

Docket No. UG-230968 - Vol. III

WUTC v. Puget Sound Energy

October 9, 2024



1325 Fourth Avenue, Suite 1840 Seattle, Washington 98101
Bellingham | Everett | Tacoma | Olympia | Yakima | Spokane
Seattle 206.287.9066 Tacoma 253.235.0111 Eastern Washington 509.624.3261

www.buellrealtime.com

email: info@buellrealtime.com

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of the Petition of)
WASHINGTON UTILITIES AND)
TRANSPORTATION COMMISSION,)
No. UG-230968
Complainant,)
and)
PUGET SOUND ENERGY,)
Respondent.)

EVIDENTIARY HEARING, VOLUME III
BEFORE ADMINISTRATIVE LAW JUDGE AMY BONFRISCO
October 9, 2024
621 Woodland Square Loop SE
Lacey, Washington 98504

Pages 44 - 180

Reporter: Christy Sheppard, CCR, RPR No. 1932

EXAMINATION INDEX
WITNESS: PAGE NO.
MATT STEUERWALT:
Cross-Examination by Mr. Callaghan 74
Cross-Examination by Mr. O'Neill 78
Redirect Examination by Ms. Barnett 90
JASON KUZMA:
Cross-Examination by Mr. Callaghan 93
TODD SHIPMAN:
Cross-Examination by Mr. Callaghan 104
Redirect Examination by Ms. Barnett 109
CHRISTOPHER MICKELSON:
Cross-Examination by Mr. Callaghan 110
JAMIE MARTIN:
Cross-Examination by Mr. Callaghan 118
Redirect Examination by Ms. Barnett 128
ROBERT EARLE:
Cross-Examination by Mr. Callaghan 132
Redirect Examination by Mr. O'Neill 140
Cross-Examination by Ms. Gravotta 145
CHRISTOPHER MCGUIRE:
Cross-Examination by Mr. O'Neill 160
Redirect Examination by Mr. Callaghan 168
WILLIAM GEHRKE:
Cross-Examination by Mr. O'Neill 170
Redirect Examination by Ms. Gravotta 174

APPEARANCES
For the Respondent Puget Sound Energy:
Donna Barnett
Perkins Coie
10885 Northeast Fourth Street
Suite 700
Bellevue, WA 98004-5579
dbarnett@perkinscoie.com
For Commission Staff:
Nash Callaghan
Office of the Attorney General
Utilities & Transportation Division
PO Box 40128
Olympia, WA 98504-0128
nash.callaghan@atg.wa.gov
For Public Counsel:
Thomas "Tad" Robinson O'Neill
Office of the Attorney General
800 Fifth Avenue
Suite 2000
Seattle, WA 98104-3188
tad.oneill@atg.wa.gov
For Alliance of Western Energy Consumers:
Sommer Moser
Davison Van Cleve
107 SE Washington Street
Suite 430
Portland, OR 97214
sjm@dvclaw.com
For Joint Environmental Advocates:
Noelia Gravotta
Earthjustice
810 3rd Avenue
Suite 610
Seattle, WA 98104-1645
ngravotta@earthjustice.org

JUDGE BONFRISCO: Today is October 9th, 2024 and the time is 9:00 a.m. My name is Amy Bonfrisco and I'm an Administrative Law Judge with the Washington Utilities & Transportation Commission, and I'm presiding over this matter along with Commission Judge Brown.
We are here today for an evidentiary hearing in docket 230968. This is a case captioned, in the matter of WUTC versus Puget Sound Energy.
First, I would like to start by taking appearances by party, and I would like to start with PSE counsel.
MS. BARNETT: Good morning. Donna Barnett with Perkins Coie on behalf of Puget Sound Energy.
MR. CALLAGHAN: Thank you, Your Honor. Nash Callaghan, Assistant Attorney General on behalf of Commission Staff.
JUDGE BONFRISCO: Great. And Public Counsel?
MR. O'NEILL: Good morning, Your Honor. Tad Robinson O'Neill on behalf of Public Counsel.
JUDGE BROWN: And do you have a representative from the Joint Environmental Advocates present?
MS. GRAVOTTA: Yes, Your Honor.

1 Noelia Gravotta on behalf of Joint Environmental
2 Advocates.

3 JUDGE BONFRISCO: And what about
4 Alliance of Western Energy Consumers, do we have a
5 representative present today?

6 MS. MOSER: Good morning, Your Honor.
7 Sommer Moser with Davison Van Cleve on behalf of AWEC.

8 JUDGE BONFRISCO: Perfect. I want to
9 provide a brief road map of our plans today. We are
10 going to begin with addressing prefiled exhibits and
11 testimony, addressing any objections, and we will then
12 allow the parties an opportunity to provide brief opening
13 statements limited to ten minutes. We will then turn to
14 the cross-examination of the witnesses following parties'
15 agreed order of presentation, and then we will take each
16 of the witnesses individually.

17 From what I saw in the proposed order of
18 presentation and time estimates, it appears the parties
19 estimate there will be approximately an hour and 80
20 minutes of cross-examination today.

21 Am I echoing? Okay. And just as a side note, if we
22 could just mute technically just so it doesn't echo in
23 here and unmute when you are speaking that would be
24 great, just to have a record. Thank you.

25 And so taking that into account, you know, with

1 testimony.

2 MS. BARNETT: Your Honor, I thought
3 you just meant the witnesses.

4 I just wanted to make a couple clarifications on the
5 exhibits. I believe that the exhibit list -- I just
6 wanted to clarify for Puget Sound Energy there was -- on
7 the top of the exhibit list we referenced tariff sheets,
8 and I just wanted to clarify it looked like that was a
9 hyperlink so we couldn't see exactly what document was
10 linked, so we just wanted to clarify that those tariff
11 sheets are the ones that are currently in effect and not
12 the previous version or versions of Schedule 111.

13 JUDGE BONFRISCO: The hyperlinks were
14 from the November 22nd, 2023 date.

15 MS. BARNETT: Okay. The tariff sheets
16 that we -- well, probably all of them should be in the
17 record, but the ones that I specifically was trying to
18 submit as exhibits are the ones that are currently
19 effective.

20 JUDGE BONFRISCO: And I now have --
21 when you -- let me pull up that real quick, that
22 hyperlink because I believe it's what we have in the
23 record. So I would have appended what was previously
24 filed in the record.

25 MS. BARNETT: I just didn't know if

1 breaks and everything else, I think it's likely we are
2 going to end before noon today, but can tentatively plan
3 on taking a break at 10:30 or after questions by the
4 parties.

5 I also want to remind parties, like I just said,
6 about when you are speaking online then you can unmute
7 yourself, and then basically when you are not having a
8 speaking role just keep it on mute so we don't have
9 parties talking over one another.

10 And then if there is any technical issues or anybody
11 drops from the line, you know, just flag that either by
12 raising your hand online or making a note in the comments
13 through Zoom and we can address that.

14 Before I proceed, are there any housekeeping
15 matters? Okay. Great. So I want to turn to exhibits
16 and the admission of the prefiled exhibits.

17 On October 4th, I circulated an exhibit list that
18 included all the prefiled testimony, including cross
19 exhibits filed and encouraged the parties to stipulate to
20 any of those exhibits. And they didn't object in
21 advance, nobody has objected in advance that I'm aware
22 of, so I just want to confirm that the parties don't have
23 any concerns with the current ordering of the witnesses.

24 Hearing none, let the record reflect there's no
25 objections and we will go ahead and admit the prefiled

1 there were multiple versions in the record.

2 COMMISSIONER RENDAHL: It appears to
3 be the one received on November 22nd, 2023, and the
4 intent was to have current tariffs. Did you submit those
5 as an exhibit through one of the witnesses? It's usually
6 the filing that the --

7 MS. BARNETT: Right. I don't know if
8 they weren't appended as a separate exhibit I think we
9 can reference them anyway through like a brief if we need
10 to just because they are -- they are currently on -- in
11 effect, so I don't think we need to -- I don't think it's
12 necessary to list them as a separate exhibit just to
13 reference them that they exist.

14 JUDGE BONFRISCO: And basically I
15 grabbed that from your original proposed exhibit list, so
16 part of why that's included in the final exhibit list was
17 just to reflect that because that was -- that was in the
18 exhibit list you submitted at the time of filing.

19 MS. BARNETT: I didn't intend to link
20 it to anything. I just like listed what -- the tariff,
21 the general tariff, but if that's the only one in the
22 record that's one I intended.

23 JUDGE BONFRISCO: That is the only one
24 in the record, so if PSE intends anything additional like
25 Commissioner Rendahl said you would just want to file

1 that.

2 MS. BARNETT: Thank you. And one

3 other thing. I think that Exhibit RLE-7X was listed as

4 public but I believe that's a confidential exhibit, so I

5 think maybe it should be RLE-7CX; is that correct?

6 JUDGE BONFRISCO: You are correct. I

7 believe there are -- because we have the RLE -- the 6X,

8 and I believe now that you point that out, it would also

9 be the RLE-8X because those are both Public Counsel's

10 responses to the data request. Is that what you are

11 cross-referencing?

12 MS. BARNETT: I believe it's 7X in

13 particular is confidential. I'm not sure. I don't have

14 all the exhibits open in front of me. The one that stuck

15 out to me was RLE-7 is a confidential document.

16 JUDGE BONFRISCO: Okay. We will make

17 a note of that and make sure that is updated accordingly

18 in the record.

19 MS. BARNETT: Thank you.

20 CHAIR DANNER: Sorry, just in regard

21 to 7 or also 8?

22 JUDGE BONFRISCO: I guess I would want

23 to clarify that with JEA because those are Public

24 Counsel's responses to JEA's data request so I believe

25 those would also be marked confidential, Mr. O'Neill and

1 exhibit list so 6 and 8 are the data request responses,

2 but 7 is the testimony, right?

3 JUDGE BONFRISCO: So just to clarify,

4 6X, 8X, and 9X are all data requests, and 7X is the

5 testimony of Mr.

6 Earle, so you are correct. I think Mr. Robinson was

7 addressing, just to clarify --

8 MR. O'NEILL: I thought you were

9 talking about the data requests. His testimony is --

10 MS. BARNETT: That was 7. That's the

11 only one I think is wrong.

12 JUDGE BONFRISCO: Just to clarify for

13 the record, we will correct that to reflect RLE-7XC and

14 the other cross exhibits will remain labeled as is.

15 MS. BARNETT: Thank you.

16 JUDGE BONFRISCO: With that, the next

17 thing I want to touch on is if we need to go into a

18 closed proceeding at all today because we are going to be

19 addressing any confidential information, I would need

20 each of the counsel to indicate to me anybody who is

21 present that hasn't signed a confidentiality agreement so

22 that we can make sure they are excluded from the room.

23 And let's see, from what I can see on the record it

24 appears that, Ms. Barnett, I did receive your filing on

25 that confidentiality agreement, so thank you for that.

1 Ms. Gravotta if you could address that.

2 MS. GRAVOTTA: So my understanding is

3 that Public Counsel's response to data questions are not

4 confidential. They don't contain confidential

5 information.

6 JUDGE BONFRISCO: Public Counsel, what

7 is your view?

8 MR. O'NEILL: I am pulling it up right

9 now.

10 JUDGE BONFRISCO: Thank you for taking

11 that up, Ms. Barnett, for PSE.

12 MR. O'NEILL: I'm not seeing anything

13 designated as confidential. I'm not seeing that

14 designated them as confidential.

15 MS. BARNETT: RLE-7X, should be -- as

16 I understand it's the testimony of Dr. Earle.

17 MR. O'NEILL: The data request

18 referenced in his testimony that's where the C comes

19 from, but they are themselves, the answers are not

20 confidential. And I don't think we designated them as

21 confidential either.

22 JUDGE BONFRISCO: And that's correct.

23 When they submitted the exhibits they were submitted as

24 nonconfidential which is why it's reflected this way.

25 MS. BARNETT: I'm just looking at the

1 And I do have all the confidentiality agreements for

2 counsel and their respective staff, but if there's

3 anybody else present just alert me at that time so we can

4 plan accordingly.

5 I will also provide a copy of the exhibit list to

6 the court reporter, that final corrected copy so she has

7 that.

8 And the next thing I want to address, is there any

9 objections to PSE's motion to file the revised rebuttal

10 testimony of Jamie L. Martin, and that's marked as

11 Exhibit JLM-1CTR?

12 MR. CALLAGHAN: No objection from

13 Commission Staff, Your Honor.

14 MR. O'NEILL: No objection from Public

15 Counsel.

16 JUDGE BONFRISCO: And JEA?

17 MS. GRAVOTTA: No objection from JEA.

18 JUDGE BONFRISCO: Hearing none then i

19 will enter that revised testimony into the record. And

20 are there any other outstanding issues before we move

21 into opening statements?

22 Okay. As I indicated, I am going to allow each

23 party the opportunity to provide a ten-minute opening

24 statement, so first I would like to start with PSE, Ms.

25 Barnett.

1 MS. BARNETT: Thank you, Judge, and
 2 good morning, Commissioners.
 3 Today Puget Sound Energy presents evidence to
 4 support its Climate Commitment Act risk-sharing
 5 mechanism, that PSE is not in favor of a Climate
 6 Commitment Act sharing mechanism. PSE submitted one
 7 because the Commission ordered it to do so.
 8 Risk sharing mechanisms can be effective tools to
 9 incentivize the utility to limit costs that are within
 10 its control, such as power costs. But as explained by
 11 PSE, Senior Vice President of External Affairs, Matt
 12 Steuerwalt, who was integral in the design and passage of
 13 the legislation, the Climate Commitment Act is not like a
 14 power cost mechanism. It is a powerful legislative
 15 mandate to reduce greenhouse gases, and it can carry
 16 significant costs.
 17 It requires PSE and other covered entities to buy
 18 compliance instruments in a market that PSE cannot
 19 control. The Climate Commitment Act was modeled on
 20 California's cap-in-trade program, which does not include
 21 a risk-sharing mechanism.
 22 When Washington legislators passed the Climate
 23 Commitment Act they did not even consider a risk-sharing
 24 mechanism. A risk-sharing mechanism is not appropriate
 25 when the utility cannot control the risks. This violates

1 Schedule 111 can reduce risks by allowing costs to be
 2 tracked and recovered accurately without subjecting the
 3 utility to volatility that can occur when it sometimes
 4 over earns and sometimes under earns.
 5 A utility that tracks and recovers costs accurately
 6 through a tracker is less risky and more attractive to
 7 investors than a utility whose earnings rise and fall as
 8 costs are incurred and then recovered later following a
 9 rate case.
 10 PSE's Senior Vice President and Chief Financial
 11 Officer, Jamie Martin is here, and has explained in
 12 testimony how reducing volatility, reduces capital costs
 13 for PSE specifically. It protects PSE's cash flow,
 14 earnings, and return on equity. Reducing capital costs
 15 benefits all customers.
 16 The Schedule 111 contains additional protections for
 17 low income, highly impacted, and vulnerable communities.
 18 Matt Steuerwalt discusses this in his rebuttal testimony.
 19 The tracker includes equity considerations, such as seven
 20 million dollars in 2024 for targeted decarbonization
 21 project to specifically benefit low income and vulnerable
 22 customers.
 23 The Commission should continue to allow PSE to
 24 recover Climate Commitment Act costs through Schedule 111
 25 without imposing a risk-sharing mechanism, but if the

1 the regulatory principle of risk and reward.
 2 PSE can and will encourage customers to reduce
 3 greenhouse gas emissions, but PSE is obligated to serve
 4 customers and provide as much natural gas as they demand.
 5 PSE cannot force a customer to conserve, reduce
 6 emissions, or switch from natural gas to electricity.
 7 Imposing a risk-sharing mechanism on PSE that
 8 evaluates performance based on the emissions of its
 9 natural gas customers means PSE could be financially
 10 penalized for doing exactly what it is obligated to do.
 11 Punishing a utility for fulfilling its duty to serve not
 12 only violates the regulatory compact, but imposing a
 13 risk-sharing mechanism deviates from the longstanding
 14 regulatory principle behind it.
 15 Utilities should be able to recover costs necessary
 16 to meet customer loads. PSE currently recovers Climate
 17 Commitment Act costs through a tracker executed through
 18 PSE's natural gas tariff Schedule 111. It is based on
 19 forecasted compliance costs and is revised and trued up
 20 annually. It is an adjustment mechanism, the sort of
 21 which has been used by utilities and this Commission for
 22 years to recover discreet costs, flatten volatility, and
 23 reduce risks.
 24 As explained by Todd Shipman, an expert in utility
 25 credit rating and capital markets, trackers such as PSE's

1 Commission does impose a risk-sharing mechanism, then PSE
 2 would accept the mechanism described by PSE witness Chris
 3 Michelson. PSE's risk-sharing mechanism is largely
 4 approved by Staff, but it contains a more reasonable and
 5 measured financial earnings test than either Staff's or
 6 the Joint Environmental Advocates proposal.
 7 PSE's risk-sharing mechanism contains fewer
 8 operational challenges than Staff's and it is supported
 9 by extensive analyses, both financial and scientific.
 10 Both of the alternative risk sharing mechanisms in
 11 this case contain flaws in their development and
 12 implementation. They include arbitrary caps and
 13 especially in the Joint Environmental Advocates' case
 14 could result in extreme reductions in PSE's earnings.
 15 In summary, PSE's Schedule 111 should continue
 16 without a risk-sharing mechanism, but if one is imposed
 17 then the Commission should approve PSE's mechanism
 18 because it is the only one that has been thoroughly
 19 analyzed, is well thought out, and can be sensibly
 20 implemented.
 21 Thank you for your attention today, and we look
 22 forward to your questions.
 23 JUDGE BONFRISCO: Thank you, Ms.
 24 Barnett. I would like to turn to Staff's opening
 25 statement. Please proceed, Mr. Callaghan.

1 MR. CALLAGHAN: Thank you, Your Honor.
 2 Good morning, Your Honor, and good morning,
 3 Commissioners.
 4 Over the last few years within the Commission's
 5 community there's been a growing discussion about the
 6 prevalence of tracking mechanisms. It's safe to say that
 7 somewhere the pendulum may have swung too far in one
 8 direction, or at the very least that we should all
 9 reexamine whether these mechanisms are properly balancing
 10 the interests of all parties.
 11 The case before the Commission today brings that
 12 issue directly into focus. With that background in mind,
 13 Staff proposes a framework for evaluating proposed
 14 tracking mechanisms that hopes the Commission will adopt
 15 in this case.
 16 Now that framework is not a deviation from past
 17 Commission decisions. Staff isn't asking the Commission
 18 to consider a policy shift today. Staff's proposal just
 19 makes explicit the logic that the Commission has
 20 implicitly used in prior cases.
 21 The framework described in Mr. McGuire's testimony
 22 is simply how Staff believes the Commission currently
 23 applies the public interest standard when it evaluates
 24 proposed tracking mechanisms.
 25 Staff believes that now is the time for the

1 Commission stated, quote, We recognize, however, that the
 2 proposed tariff inappropriately places all the risks
 3 associated with CCA's compliance through allowances on
 4 PSE's natural gas customers, unquote.
 5 Next I would like to clarify Staff's primary
 6 recommendation because based on the rebuttal and cross
 7 answering testimony it appears that we have not
 8 communicated it clearly.
 9 Staff's primary recommendation is not that the
 10 Commission should decide today whether Schedule 111
 11 should continue at the end of the company's next GRC
 12 filing. Our recommendation is that the Commission order
 13 PSE to include these costs in base rates in the company's
 14 initial filing, but the company in that proceeding could,
 15 of course, still make its case that Schedule 111 should
 16 continue.
 17 In other words, Staff is hoping that in this case
 18 the Commission adopts the framework that Staff lays out
 19 in Mr. McGuire's testimony, and if the Commission does,
 20 Staff believes PSE should have the opportunity to explain
 21 how Schedule 111 meets that standard in it's next GRC.
 22 Most of the criticism from the other parties is
 23 actually premature on this point because Staff isn't
 24 arguing that these costs should be included in base
 25 rates, Staff's argument is that costs being in base rates

1 Commission to make this standard explicit so that going
 2 forward all parties have a clear understanding of how the
 3 Commission evaluates proposed trackers and any related
 4 risk or cost sharing mechanisms.
 5 Parties have argued that it would be inappropriate
 6 for the Commission to adopt that framework in this case,
 7 but that simply isn't true. It is black letter law that
 8 an agency can vet policy through adjudication and the
 9 Commission has done so many times throughout its history.
 10 Again, Staff doesn't see its recommendation as a
 11 policy shift, but even if it were adopting a policy shift
 12 then any adjudication would be completely appropriate.
 13 Now I am not going to go through Staff's entire
 14 recommendation, but one thing I do want to emphasize
 15 today is that the premise of Staff's recommendation is a
 16 recollection that approving a schism passthrough tracking
 17 mechanism shifts risk from the company onto customers.
 18 Everything else in Staff's proposed standard is just a
 19 logical extension of that key recognition.
 20 And, again, that core insight is not anything new.
 21 It's something that the Commission has already implicitly
 22 recognized in past cases. And the Commission, in fact,
 23 explicitly cited this concern as the reason it set the
 24 risk-sharing mechanism issue for adjudication.
 25 In Order 1 of the previous docket, UG-230470, the

1 is the default assumption, and that absent the
 2 demonstration that a tracking mechanism is in the public
 3 interest that is how they should be treated.
 4 Finally, I want to address PSE's primary
 5 recommendation. PSE's primary recommendation is to
 6 approve Schedule 111 as a pure passthrough to its
 7 customers with no risk-sharing mechanism. This is even
 8 on rebuttal PSE recognizes that the company's choices do
 9 impact the overall cost of base per CCA allowances.
 10 PSE even implies that the Commission may lack the
 11 authority to order a risk-sharing mechanism in this case.
 12 Staff will address that specific argument more in it's
 13 post hearing brief, but spoiler alert, that's incorrect.
 14 The Commission absolutely has the authority to order a
 15 risk-sharing mechanism in this case.
 16 And as I mentioned earlier, the Commission has been
 17 clear since at least July of last year that it believes a
 18 risk-sharing mechanism of some kind is needed. That's
 19 the whole reason we are having this adjudication.
 20 PSE has had a good amount of time to reconsider its
 21 primary recommendation and the company has chose to stay
 22 the course. Now PSE is free to make whatever argument it
 23 wants, but I think the Commission should be clear in the
 24 final order that the stance PSE has consistently taken on
 25 this issue over the last year is out of line with the

1 Commission's transition to performance based rates. The
 2 order in this case should act as a reminder that tracking
 3 mechanisms are a privilege, not a right, and the
 4 Commission can and will ensure that these mechanisms, if
 5 approved, are creating the proper incentives for
 6 utilities. Thank you.

7 JUDGE BONFRISCO: Thank you, Mr.
 8 Callaghan. Public Counsel, if you could proceed with
 9 your opening statement.

10 MR. O'NEILL: Thank you, Your Honor.
 11 When the legislature passed the Climate Commitment Act it
 12 included in its findings sections, which is now codified
 13 as 70A.65.005(2), that the legislature with the Act --
 14 the legislature updated the State's greenhouse gas
 15 emissions limits that are set to be achieved by 2030,
 16 2040, and 2050, based on current science and emission
 17 trends to support local and global efforts to avoid the
 18 most significant impacts from climate change.

19 Meeting these limits will require a coordinated,
 20 comprehensive, and multi sectorial implementation of
 21 policies, programs, and laws as other enacted policies
 22 are insufficient to meet the limits.

23 The legislature, through this statutory language,
 24 clearly indicated that the CCA was intended to be a part
 25 of a suite of regulatory and statutory efforts to address

1 and thank you Commissioners. The legislature passed the
 2 Climate Commitment Act or CCA to make sure the State
 3 plays its role in addressing climate crisis. The CCA
 4 sets the state's emissions cap and increases over time
 5 and uses financial incentives for regulated entities,
 6 including gas utilities, to reduce their emissions.

7 Despite this, PSE's 2023 IRP indicates that it does
 8 not plan to immediately reduce emissions. Its planned
 9 carbon emission trajectory shows that PSE's natural gas
 10 operations will only account for 82 percent of Washington
 11 state's total carbon emission target by 2050.

12 The company will primary seek to comply with the CCA
 13 by buying emissions allowances until at least mid
 14 century. PSE 2023 IRP reproduced in Exhibit 5 of Mr.
 15 Gehrke's cross answering testimony shows that PSE's net
 16 allowance purchases will more than double by 2030 and
 17 continue to remain through 2050.

18 PSE wants to treat the cost of those purchases as a
 19 passthrough directly to customers, even though these
 20 ongoing purchases are the result of the company's choice
 21 not to reduce emissions. PSE says that customers are
 22 ultimately responsible for their emissions, but that
 23 ignores the fact that it is the regulated entity, that it
 24 has an arsenal of resources to meaningfully work towards
 25 reducing emissions.

1 climate change.

2 In the context of this proceeding, this means that
 3 the Utility Commission has its full panoply of regulatory
 4 tools, and it should direct them to accomplish the goals
 5 the legislature set out, which is to reduce greenhouse
 6 gas emissions to meet the limits set in various statutes
 7 that have passed since.

8 Puget Sound Energy is incorrect, and in the
 9 testimony you will hear they do have control over how
 10 they purchase allowances, which allowances they purchase,
 11 when they purchase them, on what market they purchase,
 12 and how they plan for purchasing them. That is what the
 13 incentive mechanism must be aimed at, incentivizing Puget
 14 Sound Energy to be prudent, and making it pure
 15 passthrough costs removes that incentive and is against
 16 the public interest. Thank you.

17 JUDGE BONFRISCO: Thank you. I would
 18 like to turn now to Joint Environmental Advocates, and
 19 Ms. Gravotta, if you could just pronounce your name for
 20 the record.

21 MS. GRAVOTTA: Noelia Gravotta. You
 22 were saying it perfectly.

23 JUDGE BONFRISCO: Perfect. Thank you.
 24 Please continue.

25 MS. GRAVOTTA: Thank you, Your Honor,

1 It is a dual fuel utility with multimillion dollar
 2 operating budget, and capable technical staff and
 3 strategists, and it can add or remove generation and
 4 transmission infrastructure, and construction rates and
 5 customer incentive to promote or disperse the adoption of
 6 efficiency and electrification measures.

7 Customers do not have even a remotely similar
 8 ability to modify their energy system to reduce
 9 emissions. In the order to PSE in docket UG-230470 the
 10 Commission stated, quote, The CCA is meant to serve as a
 11 price signal to both utilities and their customers
 12 encouraging both to modify their behavior to reduce
 13 carbon emissions. Their mechanism should share risks
 14 such that all parties are encouraged to reduce their
 15 emissions and in turn the costs required for CCA
 16 compliance, unquote.

17 JEA's proposed risk sharing mechanism does just
 18 that. The mechanism disincentivizes the purchase of
 19 allowances priced near or at the price field and is the
 20 highest cost of CAA compliance. This forces PSE to
 21 consider alternate pathways and to consider not just
 22 short term compliance costs, but costs that accrue over
 23 the median and long term if it chooses to continue
 24 growing its emissions as opposed to decarbonizing its
 25 operations, as well as the company can be incentivized

1 to, quote, modify its behavior to reduce carbon
 2 emissions, unquote, by investing in the future of its
 3 business and the wellbeing of its customers in a climate
 4 change world.
 5 So what does the evidence in the docket show so far?
 6 I want to highlight three key points. First, it's clear
 7 that the Commission is correct that PSE must experience
 8 price signals from the CCA to encourage it to reduce
 9 emissions. JEA's witness Ms. McCloy provided testimony
 10 about the intent and structure of the CCA. To further
 11 support the fact that PSE must partake in CCA compliance
 12 risks and cannot treat these costs as a passthrough. PSE
 13 continues to resist the Commission's order by insisting
 14 that it should bear no risk of compliance under the CCA.
 15 Second, it's evident that both PSE and Staff's
 16 risk-sharing mechanisms fail to achieve the objectives
 17 put forth in the Commission's order. PSE's witness Mr.
 18 Mickelson laid out a proposal that establishes sharing
 19 bands, wherein PSE would share ten percent in the first
 20 band, twenty percent in the second band, but notably only
 21 where the company earned about its authorized rates of
 22 return.
 23 PSE's mechanism appears designed to passthrough all
 24 costs as Staff's witness Mr. McGuire noted. Our witness,
 25 Mr. Gehrke, explained why PSE's mechanism is unlikely to

1 We proposed relatively conservative model that seeks
 2 to balance customer interest with company concerns about
 3 investments and financial performance. PSE can reduce
 4 its risk exposure by decarbonizing its system and not
 5 relying on additional purchases as its central compliance
 6 method in the median and long term.
 7 Our model has been critiqued by Public Counsel's
 8 witness as insufficient and incentivizes PSE. We
 9 certainly have no objection to modifying our proposal to
 10 be a strong incentive to decarbonize.
 11 In the interest of helping the Commission find
 12 points of agreement between parties focused on consumer
 13 advocacy and environmental advocacy, we agree that our
 14 model can be modified to incorporate some of Public
 15 Counsel's concerns. One option is removing the earnings
 16 test. Another is to adjust the statistical analysis to
 17 better represent the distribution of allowance prices.
 18 That said, there are key points of difference
 19 between our model and Public Counsel's proposal. As you
 20 will have an opportunity to hear today, Public Counsel's
 21 approach is optimized to push PSE towards a lower cost
 22 option in the short term. We agree that this is one
 23 important consideration, but it should not be the primary
 24 driver. Our proposal focuses on longer term abatement
 25 risks so that PSE is incentivized to reduce emissions to

1 be triggered, including the use of average and local
 2 compliance price compared to prices on the secondary
 3 market, PSE's regulatory expertise, and PSE's ability to
 4 access new cost allowances and price ceiling reserve
 5 options.
 6 PSE's witnesses did not refute that PSE's model is
 7 unlikely to result in risk sharing but rather focused on
 8 why the company should not bear risks.
 9 Staff witness Mr. McConnell proposed a risk-sharing
 10 mechanism that adopts PSE sharing bands but modifies the
 11 earning test to become a sharing cap.
 12 Mr. Gehrke critiqued his focus on various risks.
 13 And also the Public Counsel's witness Mr. Earle explained
 14 how Staff's proposal would virtually never be triggered,
 15 making it a risk-sharing mechanism in name only.
 16 Given the evidence in front of this Commission, it
 17 is clear that PSE and Staff approaches do not achieve the
 18 goals set out in this docket.
 19 And now to my third point. The Commission has in
 20 front of it a workable risk-sharing mechanism that does
 21 set out to meet the goals of this docket and of the CCA,
 22 and it is our proposal. Mr. Gehrke has outlined a
 23 risk-sharing proposal that focuses on dissuading high
 24 cost allowance purchases and drives PSE to consider
 25 alternatives.

1 meet the goals of the CCA. We think that investing in
 2 decarbonization is a more prudent, and ultimately more
 3 equitable use of PSE funds than using customer money for
 4 the next 30 years. It's important to start making
 5 decisions and begin applying incentives to PSE. Waiting
 6 for further development in this policy docket simply
 7 delays what is sorely needed, a price signal from PSE to
 8 act rather than to offload responsibility onto customers.
 9 In summary, the evidence before the Commission
 10 highlights the need for clear direction to PSE. You have
 11 already told them that they share the responsibility for
 12 reducing climate forcing emissions. It doesn't seem like
 13 they heard that message. We think it's time for you to
 14 impose clear direction on their responsibilities under
 15 the CCA, and we urge you to give our proposal careful
 16 consideration. Thank you, very much.
 17 JUDGE BONFRISCO: Thank you, Ms.
 18 Gravotta. I just want to check, does AWEC have -- I
 19 don't believe they are presenting any testimony, correct?
 20 MS. MOSER: That is correct, Your
 21 Honor.
 22 JUDGE BONFRISCO: Ms. Barnett, it's my
 23 understanding PSE doesn't plan to conduct any cross; is
 24 that correct?
 25 MS. BARNETT: That's correct.

1 JUDGE BONFRISCO: Okay. And
 2 additionally it's my understanding that Public Counsel
 3 and Joint Environmental Advocates has also not reserved
 4 any time for cross of PSE witnesses; is this correct?

5 MR. O'NEILL: I had reserved fifteen
 6 minutes for Mr. Steuerwalt.

7 JUDGE BONFRISCO: Okay. Let me check
 8 my records. Yes, I apologize. That's correct. I see
 9 that. Fifteen minutes, I have that. My apologies.

10 So let's begin -- I think just for -- let's begin
 11 with Staff cross-examination of PSE's witnesses and then
 12 Staff, I will ask you to call in each PSE witness and
 13 introduce them and then I will go ahead and swear them in
 14 and then I can have you proceed with your examination.

15 MR. CALLAGHAN: Thank you, Your Honor.
 16 Commission Staff calls Matt Steuerwalt.

17 JUDGE BONFRISCO: And is Mr.
 18 Steuerwalt present virtually?

19 THE WITNESS: No, I'm in person.

20 JUDGE BONFRISCO: Perfect.

21 THE WITNESS: It's been a little while
 22 since I did this. Is this where I sit?

23 JUDGE BONFRISCO: Yes. Mr.
 24 Steuerwalt, if you could turn on the push button, that
 25 should light it up.

1 THE WITNESS: I do.

2 JUDGE BONFRISCO: Okay. Great. The
 3 witness is yours, Mr. Callaghan.

4 MR. CALLAGHAN: Thank you, Your Honor.

5 CROSS-EXAMINATION

6 BY MR. CALLAGHAN:

7 **Q Good morning, Mr. Steuerwalt. Do you have copies of your**
 8 **initial testimony and rebuttal testimony with you?**

9 A I do. Thank you for asking.

10 **Q Could you please turn to rebuttal testimony on Page 19**
 11 **and let me know when you are there?**

12 A I am there.

13 **Q Here you state that PSE's primary recommendation is still**
 14 **to approve Schedule 11 without a risk-sharing mechanism;**
 15 **is that correct? Lines 17 to 18.**

16 A This testimony says PSE recommends the Commission decline
 17 to order a risk-sharing mechanism in the proceeding.

18 **Q Is that a yes?**

19 A Yes.

20 **Q All right. And one of your arguments is that the CCA**
 21 **does not require the Commission to approve a risk-sharing**
 22 **mechanism; is that accurate?**

23 A That is accurate.

24 **Q But the CCA does not require the Commission to approve**
 25

1 And then I will just ask that you state your name
 2 and just speak closely into the microphone so we can have
 3 a clear record. So I am going to go ahead and swear you
 4 in?

