, as we expect, we do see anomalies, we should get to the bottom and reassure our citizens.
CANTWELL: And you see some anomalies that concern you now about the West Coast market?

MCCULLOUGH: We certainly [do], when the price kept rising in California and the oil price was falling. That was a unique circumstance. And that didn't happen just one day, that went on for much of March.

CANTWELL: The FERC authority that has existed, basically, I believe, has found something like a billion dollars in fines and discouragement. Some of them are the very sector that also was involved in this sector of energy. Are you amazed that it still goes on today?

MCCULLOUGH: Not at all. You know, some of these scams are so tempting to a trader that he's willing to take the risk and the returns are enormous. We don't disbar traders for having bad acts. Sometimes they'll be forbidden by the CFTC to trade for a while.

But it's interesting in Texas when we were reviewing a market manipulation issue, and we found an Enron trader playing the same games years later. So there's nothing for it. We just need to have the facts out there so that we know what to do with it. And it's not difficult. And we do it everywhere else.

CANTWELL: I'd like to thank the witnesses for being here today. I think our colleagues, I had hoped we'd have a little bit more discussion on transparency. But I know this is a very important subject to everybody and we'd like to get answers about how to move forward.