5 THE WITNESS: I sure can, but I cannot
 6 get a light on the push button.

7 JUDGE BONFRISCO: Oh, there's no
 8 light? Thank you.

9 UNIDENTIFIED SPEAKER: Would it be
 10 possible to have a camera on the witness so we can see?

11 JUDGE BONFRISCO: I don't believe we
 12 have that technological setup. He would have to have his
 13 laptop on and he does not have that.

14 MS. BARNETT: Would you like me to --

15 JUDGE BONFRISCO: Do you have a
 16 laptop, Ms. Barnett?

17 MS. BARNETT: Yes.

18 JUDGE BONFRISCO: Thank you for
 19 helping out. We can hear you. Thank you. It looks like
 20 we can see you. It looks good.

21
 22 MATT STEUERWALT, witness herein, being
 23 first duly sworn on oath,
 24 was examined and testified
 25 as follows:

1 **any kind of tracking or adjustment mechanism related to**
 2 **CCA allowance costs either, does it?**

3 A No.

4 **Q Could you turn to your initial testimony at Page 11 and**
 5 **let me know when you are there.**

6 A The initial, not the rebuttal?

7 **Q Yes.**

8 A Okay. I am there.

9 **Q Here you say that PSE is concerned with the legality of**
 10 **developing a risk-sharing mechanism for the CCA, correct?**

11 A I actually am -- we are concerned with the legality, the
 12 ability, and the time to develop a sharing mechanism.

13 **Q Okay. So it does that PSE is concerned with the legality**
 14 **of developing a risk-sharing mechanism?**

15 A Yep.

16 **Q Is it PSE's position that it would be beyond the**
 17 **Commission's authority to order a risk-sharing mechanism**
 18 **for Schedule 111?**

19 A It is our position that nothing in the CCA requires the
 20 Commission to order a risk-sharing mechanism or
 21 authorizes the Commission to order a risk-sharing
 22 mechanism. I believe the Commission has plenty of its
 23 own authority to set rates in some fashion.

24 **Q Okay. Does that include setting -- ordering a risk-**
 25 **sharing mechanism for Schedule 111?**

1 A I believe the Commission could order that. I don't
 2 believe the Commission should have ordered that.
 3 **Q Okay. And you would agree that the Commission has the**
 4 **authority to order risk-sharing mechanisms related to**
 5 **other kinds of costs, correct?**
 6 A I would.
 7 **Q Okay. Are you familiar with PSE's power cost adjustment**
 8 **mechanism on the electric side?**
 9 A I have a somewhat limited familiarity with it. I can
 10 talk to some parts of it, but there are other people that
 11 can talk to it in much better detail.
 12 **Q Are you aware whether or not that mechanism has sharing?**
 13 A That mechanism does indeed have sharing.
 14 **Q Okay. Moving on. Another argument that PSE makes in**
 15 **favor of its primary recommendation is that PSE is**
 16 **required to comply with the CCA and so these costs are**
 17 **necessary to serve customers, correct?**
 18 A I'm thinking about your question.
 19 PSE is indeed the compliance entity for natural gas,
 20 natural gas emissions, most of the natural gas greenhouse
 21 gas emissions, although not all of them under the CCA.
 22 And what was the second part? I'm sorry.
 23 **Q So one argument that PSE makes is that it's required to**
 24 **comply with the CCA and so these costs are necessary to**
 25 **serve customers, and therefore PSE should just have a**

1 And, Mr. Callaghan, can you please call PSE's next
 2 witness that you plan to call, and I will swear them in.
 3 MR. CALLAGHAN: Your Honor, I believe
 4 that Public Counsel has reserved time for
 5 cross-examination of Mr. Steuerwalt.
 6 JUDGE BONFRISCO: Yes, my apologies.
 7 MS. BARNETT: Can I ask a redirect,
 8 please?
 9 JUDGE BONFRISCO: Yes, my apologies.
 10 Thank you. Actually, let me allow Public Counsel to
 11 proceed with his arguments and then we will do a
 12 redirect. We will have a redirect after Public Counsel
 13 crosses the witness.
 14 CROSS-EXAMINATION
 15 BY MR. O'NEILL:
 16 **Q Good morning, Mr. Steuerwalt.**
 17 A Good morning.
 18 **Q In your rebuttal testimony you reference the drafting**
 19 **process for House Bill 1589, do you recall that**
 20 **testimony?**
 21 A If you will give me a moment I will look. Do you have a
 22 page and line reference for me?
 23 **Q It would be useful if I did, but I did not write it down.**
 24 A I think I have it on Page 3 of the rebuttal. Is that the
 25 reference that you are looking for?

1 **pure passthrough mechanism.**
 2 A These are -- when we incur costs to comply with a state
 3 obligation such as the CCA, those costs should be passed
 4 on the customers.
 5 **Q Does PSE have a legal obligation to serve its retail**
 6 **customers in its natural gas service territory?**
 7 A Yes.
 8 **Q Okay. So every cost that the company incurs in order to**
 9 **serve customers could be characterized as a compliance**
 10 **cost, couldn't it?**
 11 A I think the -- well, I think that the record would show
 12 that parties would assume that not every cost is a
 13 compliance cost. The parties might well argue that some
 14 of the things we incur costs on were not to the benefit
 15 of customers.
 16 **Q But if PSE has an obligation to serve, isn't every cost**
 17 **it incurs in order to complete that service a compliance**
 18 **cost with its -- related to its obligation to serve?**
 19 A I don't know how to answer your question better than I
 20 did the first time. I can -- because the hypothetical is
 21 so broad for me, I don't know that I have a better answer
 22 for you.
 23 **Q Okay.**
 24 MR. CALLAGHAN: No further questions.
 25 JUDGE BONFRISCO: Okay. Thank you.

1 **Q It is.**
 2 A Okay.
 3 **Q You heard my opening statement; is that correct?**
 4 A I was in the room but was actually talking with one of my
 5 colleagues about a different matter.
 6 **Q Would you agree with me that the legislature intended the**
 7 **CCA to be part of a suite of legislative enactments to**
 8 **combat climate change?**
 9 A Yes.
 10 **Q And the House Bill 1589, when was that passed?**
 11 A That was enacted this year.
 12 **Q In the spring, correct?**
 13 A March or April.
 14 **Q And when did the Commission order PSE to propose a**
 15 **risk-sharing mechanism?**
 16 A I don't know off the top of my head.
 17 **Q It was in November of last year, correct?**
 18 A I don't know off the top of my head.
 19 **Q Okay. Are you aware of the statutory construction maxim**
 20 **that the courts presume legislature is aware of actions**
 21 **of other regulatory entities such as the Commission?**
 22 A No.
 23 **Q In your -- in House Bill 1589, I am going to go ahead and**
 24 **pull this up so we can all see it, and I will attempt to**
 25 **share my screen.**

1 A You are testing my eyesight.
 2 **Q I will see if I can adjust that as well. This is the**
 3 **House Bill 1589 as it was passed by the legislature, and**
 4 **you can see that there. If you go to the first section**
 5 **of that bill, so Section 4, in Subsection 4 the**
 6 **legislature found that as Washington transitions to a**
 7 **hundred percent clean electricity, and as the State**
 8 **implements the Washington Climate Commitment Act,**
 9 **switching from fossil fuel based heating equipment and**
 10 **other fossil fuel based appliances, high efficiency non**
 11 **emitting equipment, will reduce climate impact and fuel**
 12 **price prices for consumers in the long term. This new**
 13 **paradigm requires a thoughtful transition to decarbonize**
 14 **the energy system to ensure that all customers benefit**
 15 **from the transitions, that customers are protected, are**
 16 **not subject to sudden price shocks, and continue to**
 17 **receive needed energy services.**
 18 **Did I read that correctly?**
 19 A That's how I read it.
 20 **Q The last sentence says this transition will require**
 21 **careful and integrated planning by and between utilities**
 22 **and the Commission and customers as well as new**
 23 **regulatory tools.**
 24 **Did I read that correctly?**
 25 A I agree.

1 the company to have an education program and removes the
 2 company's energy efficiency programs for residential gas
 3 customers at the end of this year or next. I can't
 4 recall, and then sunsets the company's commercial gas
 5 conservation program to a later date. I believe this is
 6 directly tied to that requirement.
 7 **Q So you would read it with that limitation?**
 8 A I would.
 9 **Q It goes on to say in that same section, programs to**
 10 **accelerate the adoption of efficient, non emitting**
 11 **appliances have the potential to allow large combination**
 12 **utilities to optimize to use energy infrastructure,**
 13 **improve the management of energy loads, better manage the**
 14 **integration of variable energy resources, reduce**
 15 **greenhouse gas emissions from the building sector, to**
 16 **mitigate the environmental impacts of utility operations**
 17 **and power purchases, and improve the health outcome for**
 18 **occupants.**
 19 **Did I read that correctly?**
 20 A You did.
 21 **Q It's true that PSE is the entity that has the ability to**
 22 **optimize the use of energy infrastructure, correct?**
 23 A I think it's true that both the customers and the utility
 24 have the ability to optimize the use of energy
 25 infrastructure. I believe, in fact, that there are a

1 **Q So in 1589 that was passed, you would agree with me that**
 2 **the legislature has identified as a public policy**
 3 **minimizing price shocks and transitioning to a new**
 4 **fossil -- non fossil fuel based economy -- or energy**
 5 **system, would you agree with me?**
 6 A I would say they have a legislative intent to avoid
 7 sudden price shocks and to decarbonize the energy system,
 8 which I think is slightly different than your raising
 9 of -- I can't remember the exact words that you used.
 10 **Q That's fair. I will take what your testimony is as it**
 11 **is.**
 12 **I have highlighted the first part of Subsection 2,**
 13 **which is what I want to direct your attention to. The**
 14 **legislature found that as the State transitions to**
 15 **cleaner sources of energy large combination utilities are**
 16 **an important part of that in helping their customers make**
 17 **smart energy choices, including actively supporting the**
 18 **replacement of fossil fuel based space and watering**
 19 **equipment and other fossil fuel based equipment with high**
 20 **efficiency non emitting equipment.**
 21 **Do you agree with me that the utilities such as**
 22 **Puget Sound Energy are an important partner in helping**
 23 **customers make smart energy choices?**
 24 A I believe that when the legislature wrote this language
 25 they were referring to the section below that requires

1 number of growing programs on the energy efficiency side
 2 designed to have customers make smart energy choices.
 3 **Q You would characterize that as a shared ability between**
 4 **the customers and the utility?**
 5 A I would.
 6 **Q Would you characterize the utility as having a shared**
 7 **ability to improve the management of energy loads?**
 8 A Yes. Again, I think that's a place where new technology
 9 is providing customers the opportunity to participate in
 10 the management of loads, and for us to be able to try to
 11 call on those resources as we can.
 12 **Q Do you agree that it is the utility that has the ability**
 13 **to better manage the integration of variable renewable**
 14 **energy resources?**
 15 **That's not something that customers can do?**
 16 A Why would you say that?
 17 **Q I don't know. You tell me.**
 18 A I think that we will increasingly see customer
 19 participation at the scale of small customers and very
 20 large customers in the management of infrastructure
 21 designed to increase global demand and to meet the needs
 22 of the system as a whole. And we are developing programs
 23 and the Commission is approving those programs to do just
 24 that, those kind of things.
 25 **Q You would agree that the utility, at least, is a partner**

1 in that process?

2 A Oh, absolutely.

3 **Q The last sentence of the section is the legislative**
4 **clarity is important for utilities to offer programs and**
5 **services, including incentives in the decarbonization of**
6 **homes and buildings for their customers.**

7 **Did I read that correctly?**

8 A You did.

9 **Q You would agree with me that the legislature has clearly**
10 **stated a policy of encouraging decarbonization?**

11 A Yes.

12 **Q If the risk management mechanism in this case, the**
13 **Climate Commitment Act case that we are dealing with**
14 **would incentivize the company to better accomplish those**
15 **steps toward the goals, would you agree with me that that**
16 **is a good idea?**

17 A If the risk-sharing mechanism would incentivize us to
18 achieve those goals.

19 I would agree with that if I thought the
20 risk-sharing mechanism would indeed incentivize us to
21 achieve those goals, and to go back to your Section 4
22 stuff, to achieve the other public policy goals of the
23 Act, not all of which are decarbonation.

24 **Q One of the things that 1589 authorized the Commission to**
25 **do is gave it new regulatory tools. I'm not certain it's**

1 **Q Which I think is my point. You project that gas**
2 **customers are going to leave the system?**

3 A We see, as a result of other public policies, that the
4 addition of new gas customers has slowed considerably. I
5 believe there is evidence in the other proceedings about
6 the change in the loads on the gas system, which are
7 declining. And I don't know that I can predict the pace
8 and scale of those transitions, but they appear to be
9 underway.

10 **Q And the market in which you anticipate at whatever speed**
11 **it's ultimately going to be departure from customers**
12 **leaving gas assets, doesn't it make sense for the -- just**
13 **financial sense for the company to accelerate its**
14 **decarbonization efforts to shift consumers to**
15 **electricity, for example?**

16 COMMISSIONER RENDAHL: Please, Mr.
17 Steuerwalt, if you could speak more directly into the
18 microphone as folks online are having a hard time hearing
19 you.

20 THE WITNESS: I'm sorry, Commissioner
21 Rendahl. I will endeavor to be more clear. I'm still a
22 little foggy. You guys start early. And I have
23 completely lost the thread. Could we go back to the
24 question?

25 **Q (By Mr. O'Neill) Sure. I will see if I can reask the**

1 **new, but certainly identified them as eligible for Puget**
2 **Sound Energy, the only utility that actually qualifies**
3 **under the decarbonation bill. One of those is**
4 **accelerated depreciation of gas assets; is that correct?**

5 A I would agree with you that that is not a new regulatory
6 tool.

7 **Q But is it referenced in the statute?**

8 A It is in the statute.

9 **Q Explicitly?**

10 A Yes.

11 **Q As a tool that can be used for Puget Sound Energy?**

12 A Yes.

13 **Q Does Puget Sound Energy plan to utilize its -- that**
14 **statutory mechanism to ask for accelerated depreciation**
15 **of gas assets?**

16 A In a different proceeding that before this Commission we
17 have indeed asked to shorten the depreciation life on the
18 gas business.

19 **Q You would agree with me what that means in practical**
20 **terms is that rate payers are going to pay more money up**
21 **front for gas assets? They are going to pay faster?**

22 A I would suggest that what it means is that existing rate
23 payers will pay for the infrastructure they have before
24 many of them depart from the system leaving the remaining
25 rate payers to pay for the rest of the cost.

1 **question.**

2 **It's rational for a company in Puget Sound's space**
3 **to begin making steps toward decarbonization because you**
4 **are projecting the carbon market is going to shrink in**
5 **terms of customers using natural gas?**

6 A I think those are a number of different thoughts that I'm
7 not sure I would put together. Again, I don't know that
8 we have a projection for the long term about the pace and
9 scale of customer departure on the gas system.

10 I know that in the current rate case we have
11 projections about the high loads and some assumptions
12 about the growth or lack thereof in the system.

13 Your next phrase was is it a reasonable thing to do
14 to accelerate the departure of customers.

15 **Q I think I meant accelerate decarbonization efforts by the**
16 **company.**

17 A I would say there should be efforts to decarbonize at the
18 lowest reasonable cost for customers.

19 **Q Fair. And do you agree with me that if the company is**
20 **going to undertake those efforts that it should be**
21 **incentivized to achieve the least cost method to**
22 **accomplish that goal?**

23 A I don't think we are asking to be incentivized to
24 decarbonize. I think we are being required to do that.
25 And I don't think we perceive that we should be

1 incentivized. In fact, should the Commission decide to
 2 adopt our risk-sharing mechanism it does not include an
 3 incentive for the company. It's -- we don't think that's
 4 a necessary thing.
 5 **Q We should just trust you to get it right?**
 6 A No, I'm not saying that at all, sir. I'm saying we
 7 have -- the Commission has the regulatory authority using
 8 its existing mechanisms to examine whether we are making
 9 cost effective choices to comply with CCA for customers.
 10 **Q I would like to shift to one other topic before I let you**
 11 **go. If you turn to Page 15 of your testimony, the**
 12 **rebuttal testimony.**
 13 A Sure. Hang on one second. I am there.
 14 **Q And Lines 16 to 18 is where I want to focus your**
 15 **attention, if I could.**
 16 A I'm there.
 17 **Q I clicked on the button and it took me up to the top of**
 18 **the document and away from where I was going to ask the**
 19 **questions, so I apologize.**
 20 A I'm here all day.
 21 **Q So is everybody else.**
 22 **You say that PSE has structured its compliance,**
 23 **meaning the CCA compliance, accordingly, including**
 24 **eliminating low income burden and prioritizing investment**
 25 **of revenues in projects that address high energy burden**

1 **Q Sure. So let's assume there is a projected need in the**
 2 **community and your program is reaching a certain number**
 3 **of people, and you could calculate that as a percentage**
 4 **and then call that a penetration rate. In other words,**
 5 **your program reaches a certain percentage.**
 6 A Sure.
 7 **Q Do you know what PSE's penetration rate is?**
 8 A For what.
 9 **Q For reaching low income customers?**
 10 A I do not.
 11 **Q Would you agree with me that if you reach a mere fraction**
 12 **it's not fair to say that you have eliminated the low**
 13 **income burden?**
 14 A No, I would not.
 15 **Q You disagree with me?**
 16 A I would.
 17 MR. O'NEILL: Okay. That's all the
 18 questions I have. Thank you.
 19 JUDGE BONFRISCO: Thank you, Mr.
 20 Robinson O'Neill.
 21 Ms. Barnett, you can proceed with your redirect.
 22 MS. BARNETT: Thank you.
 23
 24 REDIRECT EXAMINATION
 25 BY MS. BARNETT:

1 in low income communities.
 2 Did I read that correctly?
 3 A Yes.
 4 **Q Do you know how many individuals in Puget Sound Energy's**
 5 **service territory that your third party data suggests**
 6 **qualify for one of your low income programs?**
 7 A I do not.
 8 **Q Would it surprise you that the number is 245,000,**
 9 **approximately?**
 10 A I don't have any context for even evaluating whether
 11 that's a big number or a small number.
 12 **Q Do you know how many individuals are currently enrolled**
 13 **in a discount program?**
 14 A I do not.
 15 **Q Are you aware there is another proceeding before the**
 16 **Commission in which the company is asking to reduce the**
 17 **number of individuals enrolled in the program from 70,000**
 18 **to -- well, to reduce by 53,000, so 17, are you aware of**
 19 **that?**
 20 A I'm aware there is another proceeding about who is
 21 eligible and has identified as being a low income
 22 customer, yes.
 23 **Q Have you ever heard of the concept of penetration rates?**
 24 A I think if you were to give me an example I could
 25 probably make my way through that.

1 **Q Mr. Steuerwalt, you heard counsel for Staff ask you about**
 2 **your legal concern of passing through -- of implementing**
 3 **a risk-sharing mechanism. When you expressed concern**
 4 **about the legality of imposing a risk-sharing mechanism,**
 5 **what are your concerns?**
 6 A I'm concerned -- the company is concerned, excuse me,
 7 that the CCA did not contemplate such a mechanism, and
 8 had it been contemplated the remainder of the bill might
 9 have looked different as well.
 10 **Q Counsel for Staff also asked you about some costs that I**
 11 **think -- I'm trying to paraphrase the question -- was**
 12 **based on your PSE general duty to serve are all costs**
 13 **passthrough to customers, and I apologize if I'm**
 14 **mischaracterizing the question.**
 15 **My question is, would you expect to pass through**
 16 **costs to customers that were not deemed prudent, were**
 17 **adjudicated imprudent, for example?**
 18 A No.
 19 **Q And my last question, counsel for Public Counsel asked**
 20 **you about customers' ability to share in both the load**
 21 **and their consumption of natural gas. If there is this**
 22 **sharing of -- increased sharing on the part of customers,**
 23 **why is it appropriate to pass through all the CCA costs**
 24 **rather than share the risks?**
 25 A The CCA is a different mechanism than requiring than us

1 to serve our customers for all of the natural gas that
 2 they demand. I don't think policy makers contemplated a
 3 universe in which the question of whether we were
 4 supposed to continue to serve customers was at issue. I
 5 think people thought you are going to keep serving
 6 customers. We are going to impose this compliance
 7 obligation on you as a way of not imposing a compliance
 8 obligation on 900,000 individual customers, right, and
 9 you are going to have to serve them with whatever
 10 resource they demand.

11 MS. BARNETT: I have no further
 12 redirect.

13 JUDGE BONFRISCO: Thank you, Ms.
 14 Barnett. I would like to turn back to Mr. Callaghan, if
 15 you could please call PSE's next witness and I will swear
 16 them in.

17 MR. CALLAGHAN: Thank you, Your Honor.
 18 Commission Staff calls Jason Kuzma.

19 JUDGE BONFRISCO: Oh, hold on one
 20 moment. Mr. Steuerwalt, you may be excused. Thank you.

21 THE WITNESS: Thank you.

22 JUDGE BONFRISCO: Mr. Callaghan, if
 23 you could call PSE's next witness.

24 MR. CALLAGHAN: Thank you, Your Honor.
 25 Commission Staff calls Jason Kuzma.

1 A That is looking at the long term issue with respect to
 2 the natural gas industry. As you noted earlier, PSE is
 3 expecting reductions in customers, also reductions in
 4 loads. PSE has, in HB-1589 a mechanism of an integrated
 5 system plan that will allow for Puget to put forth
 6 mechanisms that can facilitate decarbonization efforts on
 7 the -- for gas customers.

8 And the intent there is that we understand -- I know
 9 there was criticism from the Joint Environmental
 10 Advocates that Puget has an IRP that addressed 82 percent
 11 I believe is what they said of the total carbon emissions
 12 would be from Puget. Now that is based upon a rule that
 13 is an integrated resource plan that is, you know, adopted
 14 prior to a lot of the decarbonization efforts and
 15 reflects what the obligations were probably prior to
 16 that.

17 We recognize that there will be a decarbonization
 18 and Puget will have to put together programs for that and
 19 we can't just completely rely on compliance, although
 20 right now that is in many respects one of the few tools
 21 that we do have at this moment that's been approved.

22 **Q Thank you. So PSE recognizes that in the long run, as a**
 23 **practical matter, the company will need to take**
 24 **significant steps to reduce the emissions from its**
 25 **natural gas system in order to comply with the CCA,**

1 JUDGE BONFRISCO: Mr. Kuzma, if you
 2 could raise your right hand.

3 JASON KUZMA, witness herein, being
 4 first duly sworn on oath,
 5 was examined and testified
 6 as follows:
 7

8 THE WITNESS: Yes.

9 JUDGE BONFRISCO: Okay. Thank you.
 10 And you may proceed, Mr. Callaghan.

11 CROSS-EXAMINATION

12 BY MR. CALLAGHAN:

13 **Q Good morning, Mr. Kuzma. Do you have a copy of your**
 14 **rebuttal testimony available?**

15 A Yes.

16 **Q Can you turn to Page 3, Lines 17 to 19, and let me know**
 17 **when you are there.**

18 A I'm there.

19 **Q Here you state, quote, PSE is aware that a compliance**
 20 **strategy that relies exclusively upon the purchase of**
 21 **compliance instruments would be insufficient for PSE's**
 22 **natural gas operations.**

23 **What do you mean when you say that relying on**
 24 **purchasing compliance instruments would be insufficient?**
 25

1 **correct?**

2 A That's an interesting question. I would say that the
 3 intent of the CCA is to send a signal to encourage
 4 decarbonization by people that have emissions, and that
 5 would get passed through to customers and so customers
 6 will have incentive and Puget will have incentive through
 7 the regulatory body here at the Commission to help
 8 customers along that decarbonization route.

9 So, yeah, in the long run, it does -- it's not
 10 necessarily PSE's choice to decarbonize customers. We do
 11 not have that choice, but we think that customers will
 12 eventually start to make that choice, whether through
 13 mandate, statutory rulemaking, but also through our
 14 meeting of customers' needs as the loads decrease due to
 15 the decarbonization efforts our -- we purchase compliance
 16 obligations will all decrease.

17 **Q All right. And so to summarize that, earlier in your**
 18 **answer on Page 3 you say, quote, PSE recognizes that**
 19 **compliance with the CCA will require complex and**
 20 **multifaceted decarbonization efforts across many**
 21 **industries, including natural gas utilities, correct?**

22 A Yes, that's correct.

23 **Q Okay. So could you turn to Page 79 of your rebuttal**
 24 **testimony and let me know when you are there.**

25 A Okay.

1 **Q So here you give a hypothetical in which CCA costs are**
 2 **placed into base rates and PSE pays ten percent more for**
 3 **allowances than what was forecast when those costs were**
 4 **set in base rates, leading to under recovery, correct?**

5 A That's correct.

6 **Q All right. And on the next page you summarize the point**
 7 **of your hypothetical by saying small changes in large**
 8 **numbers have large results; is that correct?**

9 A Yes.

10 **Q But doesn't this hypothetical demonstrate that if PSE**
 11 **were motivated to reduce the costs it pays for CCA**
 12 **allowances, even if PSE were only successful in reducing**
 13 **that average allowance cost by five or ten percent, that**
 14 **small reduction would have a large impact on the costs**
 15 **that ultimately get passed on to PSE's customers,**
 16 **wouldn't it?**

17 A No.

18 **Q No? Why?**

19 A Because your isolating it to CCA compliance costs and
 20 there's a whole suite of other costs that are ignored in
 21 that situation. So if we have -- the problem that Puget
 22 has at this point is that we have one tool to comply, and
 23 that's the compliance tool. We can put together other
 24 programs and I believe we heard JEA mention it earlier in
 25 their opening testimony that they could -- there could be

1 A Again, I would not agree with that. And the reason that
 2 I wouldn't agree with that is that you are making an
 3 assumption that on the CCA compliance costs Puget can do
 4 anything other than purchase at an auction, so by
 5 definition Puget will be buying CCA compliance costs at
 6 auction.

7 And so basically all you are proving there is that
 8 our actual costs might be less than what was projected
 9 going into that compliance year, but that doesn't prove
 10 anything other than the projections are wrong.

11 And that's the problem with putting it into a base
 12 rate, is that nobody knows what the compliance costs for
 13 the next year are until they actually occur. So we are
 14 making a guess going into that year that's based on
 15 the -- I mean, Puget has done a fantastic job, in my
 16 estimation, to this date meeting the compliance
 17 obligation on a prudent basis, and so I don't think
 18 anything in this proceeding will effectively change
 19 Puget's obligations or activities going forward.

20 I know that there has been discussion here about
 21 passthroughs, but a passthrough always has prudence
 22 risks, and Puget always considers those. And so that's
 23 our fundamental point in this proceeding is that we
 24 should be able to forecast what those prices are, true
 25 them up to what the actuals are subject to some type of

1 other mechanisms that are more cost -- that are of a
 2 higher cost to customers in the short term or today, and
 3 so those costs might get passed through differently, so
 4 you can't simply look at one part of the calculus.

5 It's a complicated calculus that what is the total
 6 cost to customers, and that is something that, at this
 7 point, we really don't have a lot of direction on, and
 8 that's something we hope to in the ISP try to get
 9 established with the Commission a mechanism that would
 10 allow us to sort of say what is an appropriate suite of
 11 mechanisms that we can offer to customers to reduce
 12 decarbonization and meet the CCA.

13 So, yes, our CCA compliance obligation costs might
 14 go down, but it might be that customers are paying more
 15 because they entered into a bill assistance program to,
 16 you know, electrify their home to switch -- a fuel
 17 switch.

18 So I can't answer your question on, you know, an
 19 individual point because all of the costs need to be
 20 factored into the customer.

21 **Q But under your hypothetical, wouldn't you agree that what**
 22 **this demonstrates is that to the extent that PSE is able**
 23 **to get a lower cost per CCA allowance that that lower**
 24 **average cost would have a big impact, if you hold demand**
 25 **constant?**

1 prudence review.

2 **Q Okay. So you are mentioning a prudence review of the CCA**
 3 **allowance costs. Doesn't a prudence review imply that**
 4 **the decisions that the Commission -- that PSE makes**
 5 **related to the auctions and the CCA allowance costs,**
 6 **doesn't that imply that PSE does have some amount of**
 7 **control over its decision to impact how much customers**
 8 **ultimately pay for CCA allowances?**

9 A Far less than you would assume. For example, this year
 10 every auction that we have uncured we have actually lost
 11 allowances on a net basis because of the way the auctions
 12 have been set up. We are not able to purchase a
 13 sufficient number of allowances at auctions to meet our
 14 actual needs. So we have a very limited ability to
 15 actually control the costs other than to buy as much as
 16 we can in every auction.

17 **Q Okay. So your position is that PSE's ability to**
 18 **influence to cost it pays for CCA allowances on average**
 19 **is limited, but doesn't your hypothetical on Page 79**
 20 **demonstrate that even if it does have a limited ability,**
 21 **even a small chance of PSE being able to reduce the**
 22 **costs, the average cost of CCS allowances, that would**
 23 **have a significant impact on PSE's customers if**
 24 **successful, correct?**

25 A No.

1 **Q No?**
 2 A No. And the reason is that when you put a cost into base
 3 rates it's a projection. It's a projection based on we
 4 have really no idea what next year's compliance
 5 obligations will be or costs will be. They were really
 6 high the first year. They were low this year, and who
 7 knows what they will be next year.
 8 So all you are doing there is Puget will go out and
 9 comply and the actual costs will be higher or lower than
 10 what is put in the base rates. There is no ability --
 11 it's not like a person's salary that Puget can say the
 12 salary next year is going to be X. We know that that
 13 cost is, so if that person is retired or laid off or
 14 promoted then we know that there's a difference going to
 15 happen.
 16 Here we just know there's going to be a cost. We
 17 have an idea of what the cost might be, and if it comes
 18 in five or ten percent lower that is, in some part,
 19 likely due to some activity that Puget did, but it might
 20 just also be the market. That's just a function of
 21 dealing with a market. We don't know what the cost will
 22 be next year.
 23 **Q Right. So you would agree that PSE's decisions have the**
 24 **ability to result in lower or higher average CCA**
 25 **allowance costs?**

1 **Q So what you are saying is there is a lot of uncertainty**
 2 **here and we are just doing the best we can with our**
 3 **forecasts, right?**
 4 **Whether these coasts are in base rates or in the**
 5 **tracking mechanism, right, the forecast is just the best**
 6 **that we can do, correct?**
 7 A Right. And that's why we would have to suggest that
 8 there would be the true up mechanism so that -- subject
 9 to prudence review so that you could take a look and make
 10 sure that Puget did what it could to try to manage those
 11 costs to keep them within a reasonable range around
 12 whatever the market averages. But at the end of the day,
 13 if the market surges by 30 percent our costs are going to
 14 surge by about 30 percent.
 15 **Q Okay. Fair enough. But to the extent that PSE'**
 16 **decisions can have any impact on the amount that it pays**
 17 **for the average CCA allowance cost, even a small change**
 18 **would have a large impact on the cost that customers pay,**
 19 **right?**
 20 A In the aggregate, yes, because of Puget's costs --
 21 compliance costs would be in the aggregate large, yes.
 22 MR. CALLAGHAN: Thank you. No further
 23 questions.
 24 JUDGE BONFRISCO: Thank you. Any
 25 redirect, Ms. Barnett?

1 A Compared to the average market cost, yes. We can make
 2 sure that our costs are in line with what the market
 3 costs are, but we don't control the market. That's the
 4 problem with putting it in base rates is that what is the
 5 market cost? That's what we are projecting. We don't
 6 know what that is. We can tell you that we can try to
 7 keep it on the low side. Last year we were below what
 8 the average price throughout the year was, so we, in my
 9 mind, met our prudence standard. We showed we did a
 10 wonderful job in trying to manage that risk, with a lot
 11 of difficulty we had in that process.
 12 I'm saying we don't control the market. We can
 13 control our activities within the market so on a margin,
 14 yeah, we can sort of say we can try to be, you know,
 15 within X percent of whatever the average costs are, but
 16 at the end of the day we don't control that market. That
 17 market is determined by activities of the state,
 18 activities of other participants in the market. There's
 19 a fair number of Wall Street participants in the market.
 20 It's a complicated market.
 21 And going forward, on top of that, I mean, if we
 22 have engaged with other jurisdictions you have added that
 23 complication in as a factor. You know, I don't really
 24 know how to factor in how to address what the projected
 25 cost of a two state, one province market might look like.

1 MS. BARNETT: No thank you.
 2 JUDGE BONFRISCO: Okay. Thank you.
 3 At this point, we are at about 10:21. I just want to
 4 take a pulse if we want to take a break or if we want to,
 5 you know, I know we tentatively planned for 10:30.
 6 COMMISSIONER RENDAHL: Your Honor, I
 7 would appreciate a break.
 8 JUDGE BONFRISCO: Okay. We will take
 9 a ten-minute break -- or ten minutes, is that good? So
 10 we will be back at 10:32 a.m. Thank you.
 11 (Recess 10:22 a.m. to
 12 10:38 a.m.)
 13
 14 JUDGE BONFRISCO: Okay. We are back
 15 on the record. Mr. Callaghan, if you would like to call
 16 PSE's next witness.
 17 MR. CALLAGHAN: Thank you, Your Honor.
 18 Commission Staff calls Todd Shipman.
 19 JUDGE BONFRISCO: Mr. Shipman, could I
 20 have you raise your right hand.
 21
 22 TODD SHIPMAN, witness herein, being
 23 first duly sworn on oath,
 24 was examined and testified
 25 as follows:

1 THE WITNESS: I do.
 2 JUDGE BONFRISCO: Okay. Mr.
 3 Callaghan, you may proceed with your examination.
 4 MR. CALLAGHAN: Thank you, Your Honor.
 5
 6 CROSS-EXAMINATION
 7 BY MR. CALLAGHAN:
 8 **Q Good morning, Mr. Shipman, can you hear me?**
 9 A Yes.
 10 **Q Do you have a copy of your rebuttal testimony with you?**
 11 A Yes, I do.
 12 **Q So before we begin, is your argument in your rebuttal**
 13 **testimony that approving adjustment mechanisms ultimately**
 14 **lowers the cost of capital, and that lower cost of**
 15 **capital benefits customers more than any harm that might**
 16 **be caused by approving a given adjustment; is that a fair**
 17 **summary?**
 18 A No. I would say we are not recognizing any harm to
 19 employing adjustment mechanisms, but other than that I
 20 would agree with your statement.
 21 **Q Okay. Thank you. So after the Commission approves an**
 22 **adjustment mechanism, assuming all else is equal, that**
 23 **should reduce the approved cost of capital whenever the**
 24 **next opportunity arises, correct?**
 25 A Yes, all else being equal.

1 A Yes.
 2 **Q Do you have a copy of it readily available?**
 3 A No.
 4 **Q You don't?**
 5 A No.
 6 **Q Okay. All right. So just based on your recollection,**
 7 **doesn't witness Martin argue the opposite of what you are**
 8 **arguing in parts of her rebuttal testimony?**
 9 A That's best to ask her.
 10 **Q Okay. So what's PSE's position in this case? Should the**
 11 **approval of an adjustment mechanism impact the**
 12 **Commission's next cost of capital decision or not?**
 13 A I don't know what the position is on that.
 14 **Q Okay. Moving on, could you turn to your rebuttal**
 15 **testimony, Page 7, Line 5, and let me know when you are**
 16 **there.**
 17 A I'm there.
 18 **Q In this answer you state, quote, Utilities have the same**
 19 **incentive to control costs whether the relationship of**
 20 **costs to revenue is positive, neutral, or negative; is**
 21 **that accurate?**
 22 A Yes.
 23 **Q Are you arguing that the utility has the same incentive**
 24 **to control specific costs that are subject to a pure**
 25 **passthrough adjustment mechanism compared to if those**

1 **Q Okay. So is your argument that approving an adjustment**
 2 **mechanism is always a net benefit to customers because**
 3 **adjustment mechanisms result in a lower rate of return?**
 4 A I would say most of the time. I can't think of every
 5 circumstance off the top of my head that supports a
 6 blanket statement, but I would say under most
 7 circumstances any actions that the Commission takes to
 8 improve a company's ability to reduce the volatility of
 9 its earnings and cash flow is going to rebound to the
 10 benefit of the rate payers.
 11 **Q All right. Could you turn to Page 7, Lines 6 through 9**
 12 **of your rebuttal testimony and let me know when you are**
 13 **there.**
 14 A I am there.
 15 **Q So here you state, quote, Cost of capital experts**
 16 **recognize the risk reducing effects of adjustment**
 17 **mechanisms; is that accurate?**
 18 A Yes.
 19 **Q All right. So you would disagree with the argument that**
 20 **the approval of an adjustment mechanism has no bearing on**
 21 **an expert witness' recommendation on cost of capital,**
 22 **correct?**
 23 A Yes.
 24 **Q Have you reviewed the rebuttal testimony of PSE's witness**
 25 **Jamie Martin?**

1 **same costs were embedded in rates?**
 2 A Yes. I think their incentive to control costs is
 3 constant. They have a profit motive to try to maximize
 4 profits and to the extent that they can reduce costs,
 5 it's in your best interest.
 6 **Q But if a specific set of costs are subject to a pure**
 7 **passthrough mechanism, to the extent they reduce those**
 8 **costs, doesn't that get passed back to the customer?**
 9 A Yes, it gets passed through the customers.
 10 **Q So in that case reducing those costs would not be**
 11 **beneficial to the utility, would it, from a financial**
 12 **perspective?**
 13 A I think it's in their best interest to keep their rates
 14 as low as possible. For one thing, it would encourage,
 15 you know, people to use their product and that's what
 16 most companies strive to do. I would not disagree with
 17 the idea that a passthrough mechanism perhaps does not
 18 have the same -- doesn't present the same urgency to
 19 control costs, but I think a utility like any other
 20 company wants to have the lowest price for their product
 21 in order to please their customers.
 22 **Q All right. So what I think I have heard from your**
 23 **response is that you said it doesn't have the same**
 24 **urgency. So it's not the exact same incentive in the**
 25 **case of a pur passthrough versus those same costs being**

1 embedded in the rates?
 2 A I would agree with that.
 3 **Q Okay. So starting on Page 7, Line 5 you state, quote,**
 4 **Utility managers have shown a deal for cost cutting for a**
 5 **variety of different reasons; is that accurate?**
 6 A Yes.
 7 **Q Okay. So, again, are you arguing here that a utility**
 8 **manager would have the same incentive to cut costs when**
 9 **they have a full passthrough adjustment compared to if**
 10 **those same costs were embedded in rates?**
 11 A That's not the issue I was addressing in this section of
 12 my testimony.
 13 **Q Okay. Can you point me to any evidence in the record**
 14 **that supports the claim that you are making on Page 7,**
 15 **Line 15?**
 16 A Okay.
 17 **Q Does your testimony cite any prior Commission decisions**
 18 **that come to the same conclusion that you have on this**
 19 **point?**
 20 A No.
 21 MR. CALLAGHAN: Nothing further.
 22 Thank you, Your Honor.
 23 COMMISSIONER RENDAHL: So that
 24 concludes your questions?
 25 MR. CALLAGHAN: Yes.

1 MR. CALLAGHAN: Thank you, Your Honor.
 2 Commission Staff calls Christopher Mickelson.
 3 JUDGE BONFRISCO: Okay. Mr.
 4 Mickelson, can I go ahead and swear you in?
 5 THE WITNESS: Yes.
 6 JUDGE BONFRISCO: Okay. If you could
 7 raise your right hand.
 8
 9 CHRISTOPHER MICKELSON, witness herein, being
 10 first duly sworn on oath,
 11 was examined and testified
 12 as follows:
 13 THE WITNESS: I do.
 14 JUDGE BONFRISCO: Thank you. You may
 15 proceed, Mr. Callaghan.
 16 MR. CALLAGHAN: Thank you, Your Honor.
 17
 18 CROSS-EXAMINATION
 19 BY MR. CALLAGHAN:
 20 **Q Good morning, Mr. Mickelson.**
 21 A Good morning.
 22 **Q Do you have copies of your initial and rebuttal testimony**
 23 **with you?**
 24 A I do.
 25 **Q Okay. Could you turn to Page 4 of your rebuttal**

1 JUDGE BONFRISCO: Any redirect?
 2 MS. BARNETT: Yes, just quickly, I
 3 think. Thank you, Your Honor.
 4
 5 REDIRECT EXAMINATION
 6 BY MS. BARNETT:
 7 **Q Mr. Shipman, you heard counsel for Staff ask you about**
 8 **the passing through costs through a tracker versus costs**
 9 **embedded in rates, and how would you describe the**
 10 **company's ability to control costs related to the Climate**
 11 **Commitment Act compliance?**
 12 A My understanding would be that it's limited, that the
 13 activities there are really based off of -- or involve
 14 costs that are set by a market.
 15 **Q Thank you. And regarding the passing through of costs**
 16 **through the tracker, if CCA costs and compliance are**
 17 **increasing risk to a company, PSE, would getting a**
 18 **passthrough on those costs, how would that affect PSE's**
 19 **risk? Would that reduce? Increase? Keep it flat?**
 20 A Having a separate tracker mechanism would reduce the
 21 risk.
 22 MS. BARNETT: No further questions.
 23 JUDGE BONFRISCO: Thank you. So, Mr.
 24 Callaghan, it looks like your next witness is Christopher
 25 Mickelson. Could you please call Mr. Mickelson?

1 **testimony and let me know when you are there.**
 2 A I'm there.
 3 **Q All right. Beginning on Line 5 you criticize Staff's**
 4 **earning test proposal by saying that it is unclear what**
 5 **the ten basis point caps that Staff's proposal is applied**
 6 **to; is that correct?**
 7 A Correct.
 8 **Q Would PSE's position on Staff's proposal be different**
 9 **depending on whether the ten basis point cap applies to?**
 10 A I don't think our position would be different. It's
 11 more -- it's on the responsibility of the parties to
 12 provide a clear, precise proposal so people can
 13 understand what they analyze.
 14 **Q All right. If the Commission had a clear sense of what**
 15 **Staff was proposing, it could make that explicit in the**
 16 **order in this case, correct?**
 17 A Make what clear?
 18 **Q What the ten basis point cap applies to?**
 19 A Yes. However, there's additional items that should be
 20 looked at which I have in my rebuttal and those questions
 21 should also be addressed.
 22 **Q Okay. The Commission in its order in this case could**
 23 **clarify all those issues depending on what risk-sharing**
 24 **mechanism or earnings test it decides to adopt here,**
 25 **correct?**

1 A Yes. It's in the Commission's power to decide a lot of
 2 things that the company would have to comply with.
 3 **Q Okay. So if the Commission does approve a risk-sharing**
 4 **mechanism with an earnings test and PSE has any lingering**
 5 **questions about the way it's supposed to work, is it safe**
 6 **to assume that the company would move to clarify the**
 7 **order?**
 8 A Do you mind rephrasing that?
 9 **Q Yes. So if PSE had any -- if there was any confusion**
 10 **about what the Commission was requiring PSE to do for**
 11 **Schedule 111, would PSE take steps to resolve that**
 12 **confusion, to get clarity?**
 13 A Within all Commission orders we -- PSE complies with, and
 14 if there's any unclarity we typically will ask for the
 15 Commission to clarify but, yes, in essence.
 16 **Q Okay. You call Staff's proposed earnings cap drastic and**
 17 **arbitrary on Page 4 of your rebuttal testimony; is that**
 18 **right?**
 19 A Can you point to a line? I found it. Line 17.
 20 **Q Is that correct?**
 21 A Yes, because it's not clear how Staff came about with the
 22 ten point basis point on an annual basis.
 23 **Q Okay. Do you have a copy of Exhibit CTM-5 with you?**
 24 A I might. I do.
 25 **Q Could you review this exhibit and then let me know when**

1 **Q Okay. Do you have a copy of your initial testimony?**
 2 A I do.
 3 **Q Could you turn to Page 18 and let me know when you are**
 4 **there.**
 5 A I'm there.
 6 **Q Here you describe PSE's proposed earnings test, correct?**
 7 A Correct.
 8 **Q And one feature of PSE's proposed earnings test is that**
 9 **if PSE earns anything below its authorized rate of return**
 10 **that PSE pays nothing under the proposed risk-sharing**
 11 **mechanism, correct?**
 12 A That is correct. That is the proposal to not increase
 13 the financial harm to the company and take away possible
 14 cash flow for other carbon -- decarbonization efforts or
 15 other means.
 16 **Q Has PSE provided any historical perspective on how often**
 17 **it has earned above its authorized return on the gas**
 18 **side?**
 19 A Within the filing I'm not sure if we have or haven't. I
 20 know -- I believe in the past we have indicated those
 21 kind of things.
 22 **Q Okay. Do you have a general sense of how often PSE has**
 23 **earned above its authorized return in let's say the last**
 24 **10 or 20 years?**
 25 A I do not. Unfortunately, I have kind of been out of the

1 **you are done.**
 2 A It's multiple data requests from PSE to Staff.
 3 **Q Thank you. In this data request response Staff is**
 4 **providing an example of how its earnings cap would have**
 5 **worked if it had been in place from 2020 to 2023,**
 6 **correct?**
 7 A That's correct. However, this one in part of the record,
 8 if I didn't ask these requests, this was not part of the
 9 initial response testimony of Staff.
 10 **Q Okay. And in this response the hypothetical maximum cost**
 11 **to PSE over the four years would have been a little over**
 12 **five million dollars; is that correct?**
 13 A I assume you are referencing data request number three
 14 from PSE?
 15 **Q Yes.**
 16 A That would be correct, under the hypothetical. It was
 17 for illustrative purposes only, and it doesn't reflect
 18 what actual market conditions are right now.
 19 **Q Fair enough. Is the ballpark amount of a little over**
 20 **five million dollars over four years really drastic in**
 21 **light of the total potential CCA cost that might be**
 22 **passed through rates to customers?**
 23 A In this hypothetical, I would say no. However, what the
 24 actual application, and what that would look like or
 25 result in I cannot answer.

1 state for most of that time period, but I would likely to
 2 guess it's probably not often.
 3 **Q One person said the risk-sharing mechanism is to create**
 4 **incentives for the utilities, wouldn't you agree?**
 5 A I would not agree.
 6 **Q You would not agree with that one purpose of the**
 7 **risk-sharing mechanism is to create incentives for a**
 8 **utility?**
 9 A For risk sharing? No, that would be more of a
 10 performance incentive mechanism.
 11 **Q Okay. Doesn't this kind of earnings test dampen any**
 12 **incentive created by the risk-sharing mechanism?**
 13 A What do you mean by that?
 14 **Q Well, you have just testified that based on your**
 15 **recollection PSE does not often earn above its authorized**
 16 **return on the gas side. Doesn't PSE's proposed earnings**
 17 **test then really limit the incentive created by the**
 18 **risk-sharing mechanism?**
 19 MS. BARNETT: Objection,
 20 mischaracterizes the testimony. I believe Mr. Mickelson
 21 said he was not aware of the natural gas rate earnings in
 22 the past, and that the risk-sharing mechanism did not
 23 create incentive, he said that was a performance
 24 incentive mechanism.
 25 JUDGE BONFRISCO: Staff, could you

1 rephrase that?

2 MR. CALLAGHAN: Yes. Thank you, Your

3 Honor. And I will sustain that objection.

4 **Q (By Mr. Callaghan) Mr. Mickelson, if the purpose of a**

5 **risk-sharing mechanism is to create incentives for a**

6 **utility, doesn't PSE's proposed earnings test reduce the**

7 **incentive created by the risk-sharing mechanism itself?**

8 A I would say no. This allows the company to have an

9 opportunity to earn an authorized return, but this

10 financial earnings test only gets triggered if we are

11 under that, and thus doesn't create additional harm

12 financially to the company. When this does apply, then

13 the company helps reduce the price signals that customers

14 get.

15 **Q But if historically PSE knows that it often does not end**

16 **up earning its authorized rate of return, then doesn't it**

17 **also know that under this earnings test it's unlikely**

18 **that it will be required to share in any of the costs**

19 **incurred for CCA allowance?**

20 A No. That would be a false perception because just like

21 stock market returns you don't just look at historical

22 and assume that will apply going forward.

23 **Q So your argument is that PSE does not have any idea of**

24 **going forward whether it's likely to earn above its**

25 **authorized rate of return or not?**

1 THE WITNESS: I do.

2 JUDGE BONFRISCO: All right. Thank

3 you. Mr. Callaghan, you may proceed.

4 MR. CALLAGHAN: Thank you, Your Honor.

5

6 CROSS-EXAMINATION

7 BY MR. CALLAGHAN:

8 **Q Good morning, Ms. Martin. Do you have a copy of your**

9 **rebuttal testimony?**

10 A Yes, I do.

11 **Q In your rebuttal testimony you opposed Staff's primary**

12 **recommendation, correct?**

13 A That's correct.

14 **Q And your argument opposing Staff's proposed framework**

15 **doesn't address the specifics of any of Staff's proposed**

16 **criteria, correct?**

17 A I'm not sure I follow your question. Could you rephrase

18 it, please?

19 **Q Yes. So in your criticism of Staff's proposed primary**

20 **recommendation you don't specifically criticize Staff's**

21 **criteria one, criteria two, et cetera, correct?**

22 A I think the premise of my testimony is that the

23 elimination of a Schedule 111 mechanism isn't the right

24 path for these types of costs. And by making that

25 argument in my testimony, it's implicit that the

1 A The company's goal is always to strive to earn its

2 authorized rate of return. Whether we meet that it's

3 multiple conditions apply so I cannot truly answer that.

4 **Q So your testimony is you don't have a sense of how likely**

5 **it is in the future that PSE will earn above its**

6 **authorize rate of return?**

7 A I'm sorry. I don't have a crystal ball.

8 MR. CALLAGHAN: Okay. No further

9 questions, Your Honor.

10 JUDGE BONFRISCO: All right. Any

11 redirect?

12 MS. BARNETT: No, thank you, Your

13 Honor.

14 JUDGE BONFRISCO: Thank you. With

15 that then, Mr. Callaghan, would you like to call -- it

16 looks it's PSE's last witness.

17 MR. CALLAGHAN: Thank you, Your Honor.

18 Commission Staff calls Jamie Martin.

19 JUDGE BONFRISCO: Hello, Ms. Martin.

20 If you could raise your right hand.

21

22 JAMIE MARTIN, witness herein, being

23 first duly sworn on oath,

24 was examined and testified

25 as follows:

1 subsequent items in Staff's proposal, from my

2 perspective, do not make sense.

3 **Q Okay. So your rebuttal is focused on Staff's premise**

4 **that, in general, absent specific circumstances, it is**

5 **not in the public interest to approve tracking**

6 **mechanisms; is that accurate?**

7 A Sorry. Do you have a reference point for my testimony?

8 **Q I'm not citing a specific part of the testimony, but I**

9 **guess my question is, you are attacking the premise that**

10 **without a specific public interest demonstration, Staff's**

11 **premise that it's not in the public interest to approve a**

12 **tracking mechanism, you are attacking that premise,**

13 **correct?**

14 A What I'm arguing is that retaining a Schedule 111

15 mechanism for these specific costs is the right thing to

16 do given where we are in implementation of CCA, and more

17 broadly as I reference later in my testimony.

18 **Q Okay. So setting aside your argument about whether**

19 **Staff's primary recommendation is within the scope of**

20 **this proceeding or not, is it fair to say that the main**

21 **point of your rebuttal testimony is essentially that**

22 **Staff is incorrect that shifting variances from the**

23 **company onto the customers is a problem that the**

24 **Commission needs to address in this case; is that a**

25 **reasonably accurate summary?**

1 A Parts of what I articulate in my testimony is that what
 2 Staff suggests is variant interest and considered in
 3 returns on equity isn't accurate.
 4 **Q Okay. And your reasoning is that shifts in variances**
 5 **from the company to the customer are already accounted**
 6 **for in return on equity analysis and ultimately**
 7 **Commission decisions on higher rates; is that correct?**
 8 A Again, is there a specific part of my testimony you are
 9 referencing?
 10 **Q Let's turn to Page 7, Lines 10 through 13 and let me know**
 11 **when you are there.**
 12 A I'm there.
 13 **Q Okay. So I will repeat my question. Your reasoning in**
 14 **rebuttal is that shifts in variances from the company to**
 15 **customer are already accounted for in return on equity**
 16 **analysis and Commission decisions on higher rates; is**
 17 **that accurate?**
 18 A I don't think the testimony referenced that we are
 19 looking at right now is specifically related to that.
 20 **Q So here you state, In other words the risk reducing**
 21 **impacts of adjustment mechanism and approved returns on**
 22 **equity established by regulatory bodies are largely**
 23 **imbalanced because the latter incorporates the existence**
 24 **of the former. Am I reading that right?**
 25 A You are reading that right.

1 **Commission Staff is bringing up because those risks are**
 2 **already accounted for in return on equity analysis?**
 3 **Isn't that the argument you are making?**
 4 A The argument I'm making is that the cost should not --
 5 the cost of CCA compliance should not be in base rates,
 6 they should remain an adjustment mechanism because an
 7 adjustment mechanism is an appropriate place for those
 8 costs.
 9 **Q Okay. So could you turn to Page 4 and let me know when**
 10 **you are there.**
 11 A I'm on Page 4.
 12 **Q All right. On Lines 7 to 11 you state that Staff**
 13 **incorrectly suggests that ROE compensates utilities for**
 14 **variances, and that this statement is quote, represents a**
 15 **fundamental misunderstanding of bedrock principles**
 16 **related to risk and returns in regulatory law; is that**
 17 **correct?**
 18 A Yes. That's correct.
 19 **Q That's a strong statement, wouldn't you agree?**
 20 A I think it's a comprehensive statement.
 21 **Q All right. So is it your opinion that Commission**
 22 **approved ROE does not or is not intended to compensate**
 23 **investors for variances?**
 24 A Part of what I am articulating here is that the variance
 25 risk introduced in Staff's testimony isn't consistent

1 **Q All right. That's essentially saying that the impacts of**
 2 **adjustment mechanisms are already accounted for in return**
 3 **on equity decisions; isn't it?**
 4 A The context of this statement is important and so when
 5 you look at the other components of how I wrote about
 6 this in my testimony the point here is that the existence
 7 of adjustment mechanisms are a component of how returns
 8 on equity are set across a set of tiered utilities.
 9 Adjustment mechanisms are a common regulatory tool and
 10 approved returns on equity consider those in aggregate,
 11 often not in isolation, and that is reflected in cost of
 12 capital across utilities.
 13 There's other components in my testimony that
 14 describe how this specific situation in regards to CCA
 15 compliance is risky in and of itself. It's certainly new
 16 amongst all of the jurisdictions that consider ROEs in
 17 the United States specifically.
 18 And the existence of adjustment mechanisms are
 19 appropriate when there is a risk introducing set of
 20 activities that a utility needs to participate in because
 21 of a policy decision or regulatory decision.
 22 **Q But isn't your discussion on ROE and how the Commission**
 23 **decides returns on equity and overall rate of return,**
 24 **isn't the relevance of that for this case that the**
 25 **Commission does not need to worry about the issues that**

1 with how risk and returns are considered inside of
 2 regulated activities.
 3 **Q So are you saying that ROE -- that ROE analysis does or**
 4 **does not consider variances?**
 5 A I think it's important to define variance risk.
 6 **Q Okay.**
 7 A Staff's definition of variance risk in this case seems to
 8 be the costs -- the difference between forecasted cost
 9 and actual costs.
 10 **Q Based on that definition, is your opinion that Commission**
 11 **approved ROE does or does not compensate investors for**
 12 **variances?**
 13 A The question is very broad, and so I think it's important
 14 to understand we have to talk in the specifics about what
 15 ROE compensates for with regard to the difference between
 16 forecasted and actual costs. ROEs are designed to ensure
 17 utilities have the opportunity to be compensated for the
 18 suite of risks that they face given the environment in
 19 which they operate.
 20 The difference between forecasted cost and actual
 21 costs is certainly embedded in there, but it's not the
 22 only thing that's considered. I think when jurisdictions
 23 are setting ROEs, the type of costs, the ability to
 24 protect and control those costs, the known and unknowns
 25 associated with those costs are all really important

1 characteristics of what goes into the definition of a
 2 variance risk. They can't, in my opinion, be done so
 3 broadly.
 4 **Q So I think what you said was it's embedded in there along**
 5 **with other risks, so are you saying that you do think**
 6 **that ROE compensates investors for variances?**
 7 A Not for the risk we are talking about in this proceeding.
 8 **Q All right. So your -- so is your opinion that ROE does**
 9 **not compensate for variance risk as Commission Staff has**
 10 **defined it?**
 11 A I don't know that I can give you a better answer than
 12 what I just gave you, but the variance risk associated
 13 with the volatility in CCA compliance costs are different
 14 than other types of costs as I was describing in my
 15 answer previously.
 16 **Q So but here I'm just asking about variance risk in**
 17 **general.**
 18 A Okay. Yes, and my -- the way I'm trying to answer your
 19 question is to say that variance risk, as defined by
 20 Staff, I don't agree with the definition of the variance
 21 risk that Staff's position indicates. It's too broad in
 22 my opinion, and that's why I'm giving you the answers
 23 that I'm giving you at this time.
 24 **Q Okay. So in that same answer, again on Page 4, Lines 12**
 25 **through 16, you state, quote, Establishing return on**

1 **Q (By Mr. Callaghan) So do you believe that an investor**
 2 **would not consider the potential difference between**
 3 **actual cost and the level of costs embedded in rates when**
 4 **deciding whether or not to invest in a specific utility?**
 5 A I believe that an investor would consider the ability of
 6 the utility to manage its costs or earn a fair return and
 7 recover those costs timely and completely based on its
 8 prudent operations.
 9 **Q Okay. So it's not a fundamental misunderstanding of**
 10 **bedrock principles of regulatory law to say that variance**
 11 **risk is something that an investor would consider, is it?**
 12 A I'm back to saying that the definition of variance risk
 13 as offered in Staff's testimony is too broad and there
 14 are many factors that an investor would consider in
 15 determining whether to invest in a utility, and the
 16 principles associated with risk evaluation and
 17 establishing returns are much more broad than variance
 18 risk.
 19 **Q Okay. But are you saying that variance risk as Staff has**
 20 **defined it is not something that is considered in ROE**
 21 **analysis?**
 22 A It's a component of.
 23 **Q Okay. So could you turn to Page 8 of your rebuttal**
 24 **testimony and let me know when you are there.**
 25 A I'm on Page 8.

1 **equity is a regulatory concept in the quest of capital**
 2 **attraction which involves the comparison of risks among**
 3 **alternative investments, unquote.**
 4 **Wouldn't variance risk as Staff has defined it be**
 5 **one of the risks that a potential investor consider when**
 6 **they compare a specific utility to other to other**
 7 **potential investments?**
 8 A I think that utility investors look at a number of things
 9 when they look at the risk profile of a particular
 10 investment opportunity inside of a utility space. I
 11 think they look at the types of compliance requirements
 12 the utility has, the construct of the regulatory
 13 environment, the ability for the utility to earn a fair
 14 return, the ability of a utility to deliver for its
 15 customers, and deliver for its debt and equity holders.
 16 And, again, the definition of Staff's variance risk in
 17 its testimony, I think, is very broad and so to say
 18 anything specific about it is difficult for me.
 19 JUDGE BONFRISCO: Ms. Martin, if I
 20 could have you bring the microphone closer I'm getting
 21 input they are having a difficult time hearing you.
 22 Thank you.
 23 THE WITNESS: You're welcome. Is that
 24 better?
 25 JUDGE BONFRISCO: Yes.

1 **Q All right. In Footnote 14 you cite two articles from S&D**
 2 **Global Market Intelligence, and you provide a hyperlink**
 3 **to the 2017 article; is that right?**
 4 A Yes.
 5 **Q Have you read the article that you cite here?**
 6 A Yes.
 7 **Q Can you recall whether or not this article gives an**
 8 **opinion on whether or not adjustment mechanisms are**
 9 **beneficial to utilities?**
 10 A It's been -- I can't recall the guts of the article. If
 11 you want to talk about it specifically you can bring it
 12 up.
 13 **Q Do you recall whether or not this article states, quote,**
 14 **A defining characteristic of an adjustment clause is that**
 15 **it effectively shifts the risk associated with the**
 16 **recovery of the expense in question from shareholders to**
 17 **customers because if the clause operates as designed, the**
 18 **company is able to change its rates to recover its cost**
 19 **on a current basis without any negative on the bottom**
 20 **line, and without the expense and delay that accompanies**
 21 **a rate case filing?**
 22 A I don't recall. I don't have the article in front of me.
 23 **Q Okay. But do you agree with that statement?**
 24 A Can you read it again?
 25 **Q Yes. A defining characteristic of an adjustment clause**

1 is that it effectively shifts the risk associated with
 2 the recovery of the expense in question from shareholders
 3 to customers because if the clause operates as designed,
 4 the company is able to change its rates to recover its
 5 cost on a current basis without any negative on the
 6 bottom line, and without the expense and delay that
 7 accompanies a rate case filing.

8 A Could you repeat the question?

9 Q Do you agree with that statement?

10 A I would add subject to a prudence review.

11 MR. CALLAGHAN: I have no further
 12 questions, Your Honor.

13 JUDGE BONFRISCO: Thank you. Do I
 14 have any redirect from PSE?

15 MS. BARNETT: Yes, briefly. Thank
 16 you.

17 JUDGE BONFRISCO: Okay.

18 REDIRECT EXAMINATION

19 BY MS. BARNETT:

20 Q Ms. Martin, you heard Staff counsel asked you about the
 21 variance risk definition that Staff had. What can --
 22 could just please articulate your concerns with that
 23 definition?
 24

25 A Sure. My concerns are that that definition is overly

1 Advocates are proposing in this case?

2 MR. CALLAGHAN: Objection, Your Honor.

3 This is outside the scope of my cross-examination.

4 JUDGE BONFRISCO: I am going to go
 5 ahead and sustain that objection. If you could direct
 6 more specifically from what was previously --

7 MS. BARNETT: And I believe the report
 8 that Nash Callaghan was reading from was a report
 9 regarding other overall jurisdictional applications of
 10 risk-sharing mechanisms, and I'm asking a follow-up about
 11 other jurisdictions implementing those risk-sharing
 12 mechanisms.

13 JUDGE BONFRISCO: Mr. Callaghan, what
 14 specifically do you believe is outside the scope?

15 MR. CALLAGHAN: Questions related to
 16 the CCA. The article that I asked a question about is
 17 from 2017 before the CCA existed. I did not ask Ms.
 18 Martin about anything related to CCA costs.

19 CHAIR DANNER: Just to be clear, you
 20 are talking about Footnote 14 in the testimony?

21 MR. CALLAGHAN: That's correct.

22 CHAIR DANNER: I have a date of 2022.

23 MR. CALLAGHAN: There are two reports.
 24 The last one is the one I asked questions about.

25 MS. BARNETT: I believe my redirect

1 broad in terms of what it indicates variance risk is.
 2 The ROE is specifically designed to compensate utilities
 3 for differences in forecasted versus actual costs, that
 4 there's more to ROE -- and ROE setting to variance risk.

5 Q Thank you. And are you aware of how the Commission or in
 6 what form the Commission issues or approves an ROE for a
 7 utility?

8 A I am aware, yes.

9 Q How is that?

10 A My understanding is that in the state of Washington ROEs
 11 are set inside of the rate plan and are evaluated on a
 12 number of criteria and then set accordingly in that
 13 proceeding.

14 Q Thank you. And is the CCA implementation costs and the
 15 scale of those costs considered in PSE's ROE currently?

16 A I don't believe it is, no.

17 Q I believe you were asked about the California
 18 cap-in-trade program or a report with other -- regarding
 19 other states, are you aware in -- is California the only
 20 other jurisdiction with a similar cap-in-trade program as
 21 Washington?

22 A I know California definitely has a cap-in-trade program.

23 Q Are you aware of if the Commission, the California Public
 24 Utilities Commission imposes a risk-sharing mechanism on
 25 utilities in the -- like Staff or the Joint Environmental

1 question was not specific to this CCA. It was whether
 2 California applies a risk-sharing mechanism, if Ms.
 3 Martin is aware of California imposing or applying a
 4 risk-sharing mechanism in that jurisdictional utility.

5 MR. CALLAGHAN: Your Honor, my
 6 cross-examination did not ask any questions related to
 7 other jurisdictions.

8 MS. BARNETT: I'm fine with
 9 withdrawing that because I believe it's in the record
 10 anyway.

11 JUDGE BONFRISCO: Okay. Thank you.

12 MS. BARNETT: No further questions.

13 JUDGE BONFRISCO: Okay. Ms. Martin,
 14 you may be excused. Thank you.

15 Oh, real quick, before I do that I want to make
 16 sure, are there any questions from the bench? Okay. You
 17 may be excused, Ms. Martin.

18 Okay. We are now going to move to Public Counsel's
 19 cross-examination of Staff's witness.

20 Mr. Callaghan, if you could please introduce Staff's
 21 witness that will be called and I will swear them in.

22 MR. CALLAGHAN: Thank you, Your Honor,
 23 Chris McGuire.

24 JUDGE BONFRISCO: Oh, just to clarify,
 25 I believe Public Counsel's witness is Robert Earle.

1 MR. CALLAGHAN: Yes, Your Honor. I
 2 was a little confused.
 3 JUDGE BONFRISCO: No worries.
 4 MR. CALLAGHAN: Commission Staff calls
 5 Dr. Robert Earle.
 6 JUDGE BONFRISCO: There you are, Mr.
 7 Earle. Thank you. If you could raise your right hand.
 8
 9 ROBERT EARLE, witness herein, being
 10 first duly sworn on oath,
 11 was examined and testified
 12 as follows:
 13
 14 THE WITNESS: I do.
 15 JUDGE BONFRISCO: Thank you. You may
 16 proceed, Mr. Callaghan.
 17 MR. CALLAGHAN: Thank you, Your Honor.
 18
 19 CROSS-EXAMINATION
 20 BY MR. CALLAGHAN:
 21 **Q Good morning, Dr. Earle. Can you hear me?**
 22 A Yes, I can you hear. Thank you.
 23 **Q Do you have a copy of your cross answering testimony with**
 24 **you?**
 25 A I do.

1 **is not the criteria itself but the application, you still**
 2 **do have some objections to the basic criteria, but would**
 3 **you say that your cross answering testimony is mostly**
 4 **focused Staff's application for the primary**
 5 **recommendation?**
 6 A Well, I put it a little differently. I think that the
 7 criteria proposed by staff need to be modified so that
 8 it's clear that issues of the -- how well costs can be
 9 forecasted, especially five, six years ahead of time need
 10 to be -- that sort of issue needs to be incorporated into
 11 the criteria.
 12 **Q Thank you. Could you turn to Page 14 of your cross**
 13 **answering testimony, Lines 2 through 5?**
 14 A I'm there.
 15 **Q So here you state that none of Staff's criteria**
 16 **considered the issue of whether costs can likely be**
 17 **forecasted or how potentially significant those costs**
 18 **would be embedded, is that what you are talking about**
 19 **here?**
 20 A Yes.
 21 **Q Okay. Do you have a copy of Mr. McGuire's response**
 22 **testimony available?**
 23 A I do.
 24 **Q Could you turn to Page 24 of that testimony and let me**
 25 **know when you are there?**

1 **Q All right. Before we begin discussing specific questions**
 2 **about your testimony I just want to ask a general**
 3 **question. Do you disagree with Staff's general framework**
 4 **for evaluating tracking mechanism proposals, or is your**
 5 **position that you disagree with how Staff has applied**
 6 **that framework in this case? And specifically I'm**
 7 **thinking about Staff's primary recommendation or both.**
 8 A Okay. I will answer as best I can as it's a compound
 9 question. So I think there is an issue is -- I think
 10 what Staff has done in terms of bringing the issue of
 11 trackers and thinking about it is that is definitely
 12 commendable. I think there are things that Staff says
 13 that are useful.
 14 However, I think, and I believe I say this somewhere
 15 in my testimony that their perspective is a bit limited.
 16 And so Mr. McGuire developed the three criteria. And
 17 these three criteria are limited by the perspective
 18 especially, in my view, of considering whether costs are
 19 forecastable or not, or to the degree in which you can
 20 actually forecast the costs.
 21 **Q Thank you.**
 22 A And also whether an RSM can be developed to -- to -- as a
 23 cost control.
 24 **Q Okay. Thank you. That's helpful.**
 25 **So would it be fair to say that your main objection**

1 A Okay. All right.
 2 **Q Could you please -- the next two Q&As starting from Page**
 3 **24, Line 5 and ending on Page 25, Line 2, and let me know**
 4 **when you are finished reviewing that.**
 5 A Yes, I'm here.
 6 **Q Okay. Doesn't part of Mr. McGuire's proposed framework**
 7 **cover the circumstances you are concerned about here?**
 8 A So I'm not -- I'm not sure that it does, partly because
 9 there is -- to break it down there are two issues going
 10 on with CCA allowance costs. There's the price and
 11 there's the quantity.
 12 And the price times the quantity gives you the total
 13 cost. So in this case the utility has the ability to
 14 control what its average price paid for allowances is.
 15 And so that addresses the question -- I guess it's not
 16 clear to me that this really, really addresses the issue
 17 of forecastability of the cost, of the total cost of the
 18 P times Q.
 19 If I understand what he's saying is well, let's
 20 see...if the utility doesn't have costs -- and he says
 21 no. And then he says well, in circumstances where a high
 22 risk variances weren't assessed in the tracker...he says
 23 that the Commission should require these to establish an
 24 RSM.
 25 And I think that it would be more -- the three

1 criteria which, you know, if the Commission says these
 2 are the criteria that should be it would be more clear if
 3 embedded in his list of the three criteria that it was
 4 clear that there were times when trackers may be needed
 5 with appropriate RSMs in the criteria. And if that's
 6 what this is intended, fine, but when I read the three
 7 criteria it seems to me it seems to leave it out.

8 **Q Okay. But if when Mr. McGuire talks about high variance**
 9 **risk, if that's the equivalent of when you talk in your**
 10 **testimony about something being difficult to forecast, is**
 11 **high variance risk and something being difficult to**
 12 **forecast are more or less synonyms of each other, would**
 13 **Public Counsel still have an issue with this criteria?**

14 A When you say "this criteria" you mean these two questions
 15 and answer series you pointed me to or Mr. McGuire's list
 16 of the three criteria?

17 Because according to what Mr. McGuire says he thinks
 18 that a tracker with an RSM is less deplorable than
 19 putting things into base rates. So I don't see how these
 20 two question and answers really jive with my saying well,
 21 the three criteria don't address the essential issue, and
 22 therefore Mr. McGuire rejects having a tracker with an
 23 RSM as its preferred solution.

24 **Q Okay. But if the mention of high variance risk is**
 25 **intended to mean something along the lines of in your**

1 **might look like. And on the top of Page 27 you say that**
 2 **the Commission should reject the current proposal and**
 3 **direct the parties continue working to create an**
 4 **effective risk-sharing mechanism; is that correct?**

5 A Correct.

6 **Q But didn't the parties already try this last year and it**
 7 **didn't work out? Were you involved in the last docket?**

8 A I was not.

9 **Q Okay. So if the Commission -- I mean, the Commission has**
 10 **already asked the parties to go and try and resolve this**
 11 **issue of an appropriate risk-sharing mechanism, should it**
 12 **really ask the parties to do the same thing again?**

13 A Rather than giving up on protecting consumers, yes, I
 14 think the Commission should.

15 **Q Okay. If the Commission approved one of the proposed**
 16 **risk-sharing mechanisms in this docket, but required a**
 17 **reevaluation of Schedule 111 in PSE's next general rate**
 18 **case, would that give Public Counsel time to flesh out**
 19 **the general idea that you presented in your cross**
 20 **answering testimony?**

21 A So I think as I state, you know, we have two years before
 22 the next compliance cycle, if I'm counting correctly.
 23 PSE has applied for new rates for 2025 and 2026,
 24 presumably in 2026 they will apply for 2027 and 2028, an
 25 RSM should put in place for the next compliance period

1 **testimony when you say that something is difficult to**
 2 **forecast, if those things are the same then your**
 3 **criticism that Commission Staff's criteria doesn't fit**
 4 **the circumstance wouldn't be accurate anymore, would it?**

5 A No, not at all.

6 **Q Okay. So with understanding that, you know, high**
 7 **variance risk is --is -- entails that something is**
 8 **difficult to forecast, would you say that you still have**
 9 **a general issue with Staff's proposed criteria?**

10 A Yes, because the way he has framed them does not make
 11 that explicit.

12 **Q Okay. But if it were explicit, would you still have an**
 13 **issue with it?**

14 A By it you mean his criteria?

15 **Q Yes.**

16 A I mean, I suppose that it depends on how it was -- how it
 17 was framed. My focus in this case was on the issue how
 18 well things can be forecast. I think fixing that in this
 19 criteria would be a step forward.

20 **Q Okay. So could you turn back to your rebuttal testimony**
 21 **on Page 20, and let me know when you are there. I**
 22 **apologize. Sorry. Page 25 to 27.**

23 A Yes.

24 **Q All right. Here in your testimony you lay out a general**
 25 **idea of what you believe a proper risk-sharing mechanism**

1 which starts again, I believe, in 2027. I think that it
 2 would be -- this is my own personal opinion, not speaking
 3 for Public Counsel necessarily, I think that discussion
 4 of an appropriate RSM would be useful to see if the
 5 parties can come to some agreement before PSE files its
 6 2026 -- given the likely number of other issues that will
 7 be on their docket, in that docket.

8 **Q So in between the end of this case and the next general**
 9 **case or the next case where this risk-sharing mechanism**
 10 **would be considered, is your opinion that it would be**
 11 **better to have no risk-sharing mechanism, or to approve**
 12 **one of the risk-sharing mechanisms that's been proposed**
 13 **in this case?**

14 A As I stated in my testimony, none of the risk-sharing
 15 mechanisms proposed in this case are effective for
 16 protecting consumers. So the Commission might go ahead
 17 and approve one, but there really -- in terms of
 18 protecting consumers, there's nothing behind them. The
 19 ability for PSE's risk-sharing mechanism to actually
 20 result in anything are basically zero.

21 **Q So your position is -- Sorry. Go ahead.**

22 A So I think the thing -- what I personally would worry
 23 about, if the Commission says, well, we don't have one
 24 that we like in front of us but let's approve something
 25 just so we have one is the incumbency of that

1 risk-sharing mechanism becomes difficult to overcome,
 2 even though, again, none of the ones proposed are going
 3 to be effective at protecting consumers.
 4 MR. CALLAGHAN: Okay. Thank you. No
 5 further questions, Your Honor.
 6 JUDGE BONFRISCO: Any redirect from
 7 Public Counsel?
 8 MR. O'NEILL: I do have a few
 9 questions.
 10
 11 REDIRECT EXAMINATION
 12 BY MR. O'NEILL:
 13 **Q I will start where Mr. Callaghan ended, which is on the**
 14 **issue of timing whether or not there should be something**
 15 **approved today.**
 16 **Are you aware of the brief we issued, the policy on**
 17 **the CCA that the Commission issued briefly this summer**
 18 **and then recalled?**
 19 A I am.
 20 **Q Do you recall what that brief policy stated about this**
 21 **proceeding in relation to how it would help set policy?**
 22 A I'm afraid I don't.
 23 **Q Okay. They said they were going to defer the decision of**
 24 **a risk-sharing mechanism to this docket. I am going to**
 25 **ask you to assume that's true.**

1 I guess that's what I trying to mean by the incumbency
 2 being adopted of any risk-sharing mechanism. Once it's
 3 adopted are there potential arenas where the risk-sharing
 4 mechanism is adopted will undoubtedly refer to this
 5 docket, so I think it's vital that the Commission not
 6 adopt an ineffective risk-sharing mechanism.
 7 **Q (By Mr. O'Neill) Okay. The last of my questions for you**
 8 **have to do with Mr. Nash's questions about the**
 9 **forecastability and the high variance cost that Mr.**
 10 **McGuire testified about. You and I have spent how many**
 11 **hours this year addressing the difficulty of forecasting**
 12 **market costs? Do you know how many hours we have spent?**
 13 A Hundreds, I would say.
 14 **Q How capable would you be in forecasting the CCA market**
 15 **costs in the next six months?**
 16 A I'd find it very difficult. I mean, it's always possible
 17 to put together a forecast, but the accuracy of that
 18 forecast is likely to be quite low. And so I don't -- I
 19 wouldn't have much faith in my ability to forecast it.
 20 Again, it's the old story of if I could forecast those
 21 costs I would probably be somewhere else.
 22 **Q Are you aware of anyone who has the ability for this**
 23 **market, for the CCA allowance market, that would be able**
 24 **to accurately forecast the costs until 2027 at the end of**
 25 **the first compliance period?**

1 MS. BARNETT: Objection. Could you
 2 restate what -- I'm sorry. I lost track of what you are
 3 talking about.
 4 MR. O'NEILL: The policy statement
 5 deferred the issue of a risk-sharing mechanism that --
 6 MS. BARNETT: The policy statement
 7 that doesn't exist?
 8 MR. O'NEILL: That was briefly issued,
 9 yes.
 10 MS. BARNETT: Yes, why are we -- I
 11 object to testimony regarding a policy statement that
 12 doesn't exist.
 13 MR. O'NEILL: I -- well, I will let
 14 the Commission.
 15 JUDGE BONFRISCO: If you could
 16 rephrase what you were trying to address.
 17 MR. O'NEILL: Sure. The question I
 18 want to ask is, if this docket is going to be a model for
 19 other dockets, how important is it we get it right in
 20 this docket, get an appropriate mechanism, and that's the
 21 question I want to ask.
 22 JUDGE BONFRISCO: I am going to
 23 overrule the objection. You can go ahead and answer, Mr.
 24 Earle.
 25 THE WITNESS: Thank you, Your Honor.

1 A No. No. I'm not aware of any models out there. And
 2 part of the issue is even for California the models are
 3 that -- could attempt this are economy wide models, and
 4 these models are very, very different from the sort of
 5 models that is used for power forecast modeling.
 6 Power forecast modeling goes back longer than I have
 7 been around. It goes back to the '50s and '60s. And the
 8 technique and the knowledge about how they act, and the
 9 knowledge about how power corresponds very, very deep.
 10 In contrast for CCA allowances, particularly for
 11 Washington but also California, the models are very crude
 12 because it's what they have to do is they have to look
 13 at -- and I apologize for the terminology -- they have to
 14 look at general equilibrium models of the whole economy
 15 because Washington and California have economy wide
 16 allowance regimes, so it's very difficult. And I don't
 17 think honestly there are any good models out there that
 18 provide an acceptable variance for allowance costs.
 19 **Q And is it possible in the future that we will come up**
 20 **with models that would allow us to forecast allowance**
 21 **costs?**
 22 A So I think models can get better, whether there will be
 23 an ability to forecast them as accurately in terms of
 24 operations and maintenance costs or other things -- or
 25 other things like that that goes to base rates, I would

1 be surprised.
 2 And as an analogy, if you consider fuel costs, we
 3 look at fuel costs to go out one or two years and we know
 4 they are going to be off. Sometimes we are surprised
 5 about how much they are off. This is why the utilities
 6 when it comes to power forecasts say we will look at
 7 going two years forward, but the year before as late as
 8 we can we want to update, and still those forecasts are
 9 off.
 10 Well, here we are talking about things that are
 11 natural gas prices and we are talking about looking out
 12 five to six years, which nobody with a straight face
 13 would suggest we do that with fuel costs.
 14 **Q So I want to -- in terms of what is possible today, is it**
 15 **your opinion -- what is your opinion about whether it is**
 16 **possible to forecast costs that are accurately enough for**
 17 **it to be productive to put them into rates?**
 18 A I don't think it's possible at all.
 19 MR. O'NEILL: Nothing further.
 20 JUDGE BONFRISCO: I just want to take
 21 a quick poll. I know that Joint Environmental Advocates
 22 also reserved 20 minutes to examine Mr. Earle, and it
 23 looks like we do have two other witnesses after that, so
 24 do we want to proceed or -- I kind of want to get a pulse
 25 from the room as far as where we are for time.

1 **prudent purchase and sale of allowances. Could you**
 2 **please briefly summarize your response to that question?**
 3 A Sure. So the issue with that proposed RSM in their
 4 interim primary or in their secondary recommendation,
 5 which is an adaptation of PSE's own proposal, the problem
 6 is that if you take average prices over time it would
 7 take incredibly almost unbelievably egregious behavior
 8 for the proposed limits of 75 percent and 97.5 percent to
 9 have an effect.
 10 And to show this, I did the Monte Carlo simulation
 11 where basically for just the year 2003, picked a number
 12 of random trading days with some equal to PSE and said
 13 okay, this is a blindfolded moneys throwing a dart at a
 14 dart board, and in this instance you would expect some of
 15 the outcomes to be very bad, well above the price, the
 16 average market price, and you would expect other of the
 17 options to be much lower than market price, and the
 18 distribution of that follows along distribution.
 19 It turns out that while given the market prices and
 20 given the number of times they are trading on random
 21 days, only .3 percent of the time is the 75 percentile
 22 exceeded, and none of the time is it exceeded -- does it
 23 exceed the 97.5 percent.
 24 So in other words, they only kick in if PSE's
 25 purchase of allowances is worse than 99.7 percent of

1 COMMISSIONER RENDAHL: I would
 2 appreciate a short break, if possible.
 3 JUDGE BONFRISCO: Okay. So we will
 4 take like a quick five-minute break and then we will
 5 start back up and have Joint Environmental Advocates
 6 continue with this witness and then we will proceed from
 7 there. Thank you.
 8 (Recess 11:50 a.m. to
 9 11:57 a.m.)
 10
 11 JUDGE BONFRISCO: We are back on the
 12 record. Mr. Earle, thank you. You may proceed with your
 13 examination of Mr. Earle.
 14
 15 CROSS-EXAMINATION
 16 BY MS. GRAVOTTA:
 17 **Q Good morning, Dr. Earle.**
 18 A Good morning, Ms. Gravotta.
 19 **Q I have some questions for you about your testimony on**
 20 **risk-sharing models. The first topic is your analysis**
 21 **using a Monte Carlo simulation. Could you turn to your**
 22 **testimony at Page 17?**
 23 A I'm there.
 24 **Q So you say the Staff's proposed risk-sharing mechanism**
 25 **does not provide reasonable incentives to the company for**

1 blindfolded monkeys. And I think a reasonable standard
 2 would say, you know, they should be better than a lot of
 3 the monkeys rather than better than almost none of them.
 4 So that's the point, if that answers your question.
 5 **Q Thank you. Just one quick clarification. I think you**
 6 **said in the year 2003, did you mean the year 2023?**
 7 A Yes. Thank you.
 8 **Q So you mentioned a Monte Carlo analysis. Can you explain**
 9 **what a Monte Carlo simulation is?**
 10 A Sure. The idea is very simple. You have a hypothesis
 11 and you test it by choosing random cases. And this
 12 technique is widely used, and the hypothesis being tested
 13 here is well, are the 75th and 97.5 percentiles of the
 14 market an effective incentive for PSE?
 15 Well, I don't know how PSE is going to trade, but I
 16 say if we trade at random, how much of the time do we
 17 violate the 75 percent and 97.5 percent? Presumably, PSE
 18 is not going to trade at random, but if we do something
 19 worse than PSE would ever do, how would it turn out?
 20 Well it turns out that basically we wouldn't expect PSE
 21 to violate the 75 percent or 97.5 percent at all.
 22 **Q So do you know whether PSE's proposed risk-sharing model**
 23 **uses the same percentile threshold to trigger risk**
 24 **sharing as that proposal?**
 25 A My understanding is that that proposal -- that Staff

1 basically adopt PSE's proposal with a new earnings cap.
 2 And in the case of the primary proposal they say let's
 3 use PSE's theme just for two years to the next rate case.
 4 **Q Does that mean you can apply the same Monte Carlo**
 5 **analysis to PSE's risk-sharing mechanism?**
 6 A Absolutely. Absolutely. And the fact is that as you --
 7 if you look at what's likely to happen in a whole
 8 compliance period, so the compliance period plus the ten
 9 months of true up, you are going to have more trading.
 10 And so the percentages go down even more than in this one
 11 year 2023 calculation I did.
 12 **Q So based on your analysis using the Monte Carlo**
 13 **simulation for 2023, and now based on what you said about**
 14 **the average over the four-year compliance period, do you**
 15 **expect PSE to bear risk under Staff's or PSE's sharing**
 16 **mechanism?**
 17 A I don't expect they would bear any risk at all.
 18 **Q Okay. Thank you. So I move on to our second topic,**
 19 **which is how you distribute allowance price data to**
 20 **establish sharing bands. If you could please refer to**
 21 **your technical note on the use of normal distribution,**
 22 **and I believe it's RLE-4C.**
 23 A Yes, I'm there.
 24 **Q If you could turn to Page 2. Actually, before you turn**
 25 **to Page 2, could you just summarize your testimony**

1 **Q Thank you. So on Page 2, Footnote 3, you referenced the**
 2 **Shapiro Wealth and D'Agostino Pearson test for normality,**
 3 **can you give a brief description of these tests?**
 4 A Sure. So the normal distribution is basically and I
 5 think I described it in Footnote 4, is completely
 6 determined by its mean or average and variance. Then you
 7 plug those into the formula.
 8 So the Shapiro Wealth says well, if it's a normal
 9 distribution then the skew of the distribution should be
 10 zero. That is, if you look at the graph on Page 1 it's
 11 completely symmetrical. Skew just means something to the
 12 left or right.
 13 So what the Shapiro Wealth test does is it looks at
 14 the skew units of it and it says is it reasonable that
 15 from the samples we have a skew of this amount and it
 16 still be normal distribution. And conclusion in this
 17 case is no, you reject the hypothesis that it's a normal
 18 distribution.
 19 The D'Agostino Pearson test for normality is a
 20 little bit different. Rather than looking at skewness it
 21 looks at the fatness of the tail. So the tails on normal
 22 distribution are not really fat and they are not really
 23 thin, just right. And the pretiosus of a normal
 24 distribution is three, and so essentially you go through
 25 a similar procedure with D'Agostino Pearson, and you say

1 **contained in this exhibit?**
 2 A Sure. It's a technical point, but PSE's proposed, Staff
 3 adopted this as well, to use the model allowance prices
 4 within normal distribution. And basically this is
 5 given allowance prices so far and it appears to be in
 6 error, and given the way allowance prices are likely to
 7 evolve given what we know about commodity prices, that's
 8 also an error.
 9 And so the point of the this is to say well, if you
 10 adopt one of these themes they need to corrected from use
 11 of the normal distribution to model the allowance prices,
 12 instead what they need to do is -- a better approach is
 13 to use the actual empirical percentiles from what
 14 actually happened in the market.
 15 And I think that maybe the easiest way to get this,
 16 and I did other statistical tests as well, is you --
 17 confidential figure on Page 2, but it turns out that if
 18 you calculate the bands using the empirical percentile
 19 you get something very different from if you assume a
 20 normal distribution, which I think in one case I think it
 21 was a 97.5 percent, if you use the -- if it exceeds any
 22 of the prices that actually occurred in the market, so
 23 it's a technical error.
 24 If one of the proposals is adopted then -- against
 25 my recommendation, then it needs to be corrected.

1 okay, what is the pretiosus of the normal distribution,
 2 and it's three, and you say well, what is the pretiosus
 3 of this other sample and is it reasonably different from
 4 thee to get the hypothesis for normal. In this case, it
 5 fails the test. Again, Figure 2 on Page 2 you can
 6 eyeball it and see that it doesn't, but I did the formal
 7 test as well.
 8 **Q Okay. Thank you. So just to clarify, you are saying you**
 9 **ran the Shapiro test and the D'Agostino Pearson test and**
 10 **a visual test on the distribution of allowance price**
 11 **data, correct?**
 12 A That's correct. And all of that is in my work papers.
 13 **Q So based on the analysis you conducted in this testimony**
 14 **did you find evidence, any evidence that the allowance**
 15 **data was normally distributed?**
 16 A I did not.
 17 **Q So should normal be used if there is insufficient**
 18 **evidence that the distribution of the underlying data is**
 19 **normal?**
 20 A No, because that will result in a distortion of the
 21 calculation of whatever percentile levels you want to
 22 use.
 23 **Q So now I will turn your attention to Public Counsel's --**
 24 **or rather your responses to JEA's data requests. And I**
 25 **will direct you first to the response of data request**

1 **number two.**
 2 A I'm there.
 3 **Q So if allowance data has an --**
 4 JUDGE BONFRISCO: What exhibit number
 5 is this?
 6 MS. GRAVOTTA: Sorry about that. The
 7 way I see it titled is PCDR-23.
 8 MR. O'NEILL: I believe it's RLE-9X.
 9 MS. GRAVOTTA: Oh, I apologize.
 10 **Q (By Ms. Gravotta) So did you prepare the responses to**
 11 **that data request?**
 12 A I did.
 13 **Q So I was asking if allowance data has a nonnormal**
 14 **distribution, would it be more accurate to use the direct**
 15 **calculation of percentiles embedded in normal D scores to**
 16 **calculate the percentiles of its nonnormal distribution?**
 17 A Yes.
 18 **Q And then if I can return you to your response to data**
 19 **request three, which is contained in the same exhibit.**
 20 A I'm there.
 21 **Q I'm sorry. It's not the same exhibit, it's RLE-9X, my**
 22 **apologies. And I apologize if you hear background noise**
 23 **there's sirens going off.**
 24 **So you were asked about replacing the 95.6**
 25 **percentile calculation in JEA's Exhibit WD-3 with the**

1 admitted. That was partially why I did the follow-up to
 2 file that from a prior correspondence yesterday.
 3 MS. GRAVOTTA: Thank you, very much.
 4 **Q (By Ms. Gravotta) So, Dr. Earle, turning to our third**
 5 **and final topic on the role of a risk-sharing mechanism**
 6 **in this docket, so I will ask you to turn back to your**
 7 **testimony to Page 6.**
 8 A I'm there.
 9 **Q So please tell me the purpose of Public Counsel's**
 10 **suggested approach to a risk-sharing mechanism.**
 11 A The purpose of Public Counsel's approach is to protect
 12 consumers, or to put it another way, to gave PSE the
 13 ability to -- to give Puget Sound Energy the incentive to
 14 purchase in trade allowances in a prudent manner, one
 15 that is beneficial to the consumers.
 16 **Q Would preventing PSE from acquiring high ceiling units**
 17 **affect how much PSE spends overall in purchasing**
 18 **allowances?**
 19 A It might. It's an interesting question. I mean, I'm an
 20 economist on the one hand, on the other hand, on the
 21 third hand. If all things being equal and they acquired
 22 allowances more cheaply than pricing ceiling units that
 23 would be beneficial.
 24 There may be a larger question here. And as I tried
 25 to frame it with Mr. Callaghan, there's a P issue, a

1 **calculations that you used. Given the evidence of the**
 2 **record on the nonnormal distribution of allowance data**
 3 **would that approach be more appropriate?**
 4 A It would.
 5 **Q And why is that?**
 6 A For the same reasons I have stated. The data shows a
 7 very nonnormal distribution. Using the empirical
 8 percentiles has a different result from using the normal
 9 D scores. And this is important because you will end up
 10 having cutoffs that are inaccurate in the sense of you
 11 won't actually be matching.
 12 Another way to think about this is the normal -- if
 13 the allowance prices were normally distributed the
 14 percentiles that you took empirically should be close to
 15 normal D scores, but they are not. So that's sort of
 16 another piece of evidence we are not really dealing with
 17 with normally distributed data.
 18 MS. GRAVOTTA: Thank you very much.
 19 Before I proceed with the last topic of questioning, I
 20 have a procedural question for the ALJ.
 21 JUDGE BONFRISCO: Yes.
 22 MS. GRAVOTTA: I referenced the
 23 cross-examination exhibits, do I need to formally admit
 24 these into the record or are they already admitted?
 25 JUDGE BONFRISCO: They are already

1 price issue, and a Q issue, a quantity issue. And what
 2 Public Counsel is focused on is price. What we would
 3 like to see in the average price paying for allowances to
 4 be within the zone of reasonableness, where above that
 5 zone there would be penalties and below that zone PSE
 6 would get some incentives.
 7 And this is something that I believe Mr. Kuzma
 8 agrees that is under the control of PSE. PSE can't
 9 control what market prices will be, but PSE can control
 10 its trading, what it's average price looks like compared
 11 to the market.
 12 The true question on the other hand, I think, is a
 13 difference issue, and that is how much -- how many
 14 allowances are they actually out buying.
 15 **Q Can you elaborate on how PSE would purchase these**
 16 **different quantities of allowances depending on whether**
 17 **it was purchasing them at a price ceiling unit or at a**
 18 **lower that price ceiling unit?**
 19 A So the quantity they need is going to depend on
 20 consumption. And, you know, that's going to depend on a
 21 number of factors, including weather, and including what
 22 they do to address the consumption itself.
 23 **Q So just to recap, the way that Q would be affected in**
 24 **this scenario is based on PSE's consumption of natural**
 25 **gas, correct?**

1 A Correct, or their rate payers' consumption, sure.
 2 **Q Yes. And so if we are focusing on the P part of the**
 3 **equation, would it be correct to say that limiting the**
 4 **purchase of price ceiling units would reduce the P in the**
 5 **equation?**
 6 A So it's a complicated question, so if you will allow me.
 7 If you say I can't -- we are not going to let you
 8 purchase price ceiling units and, you know, there is some
 9 penalty for that, and there's a penalty for noncompliance
 10 that Ecology imposes, then that would change their
 11 behavior.
 12 But I want to be -- I'm sorry to be picky, but I
 13 want to be careful for the outlying -- what the different
 14 cases, you know, could be in what a -- what a theme of
 15 penalties might look like.
 16 **Q I understand. I would like to remove the question of**
 17 **penalties from this. I'm specifically asking whether the**
 18 **purchase of price ceiling units affects the P in this**
 19 **equation?**
 20 A Sure.
 21 **Q Okay. And would you agree that reducing how much PSE**
 22 **spends overall when purchasing allowances in turn affects**
 23 **how much customers are charged?**
 24 A Sure.
 25 **Q Okay. Thank you. So now going to Lines 13 to 16 of Page**

1 of all the allowances in 2030 could be quite significant,
 2 and so therefore cost control is appropriate. And I'm
 3 trying to here motivate the discussion of why an RSM is
 4 important and why it's needed.
 5 **Q I understand. So to be clear, the percentages you**
 6 **referred to, a ten percent reduction in allowance costs**
 7 **resulting in potentially a five percent reduction in**
 8 **customer bill costs is for the year 2030?**
 9 A It's for the year 2030, and it's talking about -- okay,
 10 they have all sorts of things that go into their rates,
 11 including allowance costs, and so this is the overall
 12 rate not just allowance costs in terms of reduction.
 13 **Q And then at Lines 6 to 7 on that same page you say that**
 14 **PSE's -- based on PSE's 2023 IRP the cost of purchasing**
 15 **emissions by 2030 could increase residential customer**
 16 **bills' by 18 to 33 percent, correct?**
 17 A Correct.
 18 **Q Is that the increase that would occur without a**
 19 **risk-sharing mechanism in place?**
 20 A So this is -- this is basically saying well, again, in
 21 2030 they need about five million allowances, saying
 22 okay, what's the price of those allowances? This
 23 calculation was done a bit differently. This was looking
 24 at their sample bill data, and this is all in my work
 25 papers, but basically take their sample bill, I forget

1 **6 of your testimony, can you explain how a risk-sharing**
 2 **mechanism reduces overall allowance costs by ten percent**
 3 **could result in a five percent reduction in customer**
 4 **bills based on current rates?**
 5 A This was a projection that I developed in my work papers.
 6 And the basic idea is looking out at 2030 we are -- the
 7 exposure may be as much as five million metric tons for
 8 PSE, and looking at what that might cost in terms of I
 9 think I sued the changing projection of prices there.
 10 If you do the arithmetic then it turns out that you
 11 have a significant reduction on the rates residential
 12 customers pay.
 13 **Q And I would like to clarify that statement a bit. So do**
 14 **you mean that current customers bills would be five**
 15 **percent lower if PSE's overall allowance cost were**
 16 **reduced by ten percent this year?**
 17 A No. No. This is really a projection looking forward in
 18 2030, looking at the fact that well, they are confining
 19 all their allowances to -- all the no cost allowances for
 20 sale. The assumption here is that the proceeds of those
 21 no cost allowances don't go directly to customers but
 22 they are used for -- they don't go to the general
 23 customer base, but they go to things like low income,
 24 electrification pilots, et cetera.
 25 It's really looking forward the cost of allowances,

1 how many therms they attribute to a typical bill, but
 2 there's so much emissions coming out at a projected cost,
 3 and then we use these numbers and this is what we end up
 4 with, we end up with the 18 to 33 percent increase.
 5 **Q So would a risk-sharing mechanism that reduces overall**
 6 **allowance costs by ten percent theoretically result in an**
 7 **increase to customer bills of 13 to 28 percent by 2030?**
 8 A Maybe. I haven't done the analysis that way, so it's --
 9 what you are saying seems reasonable, but I didn't do the
 10 analysis quite that way.
 11 But clearly, if you reduce the amount then you are
 12 going to benefit -- you are going to benefit customer
 13 bills.
 14 MS. GRAVOTTA: Thank you. I have
 15 nothing further, Dr. Earle.
 16 THE WITNESS: Thank you.
 17 JUDGE BONFRISCO: Thank you, Ms.
 18 Gravotta.
 19 MR. O'NEILL: I have no redirect.
 20 JUDGE BONFRISCO: Any other questions
 21 from any of the other parties? Okay. Great. With that
 22 then it looks like our next -- oh, Mr. Earle, you may be
 23 excused. My apologies.
 24 THE WITNESS: Thank you, Your Honor.
 25 JUDGE BONFRISCO: It looks like the

1 next witness we have is Christopher McGuire, so Mr.
2 Callaghan, if you could call your next witness.

3
4 CHRISTOPHER MCGUIRE, witness herein, being
5 first duly sworn on oath,
6 was examined and testified
7 as follows:

8
9 THE WITNESS: I do.
10 JUDGE BONFRISCO: Okay. Thank you.

11
12 CROSS-EXAMINATION

13 BY MR. O'NEILL:

14 **Q Good afternoon, Mr. McGuire. Were you in the room to**
15 **hear Mr. Callaghan's opening statement?**

16 A I was.

17 **Q He described what he called a misapprehension by the**
18 **parties about Staff's proposal, and I want to be really**
19 **clear here about your primary proposal. Are you**
20 **proposing that in this document the Commission embed CCA**
21 **costs and rates?**

22 A No, that's not my recommendation, not in this proceeding.
23 What I'm recommending is that the Commission adopt
24 criteria for determining whether a cost recovery
25 mechanism or a tracker is appropriate, and apply those

1 **Q If it is not possible to forecast accurately CCA costs,**
2 **would you concede that that would meet criteria three of**
3 **your variance risk criteria for the need for a tracker?**

4 A Well, first, it has not been shown on the record here
5 that CCA compliance costs are so difficult to forecast
6 that including forecasted compliance costs and base rates
7 would be damaging to the company.

8 But if you are asking me to answer the hypothetical
9 question that it can be shown that -- or if it is shown
10 that it is prohibitively difficult to forecast CCA
11 compliance costs and that those costs are largely outside
12 of the control of the company then, yes, in that scenario
13 the cost would meet Staff's proposed criteria, but,
14 again, that hasn't been shown on the record in this
15 docket.

16 **Q The risks that you are referring to in the variance risk**
17 **here, being able to forecast versus actual, those apply**
18 **to consumers as well as to the company, correct?**

19 A Not necessarily, no. That's a complicated question to
20 answer because if you are -- when we are talking about a
21 utility's exposure to risk and the relationship of that
22 risk to the utility's return on equity and, you know, how
23 changes in the utility's risk profile would impact return
24 on equity, we are talking about upside price risk
25 exclusively, the risk is that the utility's cost will

1 criteria in this case. And if it does so, it will find
2 that the criteria have not been met, but I what I am
3 saying is that because those criteria have not been met,
4 the Commission should order the company to, in its next
5 general rate case, embed CCA compliance costs in base
6 rates, but give the company an opportunity to make the
7 case that the costs in question do, in fact, meet the
8 criteria that the Commission adopts.

9 And it is entirely possible that the cost in
10 question will meet Staff's proposed criterion three, the
11 criterion that states that if costs are -- if the
12 variance risk is so high that the company is exposed to
13 an excessive level of risk, such that its ability to earn
14 its authorized return will be substantially damaged then
15 they can make the case in that case, but they haven't
16 made the case here.

17 **Q I want to be crystal clear. Are you -- when you say next**
18 **rate case, are you talking about the rate case that's**
19 **currently pending that's going to go to hearing in less**
20 **than a month?**

21 A No, I am talking about the next general rate case that
22 the company files.

23 **Q Okay. You also heard the testimony about the variance**
24 **risk and its definition with Mr. Earle?**

25 A I did.

1 exceed the level of cost that is in rates, but if you are
2 asking whether -- if costs are embedded in base rates,
3 whether the variance risk is a risk that customers bear,
4 I would say the answer to that is no.

5 **Q Well, let's be a little more practical then. In 2023,**
6 **CCA auction prices start a \$48 and they rose to \$63.03,**
7 **are you aware of that?**

8 A I'm not aware of the specifics, no.

9 **Q Roughly, subject to check, would you agree with me that**
10 **the prices started 48 and went up -- 45 and went up to**
11 **63?**

12 A Yes.

13 **Q If the company had forecasted its costs for base rates in**
14 **2023 based off of those costs, and then as actually**
15 **happened in 2024 costs dropped to \$25, less than half,**
16 **that would mean the company would over collect, correct?**

17 A I wouldn't characterize it as over collecting. I would
18 characterize it as the utility's costs came in below
19 costs that were embedded in rates.

20 And I need to point out that that's not necessarily
21 in and of itself problematic. Affording a utility an
22 opportunity to improve its earnings through cost control,
23 through the desire to minimize its cost has long term
24 benefits to rate payers.

25 **Q Do you think that PSE was behind the drop from \$60 to \$25**

1 in allowance prices?

2 A Can you explain what you mean by behind the drop?

3 **Q You said that the company controls costs. Do you think**
 4 **that the company controlled allowance costs from \$63 to**
 5 **\$25 for allowance?**

6 A You are equating costs and price here. I am making the
 7 claim that the utility does have some ability to control
 8 its costs. And if you are asking whether the utility has
 9 some control to influence the price of allowances, no, it
 10 can't influence the market price of allowances, but it
 11 can choose when to purchase allowances, and it can
 12 develop a strategy for when to purchase allowances, so no
 13 I wouldn't say the utility is behind the drop.

14 **Q But to go back to the example we just gave, if they had**
 15 **based forecast based on the 2023 prices and began**
 16 **collecting those costs in rates, under your proposal when**
 17 **the price dropped to \$25 the consumers wouldn't get their**
 18 **money back, the company would keep that money, right?**

19 A So let's, I guess, just cut to the chase here. Your --
 20 Public Counsel's primary concern is that if forecasted
 21 costs were embedded in base rates, and those costs didn't
 22 cost in reality, came in far below the costs embedded in
 23 rates, that rate payers would be paying more than they
 24 needed to, or they would be overpaying for PSE's
 25 compliance with the CCA. However, Public Counsel's --

1 To answer your question of would customers get that
 2 money back if prices plummeted. I guess it depends on
 3 the degree to which prices plummet. If it is a modest
 4 decrease in prices then there may be no reason to make
 5 customers whole. If it is a large decrease in price then
 6 there is always the opportunity to file a petition for
 7 deferred accounting. Either the company could file such
 8 a petition if it felt that, you know, the increase in
 9 costs were material enough to be impactful to the
 10 utility's earnings, or other interested parties can file
 11 a petition for deferred accounting. And if the
 12 Commission grants that petition the dollars that were
 13 overpaid by rate payers would be set aside in an account
 14 and then could be passed back to the rate payers later
 15 on, so, yes, it's possible that rate payers can recoup
 16 some of those overpaid funds, but it might not always be
 17 necessary, though.

18 **Q Looking forward, do you know what impact the election in**
 19 **less than a month will have on the CCA allowance cost**
 20 **going forward?**

21 A No.

22 **Q Do you know what impact the possible joinder -- assuming**
 23 **it survives, the possible joinder between the CCA markets**
 24 **in California and Canada and Washington will have on**
 25 **prices?**

1 **Q If I could interrupt you here. I appreciate that you are**
 2 **trying to put yourself in my shoes, my specific question**
 3 **was, under your proposal would they get that money back?**

4 A They could. Yeah, it's possible they could. And if you
 5 let me explain.

6 **Q Please do.**

7 A First, I want to finish what I was just saying about the
 8 concern about the customers paying too much for CCA
 9 compliance. It seems to me that Public Counsel's
 10 position is that rate payers should be shielded from the
 11 risk that they pay too much for CCA compliance. The
 12 problem is that when you attempt to shield customers from
 13 downside price risks, you shield customers from paying
 14 too much for CCA compliance, what you are doing when you
 15 move those costs into a cost recovery mechanism or
 16 tracker, is that you are exposing customers then to the
 17 upside price risk that they weren't exposed to before,
 18 and they -- customers will pay for the increases in price
 19 that they would not have paid were the costs embedded in
 20 base rates, and it exposes rate payers to a rate
 21 instability that they wouldn't be exposed to otherwise.
 22 So I do find it -- I do find Public Counsel's position a
 23 little peculiar because it seems willing to -- it seems
 24 willing to shift upside price risks by the rate payers,
 25 and also create rate instability.

1 A No.

2 **Q You are aware that part of that linkage issue is that the**
 3 **compliance period in California is different than in**
 4 **Washington, three years versus four, did you know that?**

5 A No.

6 **Q Would that have an impact on prices if we changed the**
 7 **compliance period?**

8 A I don't know.

9 **Q Now I want to focus a little bit on the secondary**
 10 **proposal, which is to adopt the proposal from PSE.**

11 **As part of your review, did you review the actual**
 12 **prices paid by PSE in 2023 for allowance costs?**

13 **And I don't want you to tell me what the number is**
 14 **because I think that's protected information, I just want**
 15 **to know if you reviewed that?**

16 A No, I was not Staff's witness assigned to review PSE's
 17 proposed risk-sharing mechanism. I was not the witness
 18 that put forward Staff's proposed mechanism. I did not
 19 do that portion of the review.

20 **Q Do you know whether any of the purchases in 2023 would**
 21 **have met the 75 percentile proposal by the company?**

22 A I don't know. I did not do that analysis.

23 **Q Do you know who did?**

24 A Yeah, the witness Kody McConnell. I don't know if
 25 Staff's witness McConnell performed the specific analysis

1 that you are describing right now, the Staff's witness
2 McConnell was the witness assigned to do the review and
3 analysis of the risk-sharing mechanism.

4 MR. O'NEILL: Okay. That's all the
5 questions I have. Thank you.

6 JUDGE BONFRISCO: Any redirect from
7 Staff?

8 MR. CALLAGHAN: Very briefly, Your
9 Honor.

10 JUDGE BONFRISCO: Okay.

11 REDIRECT EXAMINATION

12 BY MR. CALLAGHAN:

13 **Q Public Counsel was asking you questions related to if CCA**
14 **costs were in base rates the potential for the company to**
15 **over recover, do you remember that?**

16 A I do.

17 **Q So under your proposed criteria, CCA-related costs would**
18 **on be in base rates if the Commission reviewed these**
19 **costs, reviewed a tracking proposal, and concluded that**
20 **it did not meet any of Staff's proposed criteria for**
21 **accepting a tracking mechanism, correct?**

22 A That's correct.

23 **Q So the circumstance that you were talking about where**
24 **there might be a deferred accounting petition for under**
25

1 CROSS-EXAMINATION

2 BY MR. O'NEILL:

3 **Q Good afternoon, Mr. Gehrke. Can you hear me?**

4 A Yes, I can.

5 **Q Have you had an opportunity to review Mr. Earle's**
6 **testimony about your proposal?**

7 A Yes, I have.

8 **Q Were you able to adjust your model or analysis in any way**
9 **after receiving the responses from Public Counsel on the**
10 **calculation of the average prices?**

11 A I was able in response to Dr. Earle's testimony, I wasn't
12 able to make changes in response to average prices, but I
13 do agree with Dr. Earle's point on the nonnormal
14 distribution and how to calculate the percentiles, and I
15 found the evidence, the statistical analysis presented by
16 Dr. Earle that I had talked about prior to this hearing
17 to be convincing.

18 So if I was to propose -- my proposal today, I would
19 use a different -- I would use a percentile rather than a
20 normal D score to calculate a percent -- to calculate a
21 risk sharing band.

22 One more thing that I would be open to is Dr. Earle
23 criticized the proposal that Joint Environmental
24 Advocates made around the discontinuous nature of my
25 model, and I think it would be appropriate to -- if

1 **or over recovery of some significant amount, that would**
2 **only be in the case where the Commission previously found**
3 **that CCA costs were -- had a low variance to the extent**
4 **that it could be included in base rates, and that would**
5 **be in the public interest?**

6 A Yes.

7 MR. CALLAGHAN: Okay. No further
8 questions, Your Honor.

9 JUDGE BONFRISCO: Okay. Any questions
10 from any of the other parties? No? Okay.

11 Public Counsel, if you would like to call your next
12 witness. Oh, and you may be excused. My apologies.

13 MR. O'NEILL: Public Counsel calls
14 William Gehrke.

15 JUDGE BONFRISCO: Mr. Gehrke, will you
16 raise your right hand for me?

17
18 WILLIAM GEHRKE, witness herein, being
19 first duly sworn on oath,
20 was examined and testified
21 as follows:

22 THE WITNESS: I do.

23 JUDGE BONFRISCO: Thank you. You may
24 proceed.
25

1 the -- to add another sharing band, for example, from the
2 90th to the 97.5 percentile at a lower percentile, at a
3 lower percentile to address Dr. Earle's concern, but
4 those are the two changes I would make after reviewing
5 Dr. Earle's testimony.

6 **Q Thank you. You actually understood and answered my**
7 **question even if I inartfully phrased it.**

8 **My next line of questions is, your proposal targets**
9 **the highest unit cost allowances, correct?**

10 A Yes.

11 **Q What are the advantages of targeting unit costs rather**
12 **than the average costs?**

13 A So in PSE's last IRP the company presented it plan for
14 complying with the CCA, and it largely relied on
15 allowances to meet its compliance obligations. And if
16 you look at the quantity of allowances that PSE plans to
17 acquire, and the limits that PSE can have to acquire
18 allowances on the auction market, and, in general, how
19 much the cap is protected in decline over time, it's
20 likely that if the current structure would continue PSE
21 would have to rely on price ceiling unit purchases, which
22 are extremely high in cost, or would have to rely on
23 really high cost allowances to comply with CCA given its
24 current utility actions.

25 So if you wanted to discourage price ceiling units

1 and you find that they are the highest short term cost
 2 method of complying with the CCA, if you use a price -- a
 3 unit cost approach you can specifically target those
 4 allowances costs.

5 If you use an average cost, the price ceiling units
 6 are averaged out in the calculation when assessing risks
 7 in the models.

8 **Q When is PSE projected to be having to purchase ceiling
 9 units?**

10 A That wasn't -- the exact time wasn't detailed in the
 11 analysis. I think there's a lot of factors in there.

12 The time that PSE would have to acquire price ceiling
 13 units basically depends on economy wide conditions.
 14 PSE's natural gas operations is not the only covered
 15 entity, and there's a lot of dynamics on that exact
 16 point.

17 **Q How many ceiling units has PSE purchased so far?**

18 A They haven't purchased any ceiling units, to my
 19 knowledge.

20 **Q I guess, do you know when the price control proposal that
 21 you proposed -- like, when you would expect it to begin
 22 to kick in?**

23 A It's a forward looking approach. Price ceiling unit
 24 purchases can only be conducted after the compliance
 25 period is over, so it's impossible for PSE to have

1 JUDGE BONFRISCO: Thank you, Mr.
 2 Gehrke. Does the Staff have any redirect?

3 MR. CALLAGHAN: No, this is Joint
 4 Environmental Advocates' witness.

5 JUDGE BONFRISCO: I'm sorry. I'm
 6 sorry. Does Joint Environmental Advocates have any
 7 redirect? My apologies.

8 MS. GRAVOTTA: Yes, just one question.

9
 10 REDIRECT EXAMINATION

11 BY MS. GRAVOTTA:

12 **Q You spoke about how pricing units, the first opportunity
 13 to purchase them would occur in 2027. And you also spoke
 14 about the importance of providing incentives ahead of
 15 time. So given these two pieces of your testimony, do
 16 you think -- is it your opinion that by providing notice
 17 to PSE ahead of time that it cannot -- it should not be
 18 relying on price ceiling units but begin providing
 19 incentives now?**

20 A Yes. I think what it does is it provides PSE an
 21 incentive to address the quantity of emissions that it
 22 has. I think my model addresses primarily the quantity
 23 of allowances that PSE plans on purchasing in the future,
 24 and how they are going to address the Climate Commitment
 25 Act.

1 purchased price ceiling units at this time. You have to
 2 have the compliance period be finished. PSE would have
 3 to demonstrate that they cannot comply. They don't have
 4 enough allowances to meet their obligations, so to answer
 5 the question on when, I haven't seen an exact time when
 6 they are going to do it.

7 I think one of the core things that the utility
 8 regulatory frame was, is you provide incentives to the
 9 utility ahead of time, and you give them notice on what
 10 they are going to do in the future. And I think putting
 11 it on now early in the compliance period while they are
 12 being subject to CCAs sends a clear signal to PSE that if
 13 they rely on price ceiling units there's going to be
 14 risk-sharing consequences for shareholders on that.

15 **Q But the first compliance period ends in 2027, correct?**

16 A Yes.

17 **Q So the first time you can purchase ceiling units is going
 18 to be in 2027?**

19 A Yes.

20 **Q In the interim between then and now, does your proposal
 21 create any incentive for PSE to keep its allowance
 22 purchase prices low?**

23 A No.

24 MR. O'NEILL: All right. Thank you.
 25 That's all the questions I have.

1 I think other models have expressed the price and
 2 how that interacts and what is the cost customers pay.

3 **Q And one more thing. You noted that the price of
 4 allowances depends on a variety of factors, including
 5 economy wide conditions. Does PSE's purchasing behavior
 6 and need for certain amounts of allowances depend solely
 7 on economy wide factors?**

8 A No. It also depends on the quantity of emissions that
 9 PSE has, and it also -- I would add that as another
 10 factor besides just the economy wide factors. And it
 11 also -- and I think the extension of that is what
 12 decarbonization measures PSE takes in response to the
 13 CCA, and how that -- the quantity of allowances that PSE
 14 will need in the future.

15 MS. GRAVOTTA: Thank you. I have not
 16 further redirect.

17 JUDGE BONFRISCO: Thank you. And
 18 questions from any of the other parties? Okay.
 19 Questions from the bench?

20 CHAIR DANNER: I have a question. I
 21 just want to make sure I understand. What happens if the
 22 company buys allowances above the option ceiling price on
 23 the secondary market? Under your proposal, it looks like
 24 there wouldn't be a penalty.

25 Wouldn't this incentivize the company to buy more

1 expensive allowances from a secondary seller in order to
2 do that to avoid those penalties?

3 THE WITNESS: Thank you for the
4 question, Chair Danner. I think the way you do that is
5 you handle that through a prudence review, and I think
6 you look at the utility's actions when they make the
7 purchase.

8 If I was analyzing a document for the CCA, and I
9 found that PSE projected that the price ceiling unit
10 would be high, would be a set price, let's say an example
11 at 140, and they went out and purchased allowances at
12 that time at 145, I think you would say as a business if
13 they had the opportunity at the end of the compliance
14 period to buy at the price ceiling price at a fixed price
15 and they paid higher than that, you would charge that
16 incremental cost to the shareholders, that 140 to 145,
17 you charge the five dollars to customers and treat it as
18 a price ceiling unit in the model.

19 CHAIR DANNER: All right. Thank you.
20 JUDGE BONFRISCO: Any other questions?
21 No.

22 Okay. I just have a few other housekeeping -- oh,
23 with that, Mr. Gehrke, you may be excused.

24 I just have a few housekeeping items. Mr. Robinson
25 O'Neill, how much time do you think Public Counsel will

1 JUDGE BONFRISCO: And I'm showing the
2 reply briefs, just for the record, are due on November
3 21st.

4 MR. CALLAGHAN: Okay. So I don't
5 imagine for initial briefs we would need more than 20
6 pages.

7 JUDGE BONFRISCO: PSE?

8 MS. BARNETT: I really don't know, but
9 isn't that something in the rules? Isn't there a limit?
10 I think we have a limit of 15?

11 JUDGE BONFRISCO: Yes. You have a
12 limit of 60 for the post hearing -- and for the -- you
13 are right, the reply is 15.

14 MS. BARNETT: So I can't -- I hope I
15 don't need all 60, but I can't guess at how much less
16 than that I would need.

17 JUDGE BONFRISCO: Okay. I guess with
18 that, are there any other questions -- and Public Counsel
19 it sounds like --

20 MR. O'NEILL: I am uninclined to argue
21 for a 60 page limit. I think I suspect that we would
22 need 20 pages would be appropriate.

23 JUDGE BONFRISCO: And what about JEA?

24 MS. GRAVOTTA: I'm of the same opinion
25 of Public Counsel.

1 need to comply with public comments?

2 MR. O'NEILL: So there was some
3 confusion in the notice. That got left out so I had
4 requested until Tuesday, leave the record open until
5 Tuesday so if there are any -- if there was any confusion
6 we could get public comments in until Tuesday next week.
7 And then we intend to file on Friday next week, the 18th.
8 I did get a report and I think there's like 26 comments,
9 something like that. I would have to look and find it,
10 but I think it's manageable.

11 JUDGE BONFRISCO: Okay. So we will
12 put that at October. We want to receive that filing
13 after the 18th. We will just use it as a bench exhibit
14 and file it accordingly in the docket.

15 MR. O'NEILL: Our plan will be to file
16 it as a bench exhibit.

17 JUDGE BONFRISCO: And it's just the
18 one. And as far post hearing briefs, I'm showing those
19 are due on November 7th, 2024. Do the parties have any
20 ideas how many pages you think you might anticipate in
21 the post hearing briefs?

22 MR. CALLAGHAN: Your Honor, I don't
23 imagine we would need more than 20 pages. If my memory
24 serves, the procedural schedule includes initial post
25 hearing briefs and reply briefs.

1 JUDGE BONFRISCO: Okay. Are there any
2 other questions from the parties? Okay. And if there's
3 nothing else to address then today we can be adjourned.
4 Thank you.

5 (Proceedings concluded
6 at 12:58 p.m.)
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

1 STATE OF WASHINGTON) I, Christy Sheppard, CCR, RPR,
2) ss a certified court reporter
3 County of Pierce) in the State of Washington, do
4 hereby certify:

5 That the foregoing proceeding was before me and
6 completed on October 9, 2024, and thereafter was transcribed
7 under my direction; that it is a full, true and complete
8 transcript of the testimony of said witnesses, including all
9 questions, answers, objections, motions and exceptions;

10 That the witness, before examination, was duly sworn by
11 Judge Bonfrisco to testify the truth, the whole truth, and
12 nothing but the truth;

13 That I am not a relative, employee, attorney or counsel
14 of any party to this action or relative or employee of any
15 such attorney or counsel and that I am not financially
16 interested in the said action or the outcome thereof;
17 IN WITNESS WHEREOF, I have hereunto set my signature on
18 October 23, 2024.

19 _____
20 /s/Christy Sheppard, CCR, RPR
21 Certified Court Reporter No. 1932
22 (Certification expires 05/06/25.)
23
24
25

<p>A</p> <p>a.m 47:2 103:10,11 103:12 145:8,9</p> <p>abatement 70:24</p> <p>ability 67:8 69:3 75:12 82:21,24 83:3,7,12 91:20 99:14,17,20 100:10,24 105:8 109:10 123:23 125:13,14 126:5 135:13 139:19 142:19,22 143:23 154:13 161:13 164:7</p> <p>able 57:15 83:10 97:22 98:24 99:12 99:21 127:18 128:4 142:23 162:17 170:8,11 170:12</p> <p>absent 63:1 119:4</p> <p>absolutely 63:14 84:2 148:6,6</p> <p>accelerate 82:10 86:13 87:14,15</p> <p>accelerated 85:4,14</p> <p>accept 59:2</p> <p>acceptable 143:18</p> <p>accepting 168:22</p> <p>access 69:4</p> <p>accompanies 127:20 128:7</p> <p>accomplish 65:4 84:14 87:22</p> <p>account 48:25 66:10 166:13</p> <p>accounted 120:5,15 121:2 122:2</p> <p>accounting 166:7 166:11 168:25</p> <p>accrue 67:22</p> <p>accuracy 142:17</p> <p>accurate 74:23,24 105:17 106:21</p>	<p>108:5 119:6,25 120:3,17 137:4 152:14</p> <p>accurately 58:2,5 142:24 143:23 144:16 162:1</p> <p>achieve 68:16 69:17 84:18,21,22 87:21</p> <p>achieved 64:15</p> <p>acquire 171:17,17 172:12</p> <p>acquired 154:21</p> <p>acquiring 154:16</p> <p>act 56:4,6,13,19,23 57:17 58:24 64:2 64:11,13 66:2 71:8 80:8 84:13 84:23 109:11 143:8 174:25</p> <p>action 180:10,11</p> <p>actions 79:20 105:7 171:24 176:6</p> <p>actively 81:17</p> <p>activities 98:19 101:13,17,18 109:13 121:20 123:2</p> <p>activity 100:19</p> <p>actual 98:8 99:14 100:9 113:18,24 123:9,16,20 126:3 129:3 149:13 162:17 167:11</p> <p>actuals 98:25</p> <p>adaptation 146:5</p> <p>add 67:3 128:10 171:1 175:9</p> <p>added 101:22</p> <p>addition 86:4</p> <p>additional 51:24 58:16 70:5 111:19 116:11</p> <p>additionally 72:2</p> <p>address 49:13 53:1</p>	<p>55:8 63:4,12 64:25 88:25 101:24 118:15 119:24 136:21 141:16 155:22 171:3 174:21,24 179:3</p> <p>addressed 94:10 111:21</p> <p>addresses 135:15 135:16 174:22</p> <p>addressing 48:10 48:11 54:7,19 66:3 108:11 142:11</p> <p>adjourned 179:3</p> <p>adjudicated 91:17</p> <p>adjudication 61:8 61:12,24 63:19</p> <p>adjust 70:16 80:2 170:8</p> <p>adjustment 57:20 75:1 76:7 104:13 104:16,19,22 105:1,3,16,20 106:11,25 108:9 120:21 121:2,7,9 121:18 122:6,7 127:8,14,25</p> <p>Administrative 44:12 47:3</p> <p>admission 49:16</p> <p>admit 49:25 153:23</p> <p>admitted 153:24 154:1</p> <p>adopt 60:14 61:6 88:2 111:24 142:6 148:1 149:10 160:23 167:10</p> <p>adopted 94:13 142:2,3,4 149:3 149:24</p> <p>adopting 61:11</p> <p>adoption 67:5 82:10</p>	<p>adopts 62:18 69:10 161:8</p> <p>advance 49:21,21</p> <p>advantages 171:11</p> <p>advocacy 70:13,13</p> <p>Advocates 45:21 47:23 48:2 59:6 65:18 72:3 94:10 130:1 144:21 145:5 170:24 174:6</p> <p>Advocates' 59:13 174:4</p> <p>Affairs 56:11</p> <p>affect 109:18 154:17</p> <p>Affording 163:21</p> <p>afraid 140:22</p> <p>afternoon 160:14 170:3</p> <p>agency 61:8</p> <p>aggregate 102:20 102:21 121:10</p> <p>agree 70:13,22 76:3 79:6 80:25 81:1,5 81:21 83:12,25 84:9,15,19 85:5 85:19 87:19 90:11 97:21 98:1,2 100:23 104:20 108:2 115:4,5,6 122:19 124:20 127:23 128:9 156:21 163:9 170:13</p> <p>agreed 48:15</p> <p>agreement 54:21 54:25 70:12 139:5</p> <p>agreements 55:1</p> <p>agrees 155:8</p> <p>ahead 49:25 72:13 73:3 79:23 110:4 130:5 134:9 139:16,21 141:23 173:9 174:14,17</p>	<p>aimed 65:13</p> <p>alert 55:3 63:13</p> <p>ALJ 153:20</p> <p>Alliance 45:16 48:4</p> <p>allow 48:12 55:22 58:23 78:10 82:11 94:5 97:10 143:20 156:6</p> <p>allowance 66:16 69:24 70:17 75:2 96:13 97:23 99:3 99:5 100:25 102:17 116:19 135:10 142:23 143:16,18,20 148:19 149:3,5,6 149:11 151:10,14 152:3,13 153:2,13 157:2,15 158:6,11 158:12 159:6 164:1,4,5 166:19 167:12 173:21</p> <p>allowances 62:3 63:9 65:10,10 66:13 67:19 69:4 96:3,12 99:8,11 99:13,18,22 135:14 143:10 146:1,25 154:14 154:18,22 155:3 155:14,16 156:22 157:19,19,21,25 158:1,21,22 164:9 164:10,11,12 171:9,15,16,18,23 172:4 173:4 174:23 175:4,6,13 175:22 176:1,11</p> <p>allowing 58:1</p> <p>allows 116:8</p> <p>alternate 67:21</p> <p>alternative 59:10 125:3</p> <p>alternatives 69:25</p> <p>amount 63:20 99:6</p>
---	---	--	--	---

102:16 113:19 150:15 159:11 169:1 amounts 175:6 Amy 44:12 47:2 analogy 144:2 analyses 59:9 analysis 70:16 120:6,16 122:2 123:3 126:21 145:20 147:8 148:5,12 151:13 159:8,10 167:22 167:25 168:3 170:8,15 172:11 analyze 111:13 analyzed 59:19 analyzing 176:8 annual 112:22 annually 57:20 answer 77:19,21 95:18 97:18 106:18 113:25 117:3 124:11,15 124:18,24 133:8 136:15 141:23 162:8,20 163:4 166:1 173:4 answered 171:6 answering 62:7 66:15 132:23 134:3,13 138:20 answers 53:19 124:22 136:20 147:4 180:6 anticipate 86:10 177:20 anybody 49:10 54:20 55:3 anymore 137:4 anyway 51:9 131:10 apologies 72:9 78:6 78:9 152:22 159:23 169:12	174:7 apologize 72:8 88:19 91:13 137:22 143:13 152:9,22 appear 86:8 appearances 45:1 47:10 appears 48:18 51:2 54:24 62:7 68:23 149:5 appended 50:23 51:8 appliances 80:10 82:11 application 113:24 134:1,4 applications 130:9 applied 111:5 133:5 138:23 applies 60:23 111:9 111:18 131:2 apply 116:12,22 117:3 138:24 148:4 160:25 162:17 applying 71:5 131:3 appreciate 103:7 145:2 165:1 approach 70:21 149:12 153:3 154:10,11 172:3 172:23 approaches 69:17 appropriate 56:24 61:12 91:23 97:10 121:19 122:7 136:5 138:11 139:4 141:20 153:3 158:2 160:25 170:25 178:22 approval 105:20 106:11	approve 59:17 63:6 74:15,22,25 112:3 119:5,11 139:11 139:17,24 approved 59:4 64:5 94:21 104:23 120:21 121:10 122:22 123:11 138:15 140:15 approves 104:21 129:6 approving 61:16 83:23 104:13,16 105:1 approximately 48:19 89:9 April 79:13 arbitrary 59:12 112:17 arenas 142:3 argue 77:13 106:7 178:20 argued 61:5 arguing 62:24 106:8,23 108:7 119:14 argument 62:25 63:12,22 76:14,23 104:12 105:1,19 116:23 118:14,25 119:18 122:3,4 arguments 74:21 78:11 arises 104:24 arithmetic 157:10 arsenal 66:24 article 127:3,5,7,10 127:13,22 130:16 articles 127:1 articulate 120:1 128:23 articulating 122:24 aside 119:18 166:13 asked 85:17 91:10	91:19 128:21 129:17 130:16,24 138:10 152:24 asking 60:17 74:10 87:23 89:16 124:16 130:10 152:13 156:17 162:8 163:2 164:8 168:14 assessed 135:22 assessing 172:6 assets 85:4,15,21 86:12 assigned 167:16 168:2 assistance 97:15 Assistant 47:16 associated 62:3 123:25 124:12 126:16 127:15 128:1 assume 77:12 90:1 99:9 112:6 113:13 116:22 140:25 149:19 assuming 104:22 166:22 assumption 63:1 98:3 157:20 assumptions 87:11 attacking 119:9,12 attempt 79:24 143:3 165:12 attention 59:21 81:13 88:15 151:23 attorney 45:8,13 47:16 180:9,10 attraction 125:2 attractive 58:6 attribute 159:1 auction 98:4,6 99:10,16 163:6 171:18 auctions 99:5,11,13	authority 63:11,14 75:17,23 76:4 88:7 authorize 117:6 authorized 68:21 84:24 114:9,17,23 115:15 116:9,16 116:25 117:2 161:14 authorizes 75:21 available 93:15 106:2 134:22 Avenue 45:13,23 average 69:1 96:13 97:24 99:18,22 100:24 101:1,8,15 102:17 135:14 146:6,16 148:14 150:6 155:3,10 170:10,12 171:12 172:5 averaged 172:6 averages 102:12 avoid 64:17 81:6 176:2 aware 49:21 76:12 79:19,20 89:15,18 89:20 93:20 115:21 129:5,8,19 129:23 131:3 140:16 142:22 143:1 163:7,8 167:2 AWEC 48:7 71:18
B				
back 84:21 86:23 92:14 103:10,14 107:8 126:12 137:20 143:6,7 145:5,11 154:6 164:14,18 165:3 166:2,14 background 60:12 152:22				

bad 146:15	basically 49:7	benefits 58:15	117:10,14,19	90:13
balance 70:2	51:14 98:7 139:20	104:15 163:24	118:2 125:19,25	business 68:3 85:18
balancing 60:9	146:11 147:20	best 102:2,5 106:9	128:13,17 130:4	176:12
ball 117:7	148:1 149:4 150:4	107:5,13 133:8	130:13 131:11,13	button 72:24 73:6
ballpark 113:19	158:20,25 172:13	better 70:17 76:11	131:24 132:3,6,15	88:17
band 68:20,20	basis 98:17 99:11	77:19,21 82:13	140:6 141:15,22	buy 56:17 99:15
170:21 171:1	111:5,9,18 112:22	83:13 84:14	144:20 145:3,11	175:25 176:14
bands 68:19 69:10	112:22 127:19	124:11 125:24	152:4 153:21,25	buying 66:13 98:5
148:20 149:18	128:5	139:11 143:22	159:17,20,25	155:14
Barnett 45:3 46:4,7	bear 68:14 69:8	147:2,3 149:12	160:10 168:6,10	buys 175:22
46:9 47:12,13	148:15,17 163:3	beyond 75:16	169:9,15,24 174:1	
50:2,15,25 51:7	bearing 105:20	big 89:11 97:24	174:5 175:17	C
51:19 52:2,12,19	bedrock 122:15	bill 78:19 79:10,23	176:20 177:11,17	C 53:18
53:11,15,25 54:10	126:10	80:3,5 85:3 91:8	178:1,7,11,17,23	CAA 67:20
54:15,24 55:25	began 164:15	97:15 158:8,24,25	179:1 180:8	calculate 90:3
56:1 59:24 71:22	Beginning 111:3	159:1	bottom 127:19	149:18 152:16
71:25 73:14,16,17	behalf 47:13,16,21	bills 157:4,14 159:7	128:6	170:14,20,20
78:7 90:21,22,25	48:1,7	159:13	Box 45:9	calculation 148:11
92:11,14 102:25	behavior 67:12	bills' 158:16	break 49:3 103:4,7	151:21 152:15,25
103:1 109:2,6,22	68:1 146:7 156:11	bit 133:15 150:20	103:9 135:9 145:2	158:23 170:10
115:19 117:12	175:5	157:13 158:23	145:4	172:6
128:15,20 130:7	believe 50:5,22	167:9	breaks 49:1	calculations 153:1
130:25 131:8,12	52:4,7,8,12,24	black 61:7	brief 48:9,12 51:9	calculus 97:4,5
141:1,6,10 178:8	71:19 73:11 75:22	blanket 105:6	63:13 140:16,20	California 129:17
178:14	76:1,2 78:3 81:24	blindfolded 146:13	150:3	129:19,22,23
base 62:13,24,25	82:5,25 86:5	147:1	briefly 128:15	131:2,3 143:2,11
63:9 96:2,4 98:11	94:11 96:24	board 146:14	140:17 141:8	143:15 166:24
100:2,10 101:4	114:20 115:20	bodies 120:22	146:2 168:8	167:3
102:4 122:5	126:5 129:16,17	body 95:7	briefs 177:18,21,25	California's 56:20
136:19 143:25	130:7,14,25 131:9	Bonfrisco 44:12	177:25 178:2,5	call 72:12 78:1,2
157:23 161:5	131:25 133:14	47:1,3,18 48:3,8	bring 125:20	83:11 90:4 92:15
162:6 163:2,13	137:25 139:1	50:13,20 51:14,23	127:11	92:23 103:15
164:21 165:20	148:22 152:8	52:6,16,22 53:6	bringing 122:1	109:25 112:16
168:15,19 169:4	155:7	53:10,22 54:3,12	133:10	117:15 160:2
based 57:8,18 62:6	believes 60:22,25	54:16 55:16,18	brings 60:11	169:11
64:1,16 80:9,10	62:20 63:17	59:23 64:7 65:17	broad 77:21 123:13	Callaghan 45:7
81:4,18,19 91:12	belive 126:1	65:23 71:17,22	124:21 125:17	46:3,5,6,8,9,10,13
94:12 98:14 100:3	Bellevue 45:5	72:1,7,17,20,23	126:13,17 129:1	47:15,16 55:12
106:6 109:13	bench 131:16	73:7,11,15,18	broadly 119:17	59:25 60:1 64:8
115:14 123:10	175:19 177:13,16	74:2 77:25 78:6,9	124:3	72:15 74:3,4,7
126:7 148:12,13	beneficial 107:11	90:19 92:13,19,22	Brown 47:6,22	77:24 78:1,3
151:13 155:24	127:9 154:15,23	93:1,9 102:24	budget 67:2	92:14,17,22,24
157:4 158:14	benefit 58:21 77:14	103:2,8,14,19	building 82:15	93:10,13 102:22
163:14 164:15,15	80:14 105:2,10	104:2 109:1,23	buildings 84:6	103:15,17 104:3,4
basic 134:2 157:6	159:12,12	110:3,6,14 115:25	burden 88:24,25	104:7 108:21,25

109:24 110:1,15 110:16,19 116:2,4 117:8,15,17 118:3 118:4,7 126:1 128:11 130:2,8,13 130:15,21,23 131:5,20,22 132:1 132:4,16,17,20 140:4,13 154:25 160:2 168:8,13 169:7 174:3 177:22 178:4 Callaghan's 160:15 called 131:21 160:17 calls 72:16 92:18,25 103:18 110:2 117:18 132:4 169:13 camera 73:10 Canada 166:24 cap 66:4 69:11 111:9,18 112:16 113:4 148:1 171:19 cap-in-trade 56:20 129:18,20,22 capable 67:2 142:14 capital 57:25 58:12 58:14 104:14,15 104:23 105:15,21 106:12 121:12 125:1 caps 59:12 111:5 captioned 47:8 carbon 66:9,11 67:13 68:1 87:4 94:11 114:14 careful 71:15 80:21 156:13 Carlo 145:21 146:10 147:8,9 148:4,12 carry 56:15	case 47:8 58:9 59:11,13 60:11,15 61:6 62:15,17 63:11,15 64:2 84:12,13 87:10 106:10 107:10,25 111:16,22 119:24 121:24 123:7 127:21 128:7 130:1 133:6 135:13 137:17 138:18 139:8,9,9 139:13,15 148:2,3 149:20 150:17 151:4 161:1,5,7 161:15,15,16,18 161:18,21 169:2 cases 60:20 61:22 147:11 156:14 cash 58:13 105:9 114:14 caused 104:16 CCA 63:9 64:24 66:2,3,12 67:10 67:15 68:8,10,11 68:14 69:21 71:1 71:15 74:21,25 75:2,10,19 76:16 76:21,24 77:3 79:7 88:9,23 91:7 91:23,25 94:25 95:3,19 96:1,11 96:19 97:12,13,23 98:3,5 99:2,5,8,18 100:24 102:17 109:16 113:21 116:19 119:16 121:14 122:5 124:13 129:14 130:16,17,18 131:1 135:10 140:17 142:14,23 143:10 160:20 161:5 162:1,5,10 163:6 164:25	165:8,11,14 166:19,23 168:14 169:3 171:14,23 172:2 175:13 176:8 CCA's 62:3 CCA-related 168:18 CCAs 173:12 CCR 44:24 180:1 180:17 CCS 99:22 ceiling 69:4 154:16 154:22 155:17,18 156:4,8,18 171:21 171:25 172:5,8,12 172:17,18,23 173:1,13,17 174:18 175:22 176:9,14,18 central 70:5 century 66:14 certain 84:25 90:2 90:5 175:6 certainly 70:9 85:1 121:15 123:21 Certification 180:18 certified 180:1,17 certify 180:2 cetera 118:21 157:24 Chair 52:20 130:19 130:22 175:20 176:4,19 challenges 59:8 chance 99:21 change 64:18 65:1 68:4 79:8 86:6 98:18 102:17 127:18 128:4 156:10 changed 167:6 changes 96:7 162:23 170:12	171:4 changing 157:9 characteristic 127:14,25 characteristics 124:1 characterize 83:3,6 163:17,18 characterized 77:9 charge 176:15,17 charged 156:23 chase 164:19 cheaply 154:22 check 71:18 72:7 163:9 Chief 58:10 CHRISTOPHER 46:7 choice 66:20 95:10 95:11,12 choices 63:8 81:17 81:23 83:2 88:9 choose 164:11 chooses 67:23 choosing 147:11 chose 63:21 Chris 59:2 131:23 Christopher 46:12 109:24 110:2,9 160:1,4 Christy 44:24 180:1 circulated 49:17 circumstance 105:5 137:4 168:24 circumstances 105:7 119:4 135:7 135:21 cite 108:17 127:1,5 cited 61:23 citing 119:8 claim 108:14 164:7 clarification 147:5 clarifications 50:4 clarify 50:6,8,10	52:23 54:3,7,12 62:5 111:23 112:6 112:15 131:24 151:8 157:13 clarity 84:4 112:12 clause 127:14,17,25 128:3 clean 80:7 cleaner 81:15 clear 61:2 63:17,23 68:6 69:17 71:10 71:14 73:3 86:21 111:12,14,17 112:21 130:19 134:8 135:16 136:2,4 158:5 160:19 161:17 173:12 clearly 62:8 64:24 84:9 159:11 Cleve 45:18 48:7 clicked 88:17 climate 56:4,5,13 56:19,22 57:16 58:24 64:11,18 65:1 66:2,3 68:3 71:12 79:8 80:8 80:11 84:13 109:10 174:24 close 153:14 closed 54:18 closely 73:2 closer 125:20 coasts 77:3 102:4 142:21 codified 64:12 Coie 45:3 47:13 colleagues 79:5 collect 163:16 collecting 163:17 164:16 combat 79:8 combination 81:15 82:11 come 108:18 139:5
--	--	--	---	--

<p>143:19 comes 53:18 100:17 144:6 coming 159:2 commendable 133:12 comments 49:12 177:1,6,8 commercial 82:4 Commission 44:2,5 45:6 47:4,5,17 55:13 56:7 57:21 58:23 59:1,17 60:11,14,17,17,19 60:22 61:1,3,6,9 61:21,22 62:1,10 62:12,18,19 63:10 63:14,16,23 64:4 65:3 67:10 68:7 69:16,19 70:11 71:9 72:16 74:17 74:22,25 75:20,21 75:22 76:1,2,3 79:14,21 80:22 83:23 84:24 85:16 88:1,7 89:16 92:18,25 95:7 97:9 99:4 103:18 104:21 105:7 108:17 110:2 111:14,22 112:3 112:10,13,15 117:18 119:24 120:7,16 121:22 121:25 122:1,21 123:10 124:9 129:5,6,23,24 132:4 135:23 136:1 137:3 138:2 138:9,9,14,15 139:16,23 140:17 141:14 142:5 160:20,23 161:4,8 166:12 168:19 169:2</p>	<p>Commission's 60:4 64:1 68:13,17 75:17 106:12 112:1 Commissioner 51:2 51:25 86:16,20 103:6 108:23 145:1 Commissioners 56:2 60:3 66:1 Commitment 56:4 56:6,13,19,23 57:17 58:24 64:11 66:2 80:8 84:13 109:11 174:24 commodity 149:7 common 121:9 communicated 62:8 communities 58:17 89:1 community 60:5 90:2 compact 57:12 companies 107:16 company 61:17 62:14 63:21 66:12 67:25 68:21 69:8 70:2 77:8 82:1 84:14 86:13 87:2 87:16,19 88:3 89:16 91:6 94:23 107:20 109:17 112:2,6 114:13 116:8,12,13 119:23 120:5,14 127:18 128:4 145:25 161:4,6,12 161:22 162:7,12 162:18 163:13,16 164:3,4,18 166:7 167:21 168:15 171:13 175:22,25 company's 62:11 62:13 63:8 66:20</p>	<p>82:2,4 105:8 109:10 117:1 compare 125:6 compared 69:2 101:1 106:25 108:9 155:10 comparison 125:2 compensate 122:22 123:11 124:9 129:2 compensated 123:17 compensates 122:13 123:15 124:6 Complainant 44:6 complete 77:17 180:5 completed 180:5 completely 61:12 86:23 94:19 126:7 150:5,11 complex 95:19 compliance 56:18 57:19 62:3 67:16 67:20,22 68:11,14 69:2 70:5 76:19 77:9,13,17 88:22 88:23 92:6,7 93:20,22,25 94:19 95:15,19 96:19,23 97:13 98:3,5,9,12 98:16 100:4 102:21 109:11,16 121:15 122:5 124:13 125:11 138:22,25 142:25 148:8,8,14 161:5 162:5,6,11 164:25 165:9,11,14 167:3 167:7 171:15 172:24 173:2,11 173:15 176:13 complicated 97:5 101:20 156:6</p>	<p>162:19 complication 101:23 complies 112:13 comply 66:12 76:16 76:24 77:2 88:9 94:25 96:22 100:9 112:2 171:23 173:3 177:1 complying 171:14 172:2 component 121:7 126:22 components 121:5 121:13 compound 133:8 comprehensive 122:20 comprehensive,a... 64:20 concede 162:2 concept 89:23 125:1 concern 61:23 91:2 91:3 164:20 165:8 171:3 concerned 75:9,11 75:13 91:6,6 135:7 concerns 49:23 70:2,15 91:5 128:23,25 concluded 168:20 179:5 concludes 108:24 conclusion 108:18 150:16 conditions 113:18 117:3 172:13 175:5 conduct 71:23 conducted 151:13 172:24 confidential 52:4 52:13,15,25 53:4</p>	<p>53:4,13,14,20,21 54:19 149:17 confidentiality 54:21,25 55:1 confining 157:18 confirm 49:22 confused 132:2 confusion 112:9,12 177:3,5 consequences 173:14 conservation 82:5 conservative 70:1 conserve 57:5 consider 56:23 60:18 67:21,21 69:24 121:10,16 123:4 125:5 126:2 126:5,11,14 144:2 considerably 86:4 consideration 70:23 71:16 considerations 58:19 considered 120:2 123:1,22 126:20 129:15 134:16 139:10 considering 133:18 considers 98:22 consistent 122:25 consistently 63:24 constant 97:25 107:3 construct 125:12 construction 67:4 79:19 consumer 70:12 consumers 45:16 48:4 80:12 86:14 138:13 139:16,18 140:3 154:12,15 162:18 164:17 consumption 91:21 155:20,22,24</p>
---	--	---	--	--

156:1 contain 53:4 59:11 contained 149:1 152:19 contains 58:16 59:4 59:7 contemplate 91:7 contemplated 91:8 92:2 context 65:2 89:10 121:4 continue 58:23 59:15 62:11,16 65:24 66:17 67:23 80:16 92:4 138:3 145:6 171:20 continues 68:13 contrast 143:10 control 56:10,19,25 65:9 99:7,15 101:3,12,13,16 106:19,24 107:2 107:19 109:10 123:24 133:23 135:14 155:8,9,9 158:2 162:12 163:22 164:7,9 172:20 controlled 164:4 controls 164:3 convincing 170:17 coordinated 64:19 copies 74:8 110:22 copy 55:5,6 93:14 104:10 106:2 112:23 114:1 118:8 132:23 134:21 core 61:20 173:7 correct 52:5,6 53:22 54:6,13 68:7 71:19,20,24 71:25 72:4,8 74:16 75:10 76:5 76:17 79:3,12,17	82:22 85:4 95:1 95:21,22 96:4,5,8 99:24 102:6 104:24 105:22 111:6,7,16,25 112:20 113:6,7,12 113:16 114:6,7,11 114:12 118:12,13 118:16,21 119:13 120:7 122:17,18 130:21 138:4,5 151:11,12 155:25 156:1,3 158:16,17 162:18 163:16 168:22,23 171:9 173:15 corrected 55:6 149:10,25 correctly 80:18,24 82:19 84:7 89:2 138:22 correspondence 154:2 corresponds 143:9 cost 56:14 61:4 63:9 66:18 67:20 69:4,24 70:21 76:7 77:8,10,12 77:13,16,18 85:25 87:18,21 88:9 96:13 97:1,2,6,23 97:24 99:18,22 100:2,13,16,17,21 101:1,5,25 102:17 102:18 104:14,14 104:23 105:15,21 106:12 108:4 113:10,21 121:11 122:4,5 123:8,20 126:3 127:18 128:5 133:23 135:13,17,17 142:9 157:8,15,19 157:21,25 158:2 158:14 159:2	160:24 161:9 162:13,25 163:1 163:22,23 164:22 165:15 166:19 171:9,22,23 172:1 172:3,5 175:2 176:16 costs 56:9,10,16 57:15,17,19,22 58:1,5,8,12,14,24 62:13,24,25 65:15 67:15,22,22 68:12 68:24 75:2 76:5 76:16,24 77:2,14 91:10,12,16,23 96:1,3,11,14,19 96:20 97:3,13,19 98:3,5,8,12 99:3,5 99:15,22 100:5,9 100:25 101:2,3,15 102:11,13,20,21 106:19,20,24 107:1,2,4,6,8,10 107:19,25 108:8 108:10 109:8,8,10 109:14,15,16,18 116:18 118:24 119:15 122:8 123:8,9,16,21,23 123:24,25 124:13 124:14 126:3,6,7 129:3,14,15 130:18 133:18,20 134:8,16,17 135:10,20 142:12 142:15,24 143:18 143:21,24 144:2,3 144:13,16 157:2 158:6,8,11,12 159:6 160:21 161:5,7,11 162:1 162:5,6,11,11 163:2,13,14,15,18 163:19 164:3,4,6 164:8,16,21,21,22	165:15,19 166:9 167:12 168:15,18 168:20 169:3 171:11,12 172:4 counsel 45:11 47:11,19,21 53:6 54:20 55:2,15 64:8 72:2 78:4,10 78:12 91:1,10,19 91:19 109:7 128:21 136:13 138:18 139:3 140:7 155:2 168:14 169:11,13 170:9 176:25 178:18,25 180:9 180:10 Counsel's 52:9,24 53:3 69:13 70:7 70:15,19,20 131:18,25 151:23 154:9,11 164:20 164:25 165:9,22 counting 138:22 County 180:2 couple 50:4 course 62:15 63:22 court 55:6 180:1,17 courts 79:20 cover 135:7 covered 56:17 172:14 create 115:3,7,23 116:5,11 138:3 165:25 173:21 created 115:12,17 116:7 creating 64:5 credit 57:25 crisis 66:3 criteria 118:16,21 118:21 129:12 133:16,17 134:1,2 134:7,11,15 136:1 136:2,3,5,7,13,14	136:16,21 137:3,9 137:14,19 160:24 161:1,2,3,8 162:2 162:3,13 168:18 168:21 criterion 161:10,11 criticism 62:22 94:9 118:19 137:3 criticize 111:3 118:20 criticized 170:23 critiqued 69:12 70:7 cross 49:18 54:14 62:6 66:15 71:23 72:4 132:23 134:3 134:12 138:19 cross-examination 46:3,4,5,6,8,9,10 46:11,12,14 48:14 48:20 72:11 74:6 78:5,14 93:12 104:6 110:18 118:6 130:3 131:6 131:19 132:19 145:15 153:23 160:12 170:1 cross-referencing 52:11 crosses 78:13 crude 143:11 crystal 117:7 161:17 CTM-5 112:23 current 49:23 51:4 64:16 87:10 127:19 128:5 138:2 157:4,14 171:20,24 currently 50:11,18 51:10 57:16 60:22 89:12 129:15 161:19 customer 57:5,16 67:5 70:2 71:3
--	--	--	---	---

83:18 87:9 89:22 97:20 107:8 120:5 120:15 157:3,23 158:8,15 159:7,12 customers 57:2,4,9 58:15,22 61:17 62:4 63:7 66:19 66:21 67:7,11 68:3 71:8 76:17 76:25 77:4,6,9,15 80:14,15,22 81:16 81:23 82:3,23 83:2,4,9,15,19,20 84:6 86:2,4,11 87:5,14,18 88:9 90:9 91:13,16,22 92:1,4,6,8 94:3,7 95:5,5,8,10,11 96:15 97:2,6,11 97:14 99:7,23 102:18 104:15 105:2 107:9,21 113:22 116:13 119:23 125:15 127:17 128:3 156:23 157:12,14 157:21 163:3 165:8,12,13,16,18 166:1,5 175:2 176:17 customers' 91:20 95:14 cut 108:8 164:19 cutoffs 153:10 cutting 108:4 cycle 138:22	Danner 52:20 130:19,22 175:20 176:4,19 dart 146:13,14 data 52:10,24 53:3 53:17 54:1,4,9 89:5 113:2,3,13 148:19 151:11,15 151:18,24,25 152:3,11,13,18 153:2,6,17 158:24 date 50:14 82:5 98:16 130:22 Davison 45:18 48:7 day 88:20 101:16 102:12 days 146:12,21 dbarnett@perki... 45:5 deal 108:4 dealing 84:13 100:21 153:16 debt 125:15 decarbonation 84:23 85:3 decarbonization 58:20 71:2 84:5 84:10 86:14 87:3 87:15 94:6,14,17 95:4,8,15,20 97:12 114:14 175:12 decarbonize 70:10 80:13 81:7 87:17 87:24 95:10 decarbonizing 67:24 70:4 decide 62:10 88:1 112:1 decides 111:24 121:23 deciding 126:4 decision 99:7 106:12 121:21,21 140:23	decisions 60:17 71:5 99:4 100:23 102:16 108:17 120:7,16 121:3 decline 74:17 171:19 declining 86:7 decrease 95:14,16 166:4,5 deemed 91:16 deep 143:9 default 63:1 defer 140:23 deferred 141:5 166:7,11 168:25 define 123:5 defined 124:10,19 125:4 126:20 defining 127:14,25 definitely 129:22 133:11 definition 98:5 123:7,10 124:1,20 125:16 126:12 128:22,24,25 161:24 degree 133:19 166:3 delay 127:20 128:6 delays 71:7 deliver 125:14,15 demand 57:4 83:21 92:2,10 97:24 demonstrate 96:10 99:20 173:3 demonstrates 97:22 demonstration 63:2 119:10 depart 85:24 departure 86:11 87:9,14 depend 155:19,20 175:6 depending 111:9	111:23 155:16 depends 137:16 166:2 172:13 175:4,8 deplorable 136:18 depreciation 85:4 85:14,17 describe 109:9 114:6 121:14 described 59:2 60:21 150:5 160:17 describing 124:14 168:1 description 150:3 design 56:12 designated 53:13 53:14,20 designed 68:23 83:2,21 123:16 127:17 128:3 129:2 desire 163:23 Despite 66:7 detail 76:11 detailed 172:10 determined 101:17 150:6 determining 126:15 160:24 develop 75:12 164:12 developed 133:16 133:22 157:5 developing 75:10 75:14 83:22 development 59:11 71:6 deviates 57:13 deviation 60:16 difference 70:18 100:14 123:8,15 123:20 126:2 155:13 differences 129:3	different 79:5 81:8 85:16 87:6 91:9 91:25 108:5 111:8 111:10 124:13 143:4 149:19 150:20 151:3 153:8 155:16 156:13 167:3 170:19 differently 97:3 134:6 158:23 difficult 125:18,21 136:10,11 137:1,8 140:1 142:16 143:16 162:5,10 difficulty 101:11 142:11 direct 65:4 81:13 130:5 138:3 151:25 152:14 direction 60:8 71:10,14 97:7 180:5 directly 60:12 66:19 82:6 86:17 157:21 disagree 90:15 105:19 107:16 133:3,5 discontinuous 170:24 discount 89:13 discourage 171:25 discreet 57:22 discusses 58:18 discussing 133:1 discussion 60:5 98:20 121:22 139:3 158:3 disincentivizes 67:18 disperse 67:5 dissuading 69:23 distortion 151:20 distribute 148:19
D				
D 152:15 153:9,15 170:20 D'Agostino 150:2 150:19,25 151:9 damaged 161:14 damaging 162:7 dampen 115:11				

<p>distributed 151:15 153:13,17</p> <p>distribution 70:17 146:18,18 148:21 149:4,11,20 150:4 150:9,9,16,18,22 150:24 151:1,10 151:18 152:14,16 153:2,7 170:14</p> <p>Division 45:8</p> <p>docket 47:8 61:25 67:9 68:5 69:18 69:21 71:6 138:7 138:16 139:7,7 140:24 141:18,20 142:5 154:6 162:15 177:14</p> <p>dockets 141:19</p> <p>document 50:9 52:15 88:18 160:20 176:8</p> <p>doing 57:10 100:8 102:2 165:14</p> <p>dollar 67:1</p> <p>dollars 58:20 113:12,20 166:12 176:17</p> <p>Donna 45:3 47:12</p> <p>double 66:16</p> <p>downside 165:13</p> <p>Dr 53:16 132:5,21 145:17 154:4 159:15 170:11,13 170:16,22 171:3,5</p> <p>drafting 78:18</p> <p>drastic 112:16 113:20</p> <p>driver 70:24</p> <p>drives 69:24</p> <p>drop 163:25 164:2 164:13</p> <p>dropped 163:15 164:17</p> <p>drops 49:11</p> <p>dual 67:1</p>	<p>due 95:14 100:19 177:19 178:2</p> <p>duly 73:23 93:5 103:23 110:10 117:23 132:10 160:5 169:19 180:7</p> <p>duty 57:11 91:12</p> <p>dynamics 172:15</p> <hr/> <p style="text-align: center;">E</p> <hr/> <p>Earle 46:10 53:16 54:6 69:13 131:25 132:5,7,9,21 141:24 144:22 145:12,13,17 154:4 159:15,22 161:24 170:16,22</p> <p>Earle's 170:5,11,13 171:3,5</p> <p>earlier 63:16 94:2 95:17 96:24</p> <p>early 86:22 173:11</p> <p>earn 115:15 116:9 116:24 117:1,5 125:13 126:6 161:13</p> <p>earned 68:21 114:17,23</p> <p>earning 69:11 111:4 116:16</p> <p>earnings 58:7,14 59:5,14 70:15 105:9 111:24 112:4,16 113:4 114:6,8 115:11,16 115:21 116:6,10 116:17 148:1 163:22 166:10</p> <p>earns 58:4,4 114:9</p> <p>Earthjustice 45:23</p> <p>easiest 149:15</p> <p>echo 48:22</p> <p>echoing 48:21</p> <p>Ecology 156:10</p>	<p>economist 154:20</p> <p>economy 81:4 143:3,14,15 172:13 175:5,7,10</p> <p>education 82:1</p> <p>effect 50:11 51:11 146:9</p> <p>effective 50:19 56:8 88:9 138:4 139:15 140:3 147:14</p> <p>effectively 98:18 127:15 128:1</p> <p>effects 105:16</p> <p>efficiency 67:6 80:10 81:20 82:2 83:1</p> <p>efficient 82:10</p> <p>efforts 64:17,25 86:14 87:15,17,20 94:6,14 95:15,20 114:14</p> <p>egregious 146:7</p> <p>either 49:11 53:21 59:5 75:2 166:7</p> <p>elaborate 155:15</p> <p>election 166:18</p> <p>electric 76:8</p> <p>electricity 57:6 80:7 86:15</p> <p>electrification 67:6 157:24</p> <p>electrify 97:16</p> <p>eligible 85:1 89:21</p> <p>eliminated 90:12</p> <p>eliminating 88:24</p> <p>elimination 118:23</p> <p>embed 160:20 161:5</p> <p>embedded 107:1 108:1,10 109:9 123:21 124:4 126:3 134:18 136:3 152:15 163:2,19 164:21 164:22 165:19</p>	<p>emission 64:16 66:9,11</p> <p>emissions 57:3,6,8 64:15 65:6 66:4,6 66:8,13,21,22,25 67:9,13,15,24 68:2,9 70:25 71:12 76:20,21 82:15 94:11,24 95:4 158:15 159:2 174:21 175:8</p> <p>emitting 80:11 81:20 82:10</p> <p>emphasize 61:14</p> <p>empirical 149:13 149:18 153:7</p> <p>empirically 153:14</p> <p>employee 180:9,10</p> <p>employing 104:19</p> <p>enacted 64:21 79:11</p> <p>enactments 79:7</p> <p>encourage 57:2 68:8 95:3 107:14</p> <p>encouraged 49:19 67:14</p> <p>encouraging 67:12 84:10</p> <p>endeavor 86:21</p> <p>ended 140:13</p> <p>ends 173:15</p> <p>energy 44:8 45:2,16 47:9,14 48:4 50:6 56:3 65:8,14 67:8 80:14,17 81:4,7 81:15,17,22,23 82:2,12,13,14,22 82:24 83:1,2,7,14 85:2,11,13 88:25 154:13</p> <p>Energy's 89:4</p> <p>engaged 101:22</p> <p>enrolled 89:12,17</p> <p>ensure 64:4 80:14 123:16</p>	<p>entails 137:7</p> <p>enter 55:19</p> <p>entered 97:15</p> <p>entire 61:13</p> <p>entirely 161:9</p> <p>entities 56:17 66:5 79:21</p> <p>entity 66:23 76:19 82:21 172:15</p> <p>environment 123:18 125:13</p> <p>environmental 45:21 47:23 48:1 59:6,13 65:18 70:13 72:3 82:16 94:9 129:25 144:21 145:5 170:23 174:4,6</p> <p>equal 104:22,25 146:12 154:21</p> <p>equating 164:6</p> <p>equation 156:3,5 156:19</p> <p>equilibrium 143:14</p> <p>equipment 80:9,11 81:19,19,20</p> <p>equitable 71:3</p> <p>equity 58:14,19 120:3,6,15,22 121:3,8,10,23 122:2 125:1,15 162:22,24</p> <p>equivalent 136:9</p> <p>error 149:6,8,23</p> <p>especially 59:13 133:18 134:9</p> <p>essence 112:15</p> <p>essential 136:21</p> <p>essentially 119:21 121:1 150:24</p> <p>establish 135:23 148:20</p> <p>established 97:9 120:22</p> <p>establishes 68:18</p>
---	--	--	--	---

<p>establishing 124:25 126:17 estimate 48:19 estimates 48:18 estimation 98:16 et 118:21 157:24 evaluated 129:11 evaluates 57:8 60:23 61:3 evaluating 60:13 89:10 133:4 evaluation 126:16 eventually 95:12 everybody 88:21 evidence 56:3 68:5 69:16 71:9 86:5 108:13 151:14,14 151:18 153:1,16 170:15 evident 68:15 evidentiary 44:11 47:7 evolve 149:7 exact 81:9 107:24 172:10,15 173:5 exactly 50:9 57:10 examination 46:1,4 46:7,9,11,13,14 72:14 90:24 104:3 109:5 128:19 140:11 145:13 168:12 174:10 180:7 examine 88:8 144:22 examined 73:24 93:6 103:24 110:11 117:24 132:11 160:6 169:20 example 86:15 89:24 91:17 99:9 113:4 164:14 171:1 176:10 exceed 146:23</p>	<p>163:1 exceeded 146:22,22 exceeds 149:21 exceptions 180:6 excessive 161:13 excluded 54:22 exclusively 93:21 162:25 excuse 91:6 excused 92:20 131:14,17 159:23 169:12 176:23 executed 57:17 exhibit 49:17 50:5 50:7 51:5,8,12,15 51:16,18 52:3,4 54:1 55:5,11 66:14 112:23,25 149:1 152:4,19,21 152:25 177:13,16 exhibits 48:10 49:15,16,19,20 50:5,18 52:14 53:23 54:14 153:23 exist 51:13 141:7 141:12 existed 130:17 existence 120:23 121:6,18 existing 85:22 88:8 expect 91:15 146:14,16 147:20 148:15,17 172:21 expecting 94:3 expense 127:16,20 128:2,6 expensive 176:1 experience 68:7 expert 57:24 105:21 expertise 69:3 experts 105:15 expires 180:18 explain 62:20 147:8</p>	<p>157:1 164:2 165:5 explained 56:10 57:24 58:11 68:25 69:13 explicit 60:19 61:1 111:15 137:11,12 explicitly 61:23 85:9 exposed 161:12 165:17,21 exposes 165:20 exposing 165:16 exposure 70:4 157:7 162:21 expressed 91:3 175:1 extension 61:19 175:11 extensive 59:9 extent 97:22 102:15 107:4,7 169:3 External 56:11 extreme 59:14 extremely 171:22 eyeball 151:6 eyesight 80:1</p> <hr/> <p style="text-align: center;">F</p> <hr/> <p>face 123:18 144:12 facilitate 94:6 fact 61:22 66:23 68:11 82:25 88:1 148:6 157:18 161:7 factor 101:23,24 175:10 factored 97:20 factors 126:14 155:21 172:11 175:4,7,10 fail 68:16 fails 151:5 fair 81:10 87:19 90:12 101:19 102:15 104:16</p>	<p>113:19 119:20 125:13 126:6 133:25 faith 142:19 fall 58:7 false 116:20 familiar 76:7 familiarity 76:9 fantastic 98:15 far 60:7 68:5 99:9 144:25 149:5 164:22 172:17 177:18 fashion 75:23 faster 85:21 fat 150:22 fatness 150:21 favor 56:5 76:15 feature 114:8 felt 166:8 fewer 59:7 field 67:19 fifteen 72:5,9 Fifth 45:13 figure 149:17 151:5 file 51:25 55:9 154:2 166:6,7,10 177:7,14,15 filed 49:19 50:24 files 139:5 161:22 filing 51:6,18 54:24 62:12,14 114:19 127:21 128:7 177:12 final 51:16 55:6 63:24 154:5 Finally 63:4 financial 58:10 59:5,9 66:5 70:3 86:13 107:11 114:13 116:10 financially 57:9 116:12 180:10 find 70:11 142:16 151:14 161:1</p>	<p>165:22,22 172:1 177:9 findings 64:12 fine 131:8 136:6 finish 165:7 finished 135:4 173:2 first 47:10 55:24 68:6,19 73:23 77:20 80:4 81:12 93:5 100:6 103:23 110:10 117:23 132:10 142:25 145:20 151:25 160:5 162:4 165:7 169:19 173:15,17 174:12 fit 137:3 five 96:13 100:18 113:12,20 134:9 144:12 157:3,7,14 158:7,21 176:17 five-minute 145:4 fixed 176:14 fixing 137:18 flag 49:11 flat 109:19 flatten 57:22 flaws 59:11 flesh 138:18 flow 58:13 105:9 114:14 focus 60:12 69:12 88:14 137:17 167:9 focused 69:7 70:12 119:3 134:4 155:2 focuses 69:23 70:24 focusing 156:2 foggy 86:22 folks 86:18 follow 118:17 follow-up 130:10 154:1 following 48:14</p>
---	--	---	--	---

<p>58:8 follows 73:25 93:7 103:25 110:12 117:25 132:12 146:18 160:7 169:21 Footnote 127:1 130:20 150:1,5 force 57:5 forces 67:20 forcing 71:12 forecast 96:3 98:24 102:5 133:20 136:10,12 137:2,8 137:18 142:17,18 142:19,20,24 143:5,6,20,23 144:16 162:1,5,10 162:17 164:15 forecastability 135:17 142:9 forecastable 133:19 forecasted 57:19 123:8,16,20 129:3 134:9,17 162:6 163:13 164:20 forecasting 142:11 142:14 forecasts 102:3 144:6,8 foregoing 180:4 forget 158:25 form 129:6 formal 151:6 formally 153:23 former 120:24 formula 150:7 forth 68:17 94:5 forward 59:22 61:2 98:19 101:21 116:22,24 137:19 144:7 157:17,25 166:18,20 167:18 172:23 fossil 80:9,10 81:4</p>	<p>81:4,18,19 found 80:6 81:14 112:19 169:2 170:15 176:9 four 113:11,20 167:4 four-year 148:14 Fourth 45:4 fraction 90:11 frame 154:25 173:8 framed 137:10,17 framework 60:13 60:16,21 61:6 62:18 118:14 133:3,6 135:6 free 63:22 Friday 177:7 front 52:14 69:16 69:20 85:21 127:22 139:24 fuel 67:1 80:9,10,11 81:4,18,19 97:16 144:2,3,13 fulfilling 57:11 full 65:3 108:9 180:5 function 100:20 fundamental 98:23 122:15 126:9 funds 71:3 166:16 further 68:10 71:6 77:24 92:11 102:22 108:21 109:22 117:8 128:11 131:12 140:5 144:19 159:15 169:7 175:16 future 68:2 117:5 143:19 173:10 174:23 175:14</p> <hr/> <p style="text-align: center;">G</p> <hr/> <p>gas 57:3,4,6,9,18 62:4 64:14 65:6</p>	<p>66:6,9 76:19,20 76:20,21 77:6 82:2,4,15 85:4,15 85:18,21 86:1,4,6 86:12 87:5,9 91:21 92:1 93:23 94:2,7,25 95:21 114:17 115:16,21 144:11 155:25 172:14 gases 56:15 Gehrke 46:13 68:25 69:12,22 169:14,15,18 170:3 174:2 176:23 Gehrke's 66:15 general 45:8,13 47:16 51:21 91:12 114:22 119:4 124:17 133:2,3 137:9,24 138:17 138:19 139:8 143:14 157:22 161:5,21 171:18 generation 67:3 getting 109:17 125:20 give 71:15 78:21 89:24 96:1 124:11 138:18 150:3 154:13 161:6 173:9 given 69:16 104:16 119:16 123:18 139:6 146:19,20 149:5,6,7 153:1 171:23 174:15 gives 127:7 135:12 giving 124:22,23 138:13 global 64:17 83:21 127:2 go 49:25 54:17 61:13 72:13 73:3</p>	<p>79:23 80:4 84:21 86:23 88:11 97:14 100:8 110:4 130:4 138:10 139:16,21 141:23 144:3 148:10 150:24 157:21,22,23 158:10 161:19 164:14 goal 87:22 117:1 goals 65:4 69:18,21 71:1 84:15,18,21 84:22 goes 82:9 124:1 143:6,7,25 going 48:10 49:2 54:18 55:22 61:1 61:13 73:3 79:23 85:20,21 86:2,11 87:4,20 88:18 92:5,6,9 98:9,14 98:19 100:12,14 100:16 101:21 102:13 105:9 116:22,24 130:4 131:18 135:9 140:2,23,24 141:18,22 144:4,7 147:15,18 148:9 152:23 155:19,20 156:7,25 159:12 159:12 161:19 166:20 173:6,10 173:13,17 174:24 good 47:12,20 48:6 56:2 60:2,2 63:20 73:20 74:8 78:16 78:17 84:16 93:14 103:9 104:8 110:20,21 118:8 132:21 143:17 145:17,18 160:14 170:3 grabbed 51:15 grants 166:12</p>	<p>graph 150:10 Gravotta 45:22 46:11,14 47:25 48:1 53:1,2 55:17 65:19,21,21,25 71:18 145:16,18 152:6,9,10 153:18 153:22 154:3,4 159:14,18 174:8 174:11 175:15 178:24 GRC 62:11,21 great 47:18 48:24 49:15 74:2 159:21 greenhouse 56:15 57:3 64:14 65:5 76:20 82:15 growing 60:5 67:24 83:1 growth 87:12 guess 52:22 98:14 115:2 119:9 135:15 142:1 164:19 166:2 172:20 178:15,17 guts 127:10 guys 86:22</p> <hr/> <p style="text-align: center;">H</p> <hr/> <p>half 163:15 hand 49:12 93:2 103:20 110:7 117:20 132:7 154:20,20,21 155:12 169:16 handle 176:5 Hang 88:13 happen 100:15 148:7 happened 149:14 163:15 happens 175:21 hard 86:18 harm 104:15,18 114:13 116:11</p>
---	--	--	---	---

<p>HB-1589 94:4 head 79:16,18 105:5 health 82:17 hear 65:9 70:20 73:19 104:8 132:21,22 152:22 160:15 170:3 heard 71:13 79:3 89:23 91:1 96:24 107:22 109:7 128:21 161:23 hearing 44:11 47:7 49:24 55:18 63:13 86:18 125:21 161:19 170:16 177:18,21,25 178:12 heating 80:9 Hello 117:19 help 95:7 140:21 helpful 133:24 helping 70:11 73:19 81:16,22 helps 116:13 hereunto 180:12 high 69:23 80:10 81:19 87:11 88:25 100:6 135:21 136:8,11,24 137:6 142:9 154:16 161:12 171:22,23 176:10 higher 97:2 100:9 100:24 120:7,16 176:15 highest 67:20 171:9 172:1 highlight 68:6 highlighted 81:12 highlights 71:10 highly 58:17 historical 114:16 116:21 historically 116:15</p>	<p>history 61:9 hold 92:19 97:24 holders 125:15 home 97:16 homes 84:6 honestly 143:17 Honor 47:15,21,25 48:6 50:2 55:13 60:1,2 64:10 65:25 71:21 72:15 74:4 78:3 92:17 92:24 103:6,17 104:4 108:22 109:3 110:1,16 116:3 117:9,13,17 118:4 128:12 130:2 131:5,22 132:1,17 140:5 141:25 159:24 168:9 169:8 177:22 hope 97:8 178:14 hopes 60:14 hoping 62:17 hour 48:19 hours 142:11,12 House 78:19 79:10 79:23 80:3 housekeeping 49:14 176:22,24 hundred 80:7 Hundreds 142:13 hyperlink 50:9,22 127:2 hyperlinks 50:13 hypothesis 147:10 147:12 150:17 151:4 hypothetical 77:20 96:1,7,10 97:21 99:19 113:10,16 113:23 162:8</p> <hr/> <p style="text-align: center;">I</p> <hr/> <p>idea 84:16 100:4,17</p>	<p>107:17 116:23 137:25 138:19 147:10 157:6 ideas 177:20 identified 81:2 85:1 89:21 ignored 96:20 ignores 66:23 III 44:11 illustrative 113:17 imagine 177:23 178:5 imbalanced 120:23 immediately 66:8 impact 63:9 80:11 96:14 97:24 99:7 99:23 102:16,18 106:11 162:23 166:18,22 167:6 impacted 58:17 impactful 166:9 impacts 64:18 82:16 120:21 121:1 implementation 59:12 64:20 119:16 129:14 implemented 59:20 implementing 91:2 130:11 implements 80:8 implicit 118:25 implicitly 60:20 61:21 implies 63:10 imply 99:3,6 importance 174:14 important 70:23 71:4 81:16,22 84:4 121:4 123:5 123:13,25 141:19 153:9 158:4 impose 59:1 71:14 92:6 imposed 59:16</p>	<p>imposes 129:24 156:10 imposing 57:7,12 58:25 91:4 92:7 131:3 impossible 172:25 improve 82:13,17 83:7 105:8 163:22 imprudent 91:17 inaccurate 153:10 inappropriate 61:5 inappropriately 62:2 inartfully 171:7 incentive 65:13,15 67:5 70:10 88:3 95:6,6 106:19,23 107:2,24 108:8 115:10,12,17,23 115:24 116:7 147:14 154:13 173:21 174:21 incentives 64:5 66:5 71:5 84:5 115:4,7 116:5 145:25 155:6 173:8 174:14,19 incentivize 56:9 84:14,17,20 175:25 incentivized 67:25 70:25 87:21,23 88:1 incentivizes 70:8 incentivizing 65:13 include 56:20 59:12 62:13 75:24 88:2 included 49:18 51:16 62:24 64:12 169:4 includes 58:19 177:24 including 49:18 66:6 69:1 81:17 84:5 88:23 95:21</p>	<p>155:21,21 158:11 162:6 175:4 180:6 income 58:17,21 88:24 89:1,6,21 90:9,13 157:23 incorporate 70:14 incorporated 134:10 incorporates 120:23 incorrect 63:13 65:8 119:22 incorrectly 122:13 increase 83:21 109:19 114:12 158:15,18 159:4,7 166:8 increased 91:22 increases 66:4 165:18 increasing 109:17 increasingly 83:18 incredibly 146:7 incremental 176:16 incumbency 139:25 142:1 incur 77:2,14 incurred 58:8 116:19 incurs 77:8,17 INDEX 46:1 indicate 54:20 indicated 55:22 64:24 114:20 indicates 66:7 124:21 129:1 individual 92:8 97:19 individually 48:16 individuals 89:4,12 89:17 industries 95:21 industry 94:2 ineffective 142:6 influence 99:18</p>
---	---	--	--	--

<p>164:9,10 information 53:5 54:19 167:14 infrastructure 67:4 82:12,22,25 83:20 85:23 initial 62:14 74:9 75:4,6 110:22 113:9 114:1 177:24 178:5 input 125:21 inside 123:1 125:10 129:11 insight 61:20 insisting 68:13 instability 165:21 165:25 instance 146:14 instruments 56:18 93:22,25 insufficient 64:22 70:8 93:22,25 151:17 integral 56:12 integrated 80:21 94:4,13 integration 82:14 83:13 Intelligence 127:2 intend 51:19 177:7 intended 51:22 64:24 79:6 122:22 136:6,25 intends 51:24 intent 51:4 68:10 81:6 94:8 95:3 interacts 175:2 interest 60:23 63:3 65:16 70:2,11 107:5,13 119:5,10 119:11 120:2 169:5 interested 166:10 180:11 interesting 95:2</p>	<p>154:19 interests 60:10 interim 146:4 173:20 interrupt 165:1 introduce 72:13 131:20 introduced 122:25 introducing 121:19 inventors 122:23 invest 126:4,15 investing 68:2 71:1 investment 88:24 125:10 investments 70:3 125:3,7 investor 125:5 126:1,5,11,14 investors 58:7 123:11 124:6 125:8 involve 109:13 involved 138:7 involves 125:2 IRP 66:7,14 94:10 158:14 171:13 isolating 96:19 isolation 121:11 ISP 97:8 issue 60:12 61:24 63:25 92:4 94:1 108:11 133:9,10 134:10,16 135:16 136:13,21 137:9 137:13,17 138:11 140:14 141:5 143:2 146:3 154:25 155:1,1,1 155:13 167:2 issued 140:16,17 141:8 issues 49:10 55:20 111:23 121:25 129:6 134:8 135:9 139:6</p>	<p>items 111:19 119:1 176:24</p> <hr/> <p style="text-align: center;">J</p> <hr/> <p>Jamie 46:8 55:10 58:11 105:25 117:18,22 Jason 46:5 92:18 92:25 93:4 JEA 52:23 55:16 55:17 96:24 178:23 JEA's 52:24 67:17 68:9 151:24 152:25 jive 136:20 JLM-1CTR 55:11 job 98:15 101:10 joinder 166:22,23 Joint 45:21 47:23 48:1 59:6,13 65:18 72:3 94:9 129:25 144:21 145:5 170:23 174:3,6 JUDE 44:12 Judge 47:1,3,5,18 47:22 48:3,8 50:13,20 51:14,23 52:6,16,22 53:6 53:10,22 54:3,12 54:16 55:16,18 56:1 59:23 64:7 65:17,23 71:17,22 72:1,7,17,20,23 73:7,11,15,18 74:2 77:25 78:6,9 90:19 92:13,19,22 93:1,9 102:24 103:2,8,14,19 104:2 109:1,23 110:3,6,14 115:25 117:10,14,19 118:2 125:19,25 128:13,17 130:4</p>	<p>130:13 131:11,13 131:24 132:3,6,15 140:6 141:15,22 144:20 145:3,11 152:4 153:21,25 159:17,20,25 160:10 168:6,10 169:9,15,24 174:1 174:5 175:17 176:20 177:11,17 178:1,7,11,17,23 179:1 180:8 July 63:17 jurisdiction 129:20 jurisdictional 130:9 131:4 jurisdictions 101:22 121:16 123:22 130:11 131:7</p> <hr/> <p style="text-align: center;">K</p> <hr/> <p>keep 49:8 92:5 101:7 102:11 107:13 109:19 164:18 173:21 key 61:19 68:6 70:18 kick 146:24 172:22 kind 63:18 75:1 83:24 114:21,25 115:11 144:24 kinds 76:5 know 48:25 49:11 50:25 51:7 74:12 75:5 77:19,21 79:16,18 83:17 86:7 87:7,10 89:4 89:12 90:7 93:17 94:8,13 95:24 97:16,18 98:20 100:12,14,16,21 101:6,14,23,24 103:5,5 105:12 106:13,15 107:15</p>	<p>111:1 112:25 114:3,20 116:17 120:10 122:9 124:11 126:24 129:22 134:25 135:3 136:1 137:6 137:21 138:21 142:12 144:3,21 147:2,15,22 149:7 155:20 156:8,14 162:22 166:8,18 166:22 167:4,8,15 167:20,22,23,24 172:20 178:8 knowledge 143:8,9 172:19 known 123:24 knows 98:12 100:7 116:15 Kody 167:24 Kuzma 46:5 92:18 92:25 93:1,4,14 155:7</p> <hr/> <p style="text-align: center;">L</p> <hr/> <p>L 55:10 labeled 54:14 Lacey 44:14 lack 63:10 87:12 laid 68:18 100:13 language 64:23 81:24 laptop 73:13,16 large 81:15 82:11 83:20 96:7,8,14 102:18,21 166:5 largely 59:3 120:22 162:11 171:14 larger 154:24 late 144:7 law 44:12 47:3 61:7 122:16 126:10 laws 64:21 lay 137:24 lays 62:18</p>
---	--	--	--	---

<p>leading 96:4 leave 86:2 136:7 177:4 leaving 85:24 86:12 left 150:12 177:3 legal 77:5 91:2 legality 75:9,11,13 91:4 legislation 56:13 legislative 56:14 79:7 81:6 84:3 legislators 56:22 legislature 64:11,13 64:14,23 65:5 66:1 79:6,20 80:3 80:6 81:2,14,24 84:9 let's 54:23 72:10,10 90:1 114:23 120:10 135:19 139:24 148:2 163:5 164:19 176:10 letter 61:7 level 126:3 161:13 163:1 levels 151:21 life 85:17 light 72:25 73:6,8 113:21 limit 56:9 115:17 178:9,10,12,21 limitation 82:7 limited 48:13 76:9 99:14,19,20 109:12 133:15,17 limiting 156:3 limits 64:15,19,22 65:6 146:8 171:17 line 49:11 63:25 78:22 101:2 106:15 108:3,15 111:3 112:19,19 127:20 128:6 135:3,3 171:8</p>	<p>lines 74:16 88:14 93:17 105:11 120:10 122:12 124:24 134:13 136:25 156:25 158:13 lingering 112:4 link 51:19 linkage 167:2 linked 50:10 list 49:17 50:5,7 51:12,15,16,18 54:1 55:5 136:3 136:15 listed 51:20 52:3 little 72:21 86:22 113:11,19 132:2 134:6 150:20 163:5 165:23 167:9 load 91:20 loads 57:16 82:13 83:7,10 86:6 87:11 94:4 95:14 local 64:17 69:1 logic 60:19 logical 61:19 long 67:23 70:6 80:12 87:8 94:1 94:22 95:9 163:23 longer 70:24 143:6 longstanding 57:13 look 59:21 78:21 97:4 101:25 102:9 113:24 116:21 121:5 125:8,9,11 138:1 143:12,14 144:3,6 148:7 150:10 156:15 171:16 176:6 177:9 looked 50:8 91:9 111:20 looking 53:25 78:25 94:1 120:19</p>	<p>144:11 150:20 157:6,8,17,18,25 158:23 166:18 172:23 looks 73:19,20 109:24 117:16 144:23 150:13,21 155:10 159:22,25 175:23 Loop 44:14 lost 86:23 99:10 141:2 lot 94:14 97:7 101:10 102:1 112:1 147:2 172:11,15 low 58:17,21 88:24 89:1,6,21 90:9,12 100:6 101:7 107:14 142:18 157:23 169:3 173:22 lower 70:21 97:23 97:23 100:9,18,24 104:14 105:3 146:17 155:18 157:15 171:2,3 lowers 104:14 lowest 87:18 107:20</p> <hr/> <p style="text-align: center;">M</p> <hr/> <p>main 119:20 133:25 maintenance 143:24 makers 92:2 making 49:12 65:14 69:15 71:4 87:3 88:8 98:2,14 108:14 118:24 122:3,4 164:6 manage 82:13 83:13 101:10 102:10 126:6</p>	<p>manageable 177:10 management 82:13 83:7,10,20 84:12 manager 108:8 managers 108:4 mandate 56:15 95:13 manner 154:14 map 48:9 March 79:13 margin 101:13 marked 52:25 55:10 market 56:18 65:11 69:3 86:10 87:4 100:20,21 101:1,2 101:3,5,12,13,16 101:17,18,19,20 101:25 102:12,13 109:14 113:18 116:21 127:2 142:12,14,23,23 146:16,17,19 147:14 149:14,22 155:9,11 164:10 171:18 175:23 markets 57:25 166:23 Martin 46:8 55:10 58:11 105:25 106:7 117:18,19 117:22 118:8 125:19 128:21 130:18 131:3,13 131:17 matching 153:11 material 166:9 Matt 46:3 56:11 58:18 72:16 73:22 matter 44:4 47:5,8 79:5 94:23 matters 49:15 maxim 79:19 maximize 107:3 maximum 113:10</p>	<p>McCloy 68:9 McConnell 69:9 167:24,25 168:2 McGuire 46:12 68:24 131:23 133:16 136:8,17 136:22 142:10 160:1,4,14 McGuire's 60:21 62:19 134:21 135:6 136:15 mean 93:24 98:15 101:21 115:13 136:14,25 137:14 137:16 138:9 142:1,16 147:6 148:4 150:6 154:19 157:14 163:16 164:2 meaning 88:23 meaningfully 66:24 means 57:9 65:2 85:19,22 114:15 150:11 meant 50:3 67:10 87:15 measured 59:5 measures 67:6 175:12 mechanism 56:5,6 56:14,21,24,24 57:7,13,20 58:25 59:1,2,3,7,16,17 61:17,24 63:2,7 63:11,15,18 65:13 67:13,17,18 68:23 68:25 69:10,15,20 74:15,18,23 75:1 75:10,12,14,17,20 75:22,25 76:8,12 76:13 77:1 79:15 84:12,17,20 85:14 88:2 91:3,4,7,25 94:4 97:9 102:5,8 104:22 105:2,20</p>
---	---	---	---	--

<p>106:11,25 107:7 107:17 109:20 111:24 112:4 114:11 115:3,7,10 115:12,18,22,24 116:5,7 118:23 119:12,15 120:21 122:6,7 129:24 131:2,4 133:4 137:25 138:4,11 139:9,11,19 140:1 140:24 141:5,20 142:2,4,6 145:24 148:5,16 154:5,10 157:2 158:19 159:5 160:25 165:15 167:17,18 168:3,22 mechanisms 56:8 59:10 60:6,9,14 60:24 61:4 64:3,4 68:16 76:4 88:8 94:6 97:1,11 104:13,19 105:3 105:17 119:6 121:2,7,9,18 127:8 130:10,12 138:16 139:12,15 median 67:23 70:6 meet 57:16 64:22 65:6 69:21 71:1 83:21 97:12 99:13 117:2 161:7,10 162:2,13 168:21 171:15 173:4 meeting 64:19 95:14 98:16 meets 62:21 memory 177:23 mention 96:24 136:24 mentioned 63:16 147:8 mentioning 99:2 mere 90:11</p>	<p>message 71:13 met 101:9 161:2,3 167:21 method 70:6 87:21 172:2 metric 157:7 Michelson 59:3 Mickelson 46:7 68:18 109:25,25 110:2,4,9,20 115:20 116:4 microphone 73:2 86:18 125:20 mid 66:13 million 58:20 113:12,20 157:7 158:21 mind 60:12 101:9 112:8 minimize 163:23 minimizing 81:3 minutes 48:13,20 72:6,9 103:9 144:22 misapprehension 160:17 mischaracterizes 115:20 mischaracterizing 91:14 misunderstanding 122:15 126:9 mitigate 82:16 model 69:6 70:1,7 70:14,19 141:18 147:22 149:3,11 170:8,25 174:22 176:18 modeled 56:19 modeling 143:5,6 models 143:1,2,3,4 143:5,11,14,17,20 143:22 145:20 172:7 175:1 modest 166:3</p>	<p>modified 70:14 134:7 modifies 69:10 modify 67:8,12 68:1 modifying 70:9 moment 78:21 92:20 94:21 money 71:3 85:20 164:18,18 165:3 166:2 moneys 146:13 monkeys 147:1,3 Monte 145:21 146:10 147:8,9 148:4,12 month 161:20 166:19 months 142:15 148:9 morning 47:12,20 48:6 56:2 60:2,2 74:8 78:16,17 93:14 104:8 110:20,21 118:8 132:21 145:17,18 Moser 45:17 48:6,7 71:20 motion 55:9 motions 180:6 motivate 158:3 motivated 96:11 motive 107:3 move 55:20 112:6 131:18 148:18 165:15 Moving 76:14 106:14 multi 64:20 multifaceted 95:20 multimillion 67:1 multiple 51:1 113:2 117:3 mute 48:22 49:8</p>	<p style="text-align: center;">N</p> <p>name 47:2 65:19 69:15 73:1 Nash 45:7 47:16 130:8 Nash's 142:8 nash.callaghan@... 45:10 natural 57:4,6,9,18 62:4 66:9 76:19 76:20,20 77:6 87:5 91:21 92:1 93:23 94:2,25 95:21 115:21 144:11 155:24 172:14 nature 170:24 near 67:19 necessarily 95:10 139:3 162:19 163:20 necessary 51:12 57:15 76:17,24 88:4 166:17 need 51:9,11 54:17 54:19 71:10 90:1 94:23 97:19 121:25 134:7,9 149:10,12 153:23 155:19 158:21 162:3 163:20 175:6,14 177:1,23 178:5,15,16,22 needed 63:18 71:7 80:17 136:4 158:4 164:24 needs 83:21 95:14 99:14 119:24 121:20 134:10 149:25 negative 106:20 127:19 128:5 net 66:15 99:11 105:2 neutral 106:20</p>	<p>never 69:14 new 61:20 69:4 80:12,22 81:3 83:8 84:25 85:1,5 86:4 121:15 138:23 148:1 ngravotta@earth... 45:25 Noelia 45:22 48:1 65:21 noise 152:22 non 80:10 81:4,20 82:10 noncompliance 156:9 nonconfidential 53:24 nonnormal 152:13 152:16 153:2,7 170:13 noon 49:2 normal 148:21 149:4,11,20 150:4 150:8,16,17,21,23 151:1,4,17,19 152:15 153:8,12 153:15 170:20 normality 150:2,19 normally 151:15 153:13,17 Northeast 45:4 notably 68:20 note 48:21 49:12 52:17 148:21 noted 68:24 94:2 175:3 notice 173:9 174:16 177:3 November 50:14 51:3 79:17 177:19 178:2 number 83:1 87:6 89:8,11,11,17 90:2 99:13 101:19 113:13 125:8</p>
--	---	---	--	---

<p>129:12 139:6 146:11,20 152:1,4 155:21 167:13 numbers 96:8 159:3</p> <hr/> <p style="text-align: center;">O</p> <p>O'Neill 45:12 46:4 46:11,12,14 47:20 47:21 52:25 53:8 53:12,17 54:8 55:14 64:10 72:5 78:15 86:25 90:17 90:20 140:8,12 141:4,8,13,17 142:7 144:19 152:8 159:19 160:13 168:4 169:13 170:2 173:24 176:25 177:2,15 178:20 oath 73:23 93:5 103:23 110:10 117:23 132:10 160:5 169:19 object 49:20 141:11 objected 49:21 objection 55:12,14 55:17 70:9 115:19 116:3 130:2,5 133:25 141:1,23 objections 48:11 49:25 55:9 134:2 180:6 objectives 68:16 obligated 57:3,10 obligation 77:3,5 77:16,18 92:7,8 97:13 98:17 obligations 94:15 95:16 98:19 100:5 171:15 173:4 occupants 82:18 occur 58:3 98:13 158:18 174:13</p>	<p>occurred 149:22 October 44:13 47:1 49:17 177:12 180:5,12 offer 84:4 97:11 offered 126:13 Office 45:8,13 Officer 58:11 offload 71:8 oh 73:7 84:2 92:19 131:15,24 152:9 159:22 169:12 176:22 okay 48:21 49:15 50:15 52:16 55:22 72:1,7 74:2 75:8 75:13,24 76:3,7 76:14 77:8,23,25 79:2,19 90:17 93:9 95:23,25 99:2,17 102:15 103:2,8,14 104:2 104:21 105:1 106:6,10,14 108:3 108:7,13,16 110:3 110:6,25 111:22 112:3,16,23 113:10 114:1,22 115:11 117:8 119:3,18 120:4,13 122:9 123:6 124:18,24 126:9 126:19,23 127:23 128:17 131:11,13 131:16,18 133:8 133:24 134:21 135:1,6 136:8,24 137:6,12,20 138:9 138:15 140:4,23 142:7 145:3 146:13 148:18 151:1,8 156:21,25 158:9,22 159:21 160:10 161:23 168:4,10 169:7,9</p>	<p>169:10 175:18 176:22 177:11 178:4,17 179:1,2 old 142:20 Olympia 45:9 Once 142:2 ones 50:11,17,18 140:2 ongoing 66:20 online 49:6,12 86:18 open 52:14 170:22 177:4 opening 48:12 55:21,23 59:24 64:9 79:3 96:25 160:15 operate 123:19 operates 127:17 128:3 operating 67:2 operational 59:8 operations 66:10 67:25 82:16 93:23 126:8 143:24 172:14 opinion 122:21 123:10 124:2,8,22 127:8 139:2,10 144:15,15 174:16 178:24 opportunity 48:12 55:23 62:20 70:20 83:9 104:24 116:9 123:17 125:10 161:6 163:22 166:6 170:5 174:12 176:13 opposed 67:24 118:11 opposing 118:14 opposite 106:7 optimize 82:12,22 82:24 optimized 70:21</p>	<p>option 70:15,22 175:22 options 69:5 146:17 order 48:15,17 61:25 62:12 63:11 63:14,24 64:2 67:9 68:13,17 74:18 75:17,20,21 76:1,4 77:8,17 79:14 94:25 107:21 111:16,22 112:7 161:4 176:1 ordered 56:7 76:2 ordering 49:23 75:24 orders 112:13 original 51:15 outcome 82:17 180:11 outcomes 146:15 outlined 69:22 outlying 156:13 outside 130:3,14 162:11 outstanding 55:20 overall 63:9 121:23 130:9 154:17 156:22 157:2,15 158:11 159:5 overcome 140:1 overly 128:25 overpaid 166:13,16 overpaying 164:24 overrule 141:23</p> <hr/> <p style="text-align: center;">P</p> <p>P 135:18 154:25 156:2,4,18 p.m 179:6 pace 86:7 87:8 page 46:2 74:11 75:4 78:22,24 88:11 93:17 95:18 95:23 96:6 99:19 105:11 106:15</p>	<p>108:3,14 110:25 112:17 114:3 120:10 122:9,11 124:24 126:23,25 134:12,24 135:2,3 137:21,22 138:1 145:22 148:24,25 149:17 150:1,10 151:5 154:7 156:25 158:13 178:21 pages 44:17 177:20 177:23 178:6,22 paid 135:14 165:19 167:12 176:15 panoply 65:3 papers 151:12 157:5 158:25 paradigm 80:13 paraphrase 91:11 part 51:16 64:24 76:22 79:7 81:12 81:16 91:22 97:4 100:18 113:7,8 119:8 120:8 122:24 135:6 143:2 156:2 167:2 167:11 partake 68:11 partially 154:1 participants 101:18 101:19 participate 83:9 121:20 participation 83:19 particular 52:13 125:9 particularly 143:10 parties 48:12,18 49:4,5,9,19,22 60:10 61:2,5 62:22 67:14 70:12 77:12,13 111:11 138:3,6,10,12 139:5 159:21</p>
--	---	---	---	---

160:18 166:10 169:10 175:18 177:19 179:2 parties' 48:14 partly 135:8 partner 81:22 83:25 parts 76:10 106:8 120:1 party 47:11 55:23 89:5 180:10 pass 91:15,23 passage 56:12 passed 56:22 64:11 65:7 66:1 77:3 79:10 80:3 81:1 95:5 96:15 97:3 107:8,9 113:22 166:14 passing 91:2 109:8 109:15 passthrough 61:16 63:6 65:15 66:19 68:12,23 77:1 91:13 98:21 106:25 107:7,17 107:25 108:9 109:18 passthroughs 98:21 path 118:24 pathways 67:21 pay 85:20,21,23,25 99:8 102:18 157:12 165:11,18 175:2 payers 85:20,23,25 105:10 163:24 164:23 165:10,20 165:24 166:13,14 166:15 payers' 156:1 paying 97:14 155:3 164:23 165:8,13 pays 96:2,11 99:18 102:16 114:10	PCDR-23 152:7 Pearson 150:2,19 150:25 151:9 peculiar 165:23 penalized 57:10 penalties 155:5 156:15,17 176:2 penalty 156:9,9 175:24 pending 161:19 pendulum 60:7 penetration 89:23 90:4,7 people 76:10 90:3 92:5 95:4 107:15 111:12 perceive 87:25 percent 66:10 68:19,20 80:7 94:10 96:2,13 100:18 101:15 102:13,14 146:8,8 146:21,23,25 147:17,17,21,21 149:21 157:2,3,15 157:16 158:6,7,16 159:4,6,7 170:20 percentage 90:3,5 percentages 148:10 158:5 percentile 146:21 147:23 149:18 151:21 152:25 167:21 170:19 171:2,2,3 percentiles 147:13 149:13 152:15,16 153:8,14 170:14 perception 116:20 Perfect 48:8 65:23 72:20 perfectly 65:22 performance 57:8 64:1 70:3 115:10 115:23	performed 167:25 period 115:1 138:25 142:25 148:8,8,14 167:3 167:7 172:25 173:2,11,15 176:14 Perkins 45:3 47:13 person 72:19 100:13 115:3 person's 100:11 personal 139:2 personally 139:22 perspective 107:12 114:16 119:2 133:15,17 petition 44:4 166:6 166:8,11,12 168:25 phrase 87:13 phrased 171:7 picked 146:11 picky 156:12 piece 153:16 pieces 174:15 Pierce 180:2 pilots 157:24 place 83:8 113:5 122:7 138:25 158:19 placed 96:2 places 62:2 plan 49:2 55:4 65:12 66:8 71:23 78:2 85:13 94:5 94:13 129:11 171:13 177:15 planned 66:8 103:5 planning 80:21 plans 48:9 171:16 174:23 plays 66:3 please 59:25 65:24 74:11 78:1,8 86:16 92:15	107:21 109:25 118:18 128:23 131:20 135:2 146:2 148:20 154:9 165:6 plenty 75:22 plug 150:7 plummet 166:3 plummeted 166:2 plus 148:8 PO 45:9 point 52:8 62:23 69:19 86:1 96:6 96:22 97:7,19 98:23 103:3 108:13,19 111:5,9 111:18 112:19,22 112:22 119:7,21 121:6 147:4 149:2 149:9 163:20 170:13 172:16 pointed 136:15 points 68:6 70:12 70:18 policies 64:21,21 86:3 policy 60:18 61:8 61:11,11 71:6 81:2 84:10,22 92:2 121:21 140:16,20,21 141:4,6,11 poll 144:21 portion 167:19 Portland 45:19 position 75:16,19 99:17 106:10,13 111:8,10 124:21 133:5 139:21 165:10,22 positive 106:20 possible 73:10 107:14 114:13 142:16 143:19 144:14,16,18	145:2 161:9 162:1 165:4 166:15,22 166:23 post 63:13 177:18 177:21,24 178:12 potential 82:11 113:21 125:5,7 126:2 142:3 168:15 potentially 134:17 158:7 power 56:10,14 76:7 82:17 112:1 143:5,6,9 144:6 powerful 56:14 practical 85:19 94:23 163:5 precise 111:12 predict 86:7 preferred 136:23 prefiled 48:10 49:16,18,25 premature 62:23 premise 61:15 118:22 119:3,9,11 119:12 prepare 152:10 present 47:24 48:5 54:21 55:3 72:18 107:18 presentation 48:15 48:18 presented 138:19 170:15 171:13 presenting 71:19 presents 56:3 President 56:11 58:10 presiding 47:5 presumably 138:24 147:17 presume 79:20 pretiosus 150:23 151:1,2 prevalence 60:6
---	--	---	---	--

<p>preventing 154:16 previous 50:12 61:25 previously 50:23 124:15 130:6 169:2 price 67:11,19 68:8 69:2,4 71:7 80:12 80:16 81:3,7 101:8 107:20 116:13 135:10,12 135:14 146:15,16 146:17 148:19 151:10 155:1,2,3 155:10,17,18 156:4,8,18 158:22 162:24 164:6,9,10 164:17 165:13,17 165:18,24 166:5 171:21,25 172:2,5 172:12,20,23 173:1,13 174:18 175:1,3,22 176:9 176:10,14,14,14 176:18 priced 67:19 prices 69:2 70:17 80:12 98:24 144:11 146:6,19 149:3,5,6,7,11,22 153:13 155:9 157:9 163:6,10 164:1,15 166:2,3 166:4,25 167:12 170:10,12 173:22 pricing 154:22 174:12 pries 167:6 primarily 174:22 primary 62:5,9 63:4,5,21 66:12 70:23 74:14 76:15 118:11,19 119:19 133:7 134:4 146:4 148:2 160:19</p>	<p>164:20 principle 57:1,14 principles 122:15 126:10,16 prior 60:20 94:14 94:15 108:17 154:2 170:16 prioritizing 88:24 privilege 64:3 probably 50:16 89:25 94:15 115:2 142:21 problem 96:21 98:11 101:4 119:23 146:5 165:12 problematic 163:21 procedural 153:20 177:24 procedure 150:25 proceed 49:14 59:25 64:8 72:14 78:11 90:21 93:10 104:3 110:15 118:3 132:16 144:24 145:6,12 153:19 169:25 proceeding 54:18 62:14 65:2 74:18 85:16 89:15,20 98:18,23 119:20 124:7 129:13 140:21 160:22 180:4 proceedings 86:5 179:5 proceeds 157:20 process 78:19 84:1 101:11 product 107:15,20 productive 144:17 profile 125:9 162:23 profit 107:3 profits 107:4</p>	<p>program 56:20 82:1,5 89:13,17 90:2,5 97:15 129:18,20,22 programs 64:21 82:2,9 83:1,22,23 84:4 89:6 94:18 96:24 prohibitively 162:10 project 58:21 86:1 projected 90:1 98:8 101:24 159:2 172:8 176:9 projecting 87:4 101:5 projection 87:8 100:3,3 157:5,9 157:17 projections 87:11 98:10 projects 88:25 promote 67:5 promoted 100:14 pronounce 65:19 proper 64:5 137:25 properly 60:9 proposal 59:6 60:18 68:18 69:14 69:22,23 70:9,19 70:24 71:15 111:4 111:5,8,12 114:12 119:1 138:2 146:5 147:24,25 148:1,2 160:18,19 164:16 165:3 167:10,10 167:21 168:20 170:6,18,23 171:8 172:20 173:20 175:23 proposals 133:4 149:24 propose 79:14 170:18 proposed 48:17</p>	<p>51:15 60:13,24 61:3,18 62:2 67:17 69:9 70:1 112:16 114:6,8,10 115:16 116:6 118:14,15,19 134:7 135:6 137:9 138:15 139:12,15 140:2 145:24 146:3,8 147:22 149:2 161:10 162:13 167:17,18 168:18,21 172:21 proposes 60:13 proposing 111:15 130:1 160:20 protect 123:24 154:11 protected 80:15 167:14 171:19 protecting 138:13 139:16,18 140:3 protections 58:16 protects 58:13 prove 98:9 provide 48:9,12 55:5,23 57:4 111:12 127:2 143:18 145:25 173:8 provided 68:9 114:16 provides 174:20 providing 83:9 113:4 174:14,16 174:18 province 101:25 proving 98:7 prudence 98:21 99:1,2,3 101:9 102:9 128:10 176:5 prudent 65:14 71:2 91:16 98:17 126:8 146:1 154:14</p>	<p>PSE 47:11 51:24 53:11 55:24 56:5 56:6,11,17,18 57:2,3,5,7,9,16 58:13,23 59:1,2 62:13,20 63:8,10 63:20,22,24 66:14 66:18,21 67:9,20 68:7,11,12,15,19 69:10,17,24 70:3 70:8,21,25 71:3,5 71:7,10,23 72:4 72:12 74:17 75:9 75:13 76:14,15,19 76:23,25 77:5,16 79:14 82:21 88:22 91:12 93:20 94:2 94:4,22 95:18 96:2,10,12 97:22 99:4,6,21 109:17 112:4,9,10,11,13 113:2,11,14 114:9 114:10,16,22 115:15 116:15,23 117:5 128:14 138:23 139:5 146:12 147:14,15 147:17,19,20 148:15 154:12,16 154:17 155:5,8,8 155:9,15 156:21 157:8 163:25 167:10,12 171:16 171:17,20 172:8 172:12,17,25 173:2,12,21 174:17,20,23 175:9,12,13 176:9 178:7 PSE' 102:15 PSE's 55:9 57:18 57:25 58:10,13 59:3,7,14,15,17 62:4 63:4,5 66:7,9 66:15 68:17,23,25</p>
--	--	--	--	---

<p>69:3,3,6,6 72:11 74:14 75:16 76:7 78:1 90:7 92:15 92:23 93:22 95:10 96:15 99:17,23 100:23 103:16 105:24 106:10 109:18 111:8 114:6,8 115:16 116:6 117:16 129:15 138:17 139:19 146:5,24 147:22 148:1,3,5 148:15 149:2 155:24 157:15 158:14,14 164:24 167:16 171:13 172:14 175:5 public 45:11 47:18 47:21 52:4,9,23 53:3,6 55:14 60:23 63:2 64:8 65:16 69:13 70:7 70:14,19,20 72:2 78:4,10,12 81:2 84:22 86:3 91:19 119:5,10,11 129:23 131:18,25 136:13 138:18 139:3 140:7 151:23 154:9,11 155:2 164:20,25 165:9,22 168:14 169:5,11,13 170:9 176:25 177:1,6 178:18,25 Puget 44:8 45:2 47:9,13 50:6 56:3 65:8,13 81:22 85:1,11,13 87:2 89:4 94:5,10,12 94:18 95:6 96:21 98:3,5,15,22 100:8,11,19 102:10 154:13</p>	<p>Puget's 98:19 102:20 pull 50:21 79:24 pulling 53:8 pulse 103:4 144:24 Punishing 57:11 pur 107:25 purchase 65:10,10 65:11,11 67:18 93:21 95:15 98:4 99:12 146:1,25 154:14 155:15 156:4,8,18 164:11 164:12 172:8 173:17,22 174:13 176:7 purchased 172:17 172:18 173:1 176:11 purchases 66:16,18 66:20 69:24 70:5 82:17 167:20 171:21 172:24 purchasing 65:12 93:25 154:17 155:17 156:22 158:14 174:23 175:5 pure 63:6 65:14 77:1 106:24 107:6 purpose 115:6 116:4 154:9,11 purposes 113:17 push 70:21 72:24 73:6 put 68:17 87:7 94:5 94:18 96:23 100:2 100:10 134:6 138:25 142:17 144:17 154:12 165:2 167:18 177:12 putting 98:11 101:4 136:19 173:10</p>	<p style="text-align: center;">Q</p> <p>Q&As 135:2 qualifies 85:2 qualify 89:6 quantities 155:16 quantity 135:11,12 155:1,19 171:16 174:21,22 175:8 175:13 quest 125:1 question 76:18 77:19 86:24 87:1 91:11,14,15,19 92:3 95:2 97:18 118:17 119:9 120:13 123:13 124:19 127:16 128:2,8 130:16 131:1 133:3,9 135:15 136:20 141:17,21 146:2 147:4 153:20 154:19,24 155:12 156:6,16 161:7,10 162:9,19 165:2 166:1 171:7 173:5 174:8 175:20 176:4 questioning 153:19 questions 49:3 53:3 59:22 77:24 88:19 90:18 102:23 108:24 109:22 111:20 112:5 117:9 128:12 130:15,24 131:6 131:12,16 133:1 136:14 140:5,9 142:7,8 145:19 159:20 168:5,14 169:8,9 171:8 173:25 175:18,19 176:20 178:18 179:2 180:6 quick 50:21 131:15</p>	<p>144:21 145:4 147:5 quickly 109:2 quite 142:18 158:1 159:10 quote 62:1 67:10 68:1 93:20 95:18 105:15 106:18 108:3 122:14 124:25 127:13</p> <p style="text-align: center;">R</p> <p>raise 93:2 103:20 110:7 117:20 132:7 169:16 raising 49:12 81:8 ran 151:9 random 146:12,20 147:11,16,18 range 102:11 rate 58:9 85:20,22 85:25 87:10 90:4 90:7 98:12 105:3 105:10 114:9 115:21 116:16,25 117:2,6 121:23 127:21 128:7 129:11 138:17 148:3 156:1 158:12 161:5,18 161:18,21 163:24 164:23 165:10,20 165:20,24,25 166:13,14,15 rates 62:13,25,25 64:1 67:4 68:21 75:23 89:23 96:2 96:4 100:3,10 101:4 102:4 107:1 107:13 108:1,10 109:9 113:22 120:7,16 122:5 126:3 127:18 128:4 136:19 138:23 143:25</p>	<p>144:17 157:4,11 158:10 160:21 161:6 162:6 163:1 163:2,13,19 164:16,21,23 165:20 168:15,19 169:4 rating 57:25 rational 87:2 reach 90:11 reaches 90:5 reaching 90:2,9 read 80:18,19,24 82:7,19 84:7 89:2 127:5,24 136:6 readily 106:2 reading 120:24,25 130:8 real 50:21 131:15 reality 164:22 really 97:7 100:4,5 101:23 109:13 113:20 115:17 123:25 135:16,16 136:20 138:12 139:17 150:22,22 153:16 157:17,25 160:18 171:23 178:8 reask 86:25 reason 61:23 63:19 98:1 100:2 166:4 reasonable 59:4 87:13,18 102:11 145:25 147:1 150:14 159:9 reasonableness 155:4 reasonably 119:25 151:3 reasoning 120:4,13 reasons 108:5 153:6 rebound 105:9 rebuttal 55:9 58:18</p>
---	--	---	--	--

62:6 63:8 74:9,11 75:6 78:18,24 88:12 93:15 95:23 104:10,12 105:12 105:24 106:8,14 110:22,25 111:20 112:17 118:9,11 119:3,21 120:14 126:23 137:20 recall 78:19 82:4 127:7,10,13,22 140:20 recalled 140:18 recap 155:23 receive 54:24 80:17 177:12 received 51:3 receiving 170:9 Recess 103:11 145:8 recognition 61:19 recognize 62:1 94:17 105:16 recognized 61:22 recognizes 63:8 94:22 95:18 recognizing 104:18 recollection 61:16 106:6 115:15 recommendation 61:10,14,15 62:6 62:9,12 63:5,5,21 74:14 76:15 105:21 118:12,20 119:19 133:7 134:5 146:4 149:25 160:22 recommending 160:23 recommends 74:17 reconsider 63:20 record 48:24 49:24 50:17,23,24 51:1 51:22,24 52:18 54:13,23 55:19	65:20 73:3 77:11 103:15 108:13 113:7 131:9 145:12 153:2,24 162:4,14 177:4 178:2 records 72:8 recoup 166:15 recover 57:15,22 58:24 126:7 127:18 128:4 168:16 recovered 58:2,8 recovers 57:16 58:5 recovery 96:4 127:16 128:2 160:24 165:15 169:1 redirect 46:4,7,9,11 46:13,14 78:7,12 78:12 90:21,24 92:12 102:25 109:1,5 117:11 128:14,19 130:25 140:6,11 159:19 168:6,12 174:2,7 174:10 175:16 reduce 56:15 57:2,5 57:23 58:1 65:5 66:6,8,21 67:8,12 67:14 68:1,8 70:3 70:25 80:11 82:14 89:16,18 94:24 96:11 97:11 99:21 104:23 105:8 107:4,7 109:19,20 116:6,13 156:4 159:11 reduced 157:16 reduces 58:12 157:2 159:5 reducing 58:12,14 66:25 71:12 96:12 105:16 107:10 120:20 156:21	reduction 96:14 157:3,11 158:6,7 158:12 reductions 59:14 94:3,3 reevaluation 138:17 reexamine 60:9 refer 142:4 148:20 reference 51:9,13 78:18,22,25 119:7 119:17 referenced 50:7 53:18 85:7 120:18 150:1 153:22 referencing 113:13 120:9 referred 158:6 referring 81:25 162:16 reflect 49:24 51:17 54:13 113:17 reflected 53:24 121:11 reflects 94:15 refute 69:6 regard 52:20 123:15 regarding 109:15 129:18 130:9 141:11 regards 121:14 regimes 143:16 regulated 66:5,23 123:2 regulatory 57:1,12 57:14 64:25 65:3 69:3 79:21 80:23 84:25 85:5 88:7 95:7 120:22 121:9 121:21 122:16 125:1,12 126:10 173:8 reject 138:2 150:17 rejects 136:22	related 61:3 75:1 76:4 77:18 99:5 109:10 120:19 122:16 130:15,18 131:6 168:14 relation 140:21 relationship 106:19 162:21 relative 180:9,10 relatively 70:1 relevance 121:24 relied 171:14 relies 93:21 rely 94:19 171:21 171:22 173:13 relying 70:5 93:24 174:18 remain 54:14 66:17 122:6 remainder 91:8 remaining 85:24 remember 81:9 168:16 remind 49:5 reminder 64:2 remotely 67:7 remove 67:3 156:16 removes 65:15 82:1 removing 70:15 Rendahl 51:2,25 86:16,21 103:6 108:23 145:1 renewable 83:13 repeat 120:13 128:8 rephrase 116:1 118:17 141:16 rephrasing 112:8 replacement 81:18 replacing 152:24 reply 177:25 178:2 178:13 report 129:18 130:7,8 177:8 reporter 44:24 55:6	180:1,17 reports 130:23 represent 70:17 representative 47:23 48:5 represents 122:14 reproduced 66:14 request 52:10,24 53:17 54:1 113:3 113:13 151:25 152:11,19 requested 177:4 requests 54:4,9 113:2,8 151:24 require 64:19 74:22 74:25 80:20 95:19 135:23 required 67:15 76:16,23 87:24 116:18 138:16 requirement 82:6 requirements 125:11 requires 56:17 75:19 80:13 81:25 requiring 91:25 112:10 reserve 69:4 reserved 72:3,5 78:4 144:22 residential 82:2 157:11 158:15 resist 68:13 resolve 112:11 138:10 resource 92:10 94:13 resources 66:24 82:14 83:11,14 respect 94:1 respective 55:2 respects 94:20 Respondent 44:9 45:2 response 53:3
---	--	--	---	---

<p>107:23 113:3,9,10 134:21 146:2 151:25 152:18 170:11,12 175:12 responses 52:10,24 54:1 151:24 152:10 170:9 responsibilities 71:14 responsibility 71:8 71:11 111:11 responsible 66:22 rest 85:25 restate 141:2 result 59:14 66:20 69:7 86:3 100:24 105:3 113:25 139:20 151:20 153:8 157:3 159:6 resulting 158:7 results 96:8 retail 77:5 retaining 119:14 retired 100:13 return 58:14 68:22 105:3 114:9,17,23 115:16 116:9,16 116:25 117:2,6 120:6,15 121:2,23 122:2 124:25 125:14 126:6 152:18 161:14 162:22,23 returns 116:21 120:3,21 121:7,10 121:23 122:16 123:1 126:17 revenue 106:20 revenues 88:25 review 99:1,2,3 102:9 112:25 128:10 167:11,11 167:16,19 168:2 170:5 176:5 reviewed 105:24</p>	<p>167:15 168:19,20 reviewing 135:4 171:4 revised 55:9,19 57:19 reward 57:1 right 51:7 53:8 54:2 64:3 74:21 88:5 92:8 93:2 94:20 95:17 96:6 100:23 102:3,5,7 102:19 103:20 105:11,19 106:6 107:22 110:7 111:3,14 112:18 113:18 117:10,20 118:2,23 119:15 120:19,24,25 121:1 122:12,21 124:8 127:1,3 132:7 133:1 135:1 137:24 141:19 150:12,23 164:18 168:1 169:16 173:24 176:19 178:13 rise 58:7 risk 56:8 57:1 59:10 61:4,17 67:17 68:14 69:7 70:4 84:12 101:10 105:16 109:17,19 109:21 115:9 120:20 121:19 122:16,25 123:1,5 123:7 124:2,7,9 124:12,16,19,21 125:4,9,16 126:11 126:12,16,18,19 127:15 128:1,22 129:1,4 135:22 136:9,11,24 137:7 147:23 148:15,17 161:12,13,24 162:3,16,21,22,23</p>	<p>162:24,25 163:3,3 165:11,17 170:21 risk- 75:24 risk-sharing 56:4 56:21,23,24 57:7 57:13 58:25 59:1 59:3,7,16 61:24 63:7,11,15,18 68:16 69:9,15,20 69:23 74:15,18,22 75:10,14,17,20,21 76:4 79:15 84:17 84:20 88:2 91:3,4 111:23 112:3 114:10 115:3,7,12 115:18,22 116:5,7 129:24 130:10,11 131:2,4 137:25 138:4,11,16 139:9 139:11,12,14,19 140:1,24 141:5 142:2,3,6 145:20 145:24 147:22 148:5 154:5,10 157:1 158:19 159:5 167:17 168:3 173:14 risks 56:25 57:23 58:1 62:2 67:13 68:12 69:8,12 70:25 91:24 98:22 122:1 123:18 124:5 125:2,5 162:16 165:13,24 172:6 risky 58:6 121:15 RLE 52:7 RLE-4C 148:22 RLE-7 52:15 RLE-7CX 52:5 RLE-7X 52:3 53:15 RLE-7XC 54:13 RLE-8X 52:9 RLE-9X 152:8,21 road 48:9</p>	<p>Robert 46:10 131:25 132:5,9 Robinson 45:12 47:21 54:6 90:20 176:24 ROE 121:22 122:13,22 123:3,3 123:11,15 124:6,8 126:20 129:2,4,4 129:6,15 ROEs 121:16 123:16,23 129:10 role 49:8 66:3 154:5 room 54:22 79:4 144:25 160:14 rose 163:6 Roughly 163:9 route 95:8 RPR 44:24 180:1 180:17 RSM 133:22 135:24 136:18,23 138:25 139:4 146:3 158:3 RSMs 136:5 rule 94:12 rulemaking 95:13 rules 178:9 run 94:22 95:9</p> <hr/> <p style="text-align: center;">S</p> <hr/> <p>S&D 127:1 s/Christy 180:17 safe 60:6 112:5 salary 100:11,12 sale 146:1 157:20 sample 151:3 158:24,25 samples 150:15 saw 48:17 saying 65:22 88:6,6 96:7 101:12 102:1 111:4 121:1 123:3 124:5 126:12,19</p>	<p>135:19 136:20 151:8 158:20,21 159:9 161:3 165:7 says 66:21 74:17 80:20 133:12 135:20,21,22 136:1,17 139:23 150:8,14 scale 83:19 86:8 87:9 129:15 scenario 155:24 162:12 schedule 50:12 57:18 58:1,16,24 59:15 62:10,15,21 63:6 74:15 75:18 75:25 112:11 118:23 119:14 138:17 177:24 schism 61:16 science 64:16 scientific 59:9 scope 119:19 130:3 130:14 score 170:20 scores 152:15 153:9 153:15 screen 79:25 SE 44:14 45:18 Seattle 45:14,24 second 68:15,20 76:22 88:13 148:18 secondary 69:2 146:4 167:9 175:23 176:1 section 80:4,5 81:25 82:9 84:3 84:21 108:11 sections 64:12 sector 82:15 sectorial 64:20 see 50:9 54:23,23 61:10 72:8 73:10 73:20 79:24 80:2</p>
---	---	---	---	---

80:4 83:18 86:3 86:25 135:20 136:19 139:4 151:6 152:7 155:3 seeing 53:12,13 seek 66:12 seeks 70:1 seen 173:5 seller 176:1 send 95:3 sends 173:12 Senior 56:11 58:10 sense 86:12,13 111:14 114:22 117:4 119:2 153:10 sensibly 59:19 sentence 80:20 84:3 separate 51:8,12 109:20 series 136:15 serve 57:3,11 67:10 76:17,25 77:5,9 77:16,18 91:12 92:1,4,9 serves 177:24 service 77:6,17 89:5 services 80:17 84:5 serving 92:5 set 61:23 64:15 65:5,6 69:18,21 75:23 96:4 99:12 107:6 109:14 121:8,8,19 129:11 129:12 140:21 166:13 176:10 180:12 sets 66:4 setting 75:24 119:18 123:23 129:4 setup 73:12 seven 58:19 Shapiro 150:2,8,13	151:9 share 67:13 68:19 71:11 79:25 91:20 91:24 116:18 shared 83:3,6 shareholders 127:16 128:2 173:14 176:16 sharing 56:6,8 59:10 61:4 67:17 68:18 69:7,10,11 75:12,25 76:12,13 91:22,22 115:9 147:24 148:15,20 170:21 171:1 sheets 50:7,11,15 Sheppard 44:24 180:1,17 shield 165:12,13 shielded 165:10 shift 60:18 61:11 61:11 86:14 88:10 165:24 shifting 119:22 shifts 61:17 120:4 120:14 127:15 128:1 Shipman 46:6 57:24 103:18,19 103:22 104:8 109:7 shocks 80:16 81:3,7 shoes 165:2 short 67:22 70:22 97:2 145:2 172:1 shorten 85:17 show 68:5 77:11 146:10 showed 101:9 showing 177:18 178:1 shown 108:4 162:4 162:9,9,14 shows 66:9,15 153:6	shrink 87:4 side 48:21 76:8 83:1 101:7 114:18 115:16 signal 67:11 71:7 95:3 173:12 signals 68:8 116:13 signature 180:12 signed 54:21 significant 56:16 64:18 94:24 99:23 134:17 157:11 158:1 169:1 similar 67:7 129:20 150:25 simple 147:10 simply 60:22 61:7 71:6 97:4 simulation 145:21 146:10 147:9 148:13 sir 88:6 sirens 152:23 sit 72:22 situation 96:21 121:14 six 134:9 142:15 144:12 sjm@dvclaw.com 45:20 skew 150:9,11,14 150:15 skewness 150:20 slightly 81:8 slowed 86:4 small 83:19 89:11 96:7,14 99:21 102:17 smart 81:17,23 83:2 solely 175:6 solution 136:23 somewhat 76:9 Sommer 45:17 48:7 sorely 71:7	sorry 52:20 76:22 86:20 117:7 119:7 137:22 139:21 141:2 152:6,21 156:12 174:5,6 sort 57:20 97:10 101:14 134:10 143:4 153:15 sorts 158:10 Sound 44:8 45:2 47:9,13 50:6 56:3 65:8,14 81:22 85:2,11,13 89:4 154:13 Sound's 87:2 sounds 178:19 sources 81:15 space 81:18 87:2 125:10 speak 73:2 86:17 SPEAKER 73:9 speaking 48:23 49:6,8 139:2 specific 63:12 106:24 107:6 119:4,8,10,15 120:8 121:14 125:6,18 126:4 131:1 133:1 165:2 167:25 specifically 50:17 58:13,21 118:20 120:19 121:17 127:11 129:2 130:6,14 133:6 156:17 172:3 specifics 118:15 123:14 163:8 speed 86:10 spends 154:17 156:22 spent 142:10,12 spoiler 63:13 spoke 174:12,13 spring 79:12	Square 44:14 ss 180:1 staff 45:6 47:17 55:2,13 59:4 60:13,17,22,25 61:10 62:17,18,20 62:23 63:12 67:2 69:9,17 72:11,12 72:16 91:1,10 92:18,25 103:18 109:7 110:2 111:15 112:21 113:2,3,9 115:25 117:18 119:22 120:2 122:1,12 124:9,20 125:4 126:19 128:21,22 129:25 132:4 133:5,10,12 134:7 147:25 149:2 168:7 174:2 Staff's 59:5,8,24 60:18 61:13,15,18 62:5,9,25 68:15 68:24 69:14 111:3 111:5,8 112:16 118:11,14,15,19 118:20 119:1,3,10 119:19 122:25 123:7 124:21 125:16 126:13 131:19,20 133:3,7 134:4,15 137:3,9 145:24 148:15 160:18 161:10 162:13 167:16,18 167:25 168:1,21 stance 63:24 standard 60:23 61:1,18 62:21 101:9 147:1 start 47:10,11 55:24 71:4 86:22 95:12 140:13 145:5 163:6
--	---	--	---	--

started 163:10	stipulate 49:19	summary 59:15	synonyms 136:12	147:12
starting 108:3	stock 116:21	71:9 104:17	system 67:8 70:4	technological 73:12
135:2	story 142:20	119:25	80:14 81:5,7	technology 83:8
starts 139:1	straight 144:12	summer 140:17	83:22 85:24 86:2	tell 83:17 101:6
state 66:2 73:1	strategists 67:3	sunsets 82:4	86:6 87:9,12 94:5	154:9 167:13
74:14 77:2 80:7	strategy 93:21	support 56:4 64:17	94:25	ten 48:13 68:19
81:14 93:20	164:12	68:11		96:2,13 100:18
101:17,25 105:15	Street 45:4,18	supported 59:8	T	103:9 111:5,9,18
106:18 108:3	101:19	supporting 81:17	Tad 45:12 47:21	112:22 148:8
115:1 120:20	strive 107:16 117:1	supports 105:5	tad.oneill@atg.w...	157:2,16 158:6
122:12 124:25	strong 70:10	108:14	45:15	159:6
129:10 134:15	122:19	suppose 137:16	tail 150:21	ten-minute 55:23
138:21 180:1,2	structure 68:10	supposed 92:4	tails 150:21	103:9
state's 64:14 66:4	171:20	112:5	take 48:15 81:10	tentatively 49:2
66:11	structured 88:22	sure 52:13,17 54:22	94:23 102:9 103:4	103:5
stated 62:1 67:10	stuck 52:14	66:2 73:5 86:25	103:4,8 112:11	term 67:22,23 70:6
84:10 139:14	stuff 84:22	87:7 88:13 90:1,6	114:13 144:20	70:22,24 80:12
140:20 153:6	subject 80:16 98:25	101:2 102:10	145:4 146:6,7	87:8 94:1 97:2
statement 55:24	102:8 106:24	114:19 118:17	158:25	163:23 172:1
59:25 64:9 79:3	107:6 128:10	128:25 131:16	taken 63:24	terminology 143:13
104:20 105:6	163:9 173:12	135:8 141:17	takes 105:7 175:12	terms 85:20 87:5
121:4 122:14,19	subjecting 58:2	146:3 147:10	talk 76:10,11	129:1 133:10
122:20 127:23	submit 50:18 51:4	149:2 150:4 156:1	123:14 127:11	139:17 143:23
128:9 141:4,6,11	submitted 51:18	156:20,24 175:21	136:9	144:14 157:8
157:13 160:15	53:23,23 56:6	surge 102:14	talked 170:16	158:12
statements 48:13	Subsection 80:5	surges 102:13	talking 49:9 54:9	territory 77:6 89:5
55:21	81:12	surprise 89:8	79:4 124:7 130:20	test 59:5 69:11
states 121:17	subsequent 119:1	surprised 144:1,4	134:18 141:3	70:16 111:4,24
127:13 129:19	substantially	survives 166:23	144:10,11 158:9	112:4 114:6,8
161:11	161:14	suspect 178:21	161:18,21 162:20	115:11,17 116:6
statistical 70:16	successful 96:12	sustain 116:3 130:5	162:24 168:24	116:10,17 147:11
149:16 170:15	99:24	swear 72:13 73:3	talks 136:8	150:2,13,19 151:5
statute 85:7,8	sudden 80:16 81:7	78:2 92:15 110:4	target 66:11 172:3	151:7,9,9,10
statutes 65:6	sued 157:9	131:21	targeted 58:20	tested 147:12
statutory 64:23,25	sufficient 99:13	switch 57:6 97:16	targeting 171:11	testified 73:24 93:6
79:19 85:14 95:13	suggest 85:22 102:7	97:17	targets 171:8	103:24 110:11
stay 63:21	144:13	switching 80:9	tariff 50:7,10,15	115:14 117:24
step 137:19	suggested 154:10	sworn 73:23 93:5	51:20,21 57:18	132:11 142:10
steps 84:15 87:3	suggests 89:5 120:2	103:23 110:10	62:2	160:6 169:20
94:24 112:11	122:13	117:23 132:10	tariffs 51:4	testify 180:8
Steuerwalt 46:3	suite 45:4,14,19,24	160:5 169:19	technical 49:10	testimony 48:11
56:12 58:18 72:6	64:25 79:7 96:20	180:7	67:2 148:21 149:2	49:18 50:1 53:16
72:16,18,24 73:22	97:10 123:18	swung 60:7	149:23	53:18 54:2,5,9
74:8 78:5,16	summarize 95:17	symmetrical	technically 48:22	55:10,19 58:12,18
86:17 91:1 92:20	96:6 146:2 148:25	150:11	technique 143:8	60:21 62:7,19

65:9 66:15 68:9 71:19 74:9,9,11 74:17 75:4 78:18 78:20 81:10 88:11 88:12 93:15 95:24 96:25 104:10,13 105:12,24 106:8 106:15 108:12,17 110:22 111:1 112:17 113:9 114:1 115:20 117:4 118:9,11,22 118:25 119:7,8,17 119:21 120:1,8,18 121:6,13 122:25 125:17 126:13,24 130:20 132:23 133:2,15 134:3,13 134:22,24 136:10 137:1,20,24 138:20 139:14 141:11 145:19,22 148:25 151:13 154:7 157:1 161:23 170:6,11 171:5 174:15 180:6 testing 80:1 tests 149:16 150:3 thank 47:15 48:24 52:2,19 53:10 54:15,25 56:1 59:21,23 60:1 64:6,7,10 65:16 65:17,23,25 66:1 71:16,17 72:15 73:8,18,19 74:4 74:10 77:25 78:10 90:18,19,22 92:13 92:17,20,21,24 93:9 94:22 102:22 102:24 103:1,2,10 103:17 104:4,21 108:22 109:3,15 109:23 110:1,14	110:16 113:3 116:2 117:12,14 117:17 118:2,4 125:22 128:13,15 129:5,14 131:11 131:14,22 132:7 132:15,17,22 133:21,24 134:12 140:4 141:25 145:7,12 147:5,7 148:18 150:1 151:8 153:18 154:3 156:25 159:14,16,17,24 160:10 168:5 169:24 171:6 173:24 174:1 175:15,17 176:3 176:19 179:4 thee 151:4 theme 148:3 156:14 themes 149:10 theoretically 159:6 thereof 87:12 180:11 therms 159:1 thin 150:23 thing 52:3 54:17 55:8 61:14 87:13 88:4 107:14 119:15 123:22 138:12 139:22 170:22 175:3 things 77:14 83:24 84:24 112:2 114:21 125:8 133:12 136:19 137:2,18 143:24 143:25 144:10 154:21 157:23 158:10 173:7 think 49:1 51:8,11 51:11 52:3,5 53:20 54:6,11 63:23 71:1,13	72:10 77:11,11 78:24 81:8 82:23 83:8,18 86:1 87:6 87:15,23,24,25 88:3 89:24 91:11 92:2,5 95:11 98:17 105:4 107:2 107:13,19,22 109:3 111:10 118:22 120:18 122:20 123:5,13 123:22 124:4,5 125:8,11,17 133:9 133:9,12,14 134:6 135:25 137:18 138:14,21 139:1,3 139:22 142:5 143:17,22 144:18 147:1,5 149:15,20 149:20 150:5 153:12 155:12 157:9 163:25 164:3 167:14 170:25 172:11 173:7,10 174:16 174:20,22 175:1 175:11 176:4,5,12 176:25 177:8,10 177:20 178:10,21 thinking 76:18 133:7,11 thinks 136:17 third 69:19 89:5 154:4,21 Thomas 45:12 thoroughly 59:18 thought 50:2 54:8 59:19 84:19 92:5 thoughtful 80:13 thoughts 87:6 thread 86:23 three 68:6 113:13 133:16,17 135:25 136:3,6,16,21 150:24 151:2	152:19 161:10 162:2 167:4 threshold 147:23 throwing 146:13 tied 82:6 tiered 121:8 time 47:2 48:18 51:18 55:3 60:25 63:20 66:4 71:13 72:4 75:12 77:20 78:4 86:18 105:4 115:1 124:23 125:21 134:9 138:18 144:25 146:6,21,22 147:16 171:19 172:10,12 173:1,5 173:9,17 174:15 174:17 176:12,25 timely 126:7 times 61:9 135:12 135:18 136:4 146:20 timing 140:14 titled 152:7 today 47:1,7 48:5,9 48:20 49:2 54:18 56:3 59:21 60:11 60:18 61:15 62:10 70:20 97:2 140:15 144:14 170:18 179:3 Todd 46:6 57:24 103:18,22 told 71:11 tons 157:7 tool 85:6,11 96:22 96:23 121:9 tools 56:8 65:4 80:23 84:25 94:20 top 50:7 79:16,18 88:17 101:21 105:5 138:1 topic 88:10 145:20 148:18 153:19	154:5 total 66:11 94:11 97:5 113:21 135:12,17 touch 54:17 track 141:2 tracked 58:2 tracker 57:17 58:6 58:19 109:8,16,20 135:22 136:18,22 160:25 162:3 165:16 trackers 57:25 61:3 133:11 136:4 tracking 60:6,14,24 61:16 63:2 64:2 75:1 102:5 119:5 119:12 133:4 168:20,22 tracks 58:5 trade 147:15,16,18 154:14 trading 146:12,20 148:9 155:10 trajectory 66:9 transcribed 180:5 transcript 180:6 transition 64:1 80:13,20 transitioning 81:3 transitions 80:6,15 81:14 86:8 transmission 67:4 Transportation 44:2,5 45:8 47:4 treat 66:18 68:12 176:17 treated 63:3 trends 64:17 tried 154:24 trigger 147:23 triggered 69:1,14 116:10 true 61:7 82:21,23 98:24 102:8
--	---	--	--	--

<p>140:25 148:9 155:12 180:5 trued 57:19 truly 117:3 trust 88:5 truth 180:8,8,8 try 83:10 97:8 101:6,14 102:10 107:3 138:6,10 trying 50:17 91:11 101:10 124:18 141:16 142:1 158:3 165:2 Tuesday 177:4,5,6 turn 48:13 49:15 59:24 65:18 67:15 72:24 74:11 75:4 88:11 92:14 93:17 95:23 105:11 106:14 110:25 114:3 120:10 122:9 126:23 134:12,24 137:20 145:21 147:19 148:24,24 151:23 154:6 156:22 turning 154:4 turns 146:19 147:20 149:17 157:10 twenty 68:20 two 101:25 118:21 127:1 130:23 135:2,9 136:14,20 138:21 144:3,7,23 148:3 152:1 171:4 174:15 type 98:25 123:23 types 118:24 124:14 125:11 typical 159:1 typically 112:14</p> <hr/> <p style="text-align: center;">U</p> <p>UG-230470 61:25</p>	<p>67:9 UG-230968 44:6 ultimately 66:22 71:2 86:11 96:15 99:8 104:13 120:6 unbelievably 146:7 uncertainty 102:1 unclarity 112:14 unclear 111:4 uncured 99:10 underlying 151:18 understand 53:16 94:8 111:13 123:14 135:19 156:16 158:5 175:21 understanding 53:2 61:2 71:23 72:2 109:12 129:10 137:6 147:25 understood 171:6 undertake 87:20 underway 86:9 undoubtedly 142:4 Unfortunately 114:25 UNIDENTIFIED 73:9 uninclined 178:20 unit 155:17,18 171:9,11,21 172:3 172:23 176:9,18 United 121:17 units 150:14 154:16 154:22 156:4,8,18 171:25 172:5,9,13 172:17,18 173:1 173:13,17 174:12 174:18 universe 92:3 unknowns 123:24 unmute 48:23 49:6 unquote 62:4 67:16 68:2 125:3</p>	<p>update 144:8 updated 52:17 64:14 upside 162:24 165:17,24 urge 71:15 urgency 107:18,24 use 69:1 71:3 82:12 82:22,24 107:15 148:3,21 149:3,10 149:13,21 151:22 152:14 159:3 170:19,19 172:2,5 177:13 useful 78:23 133:13 139:4 uses 66:5 147:23 usually 51:5 utilities 44:2,5 45:8 47:4 57:15,21 64:6 66:6 67:11 80:21 81:15,21 82:12 84:4 95:21 106:18 115:4 121:8,12 122:13 123:17 127:9 129:2,24,25 144:5 utility 56:9,25 57:11,24 58:3,5,7 65:3 67:1 82:16 82:23 83:4,6,12 83:25 85:2 106:23 107:11,19 108:4,7 115:8 116:6 121:20 125:6,8,10 125:12,13,14 126:4,6,15 129:7 131:4 135:13,20 163:21 164:7,8,13 171:24 173:7,9 utility's 162:21,22 162:23,25 163:18 166:10 176:6 utilize 85:13</p>	<hr/> <p style="text-align: center;">V</p> <hr/> <p>Van 45:18 48:7 variable 82:14 83:13 variance 122:24 123:5,7 124:2,9 124:12,16,19,20 125:4,16 126:10 126:12,17,19 128:22 129:1,4 136:8,11,24 137:7 142:9 143:18 150:6 161:12,23 162:3,16 163:3 169:3 variances 119:22 120:4,14 122:14 122:23 123:4,12 124:6 135:22 variant 120:2 variety 108:5 175:4 various 65:6 69:12 version 50:12 versions 50:12 51:1 versus 47:9 107:25 109:8 129:3 162:17 167:4 vet 61:8 Vice 56:11 58:10 view 53:7 133:18 violate 147:17,21 violates 56:25 57:12 virtually 69:14 72:18 visual 151:10 vital 142:5 volatility 57:22 58:3,12 105:8 124:13 VOLUME 44:11 vulnerable 58:17 58:21</p> <hr/> <p style="text-align: center;">W</p> <hr/>	<p>WA 45:5,9,14,24 Waiting 71:5 Wall 101:19 want 48:8 49:5,15 49:22 51:25 52:22 54:17 55:8 61:14 63:4 68:6 71:18 81:13 88:14 103:3 103:4,4 127:11 131:15 133:2 141:18,21 144:8 144:14,20,24,24 151:21 156:12,13 160:18 161:17 165:7 167:9,13,14 175:21 177:12 wanted 50:4,6,8,10 171:25 wants 63:23 66:18 107:20 Washington 44:1,5 44:14 45:18 47:4 56:22 66:10 80:6 80:8 129:10,21 143:11,15 166:24 167:4 180:1,2 wasn't 170:11 172:10,10 watering 81:18 way 53:24 89:25 92:7 99:11 112:5 124:18 137:10 149:6,15 152:7 153:12 154:12 155:23 159:8,10 170:8 176:4 WD-3 152:25 Wealth 150:2,8,13 weather 155:21 week 177:6,7 welcome 125:23 wellbeing 68:3 went 163:10,10 176:11 weren't 51:8</p>
--	--	---	--	--

<p>135:22 165:17 Western 45:16 48:4 WHEREOF 180:12 wide 143:3,15 172:13 175:5,7,10 widely 147:12 William 46:13 169:14,18 willing 165:23,24 withdrawing 131:9 witness 46:2 59:2 68:9,17,24,24 69:9,13 70:8 72:12,19,21 73:5 73:10,22 74:1,3 78:2,13 86:20 92:15,21,23 93:4 93:8 103:16,22 104:1 105:24 106:7 109:24 110:5,9,13 117:16 117:22 118:1 125:23 131:19,21 131:25 132:9,14 141:25 145:6 159:16,24 160:1,2 160:4,9 167:16,17 167:24,25 168:1,2 169:12,18,23 174:4 176:3 180:7 180:12 witness' 105:21 witnesses 48:14,16 49:23 50:3 51:5 69:6 72:4,11 144:23 180:6 wonderful 101:10 Woodland 44:14 words 62:17 81:9 90:4 120:20 146:24 work 66:24 112:5 138:7 151:12 157:5 158:24</p>	<p>workable 69:20 worked 113:5 working 138:3 world 68:4 worries 132:3 worry 121:25 139:22 worse 146:25 147:19 wouldn't 96:16 97:21 98:2 115:4 122:19 125:4 137:4 142:19 147:20 163:17 164:13,17 165:21 175:24,25 write 78:23 wrong 54:11 98:10 wrote 81:24 121:5 WUTC 47:9</p> <hr/> <p style="text-align: center;">X</p> <hr/> <p>X 100:12 101:15</p> <hr/> <p style="text-align: center;">Y</p> <hr/> <p>yeah 95:9 101:14 165:4 167:24 year 63:17,25 79:11 79:17 82:3 98:9 98:13,14 99:9 100:6,6,7,12,22 101:7,8 138:6 142:11 144:7 146:11 147:6,6 148:11 157:16 158:8,9 year's 100:4 years 57:22 60:4 71:4 113:11,20 114:24 134:9 138:21 144:3,7,12 148:3 167:4 Yep 75:15 yesterday 154:2</p>	<hr/> <p style="text-align: center;">Z</p> <hr/> <p>zero 139:20 150:10 zone 155:4,5,5 Zoom 49:13</p> <hr/> <p style="text-align: center;">0</p> <hr/> <p>05/06/25 180:18</p> <hr/> <p style="text-align: center;">1</p> <hr/> <p>1 61:25 150:10 10 114:24 120:10 10:21 103:3 10:22 103:11 10:30 49:3 103:5 10:32 103:10 10:38 103:12 104 46:6 107 45:18 10885 45:4 109 46:7 11 74:15 75:4 122:12 11:50 145:8 11:57 145:9 110 46:8 111 50:12 57:18 58:1,16,24 59:15 62:10,15,21 63:6 75:18,25 112:11 118:23 119:14 138:17 118 46:9 12 124:24 12:58 179:6 128 46:9 13 120:10 156:25 159:7 132 46:10 14 127:1 130:20 134:12 140 46:11 176:11 176:16 145 46:11 176:12 176:16 15 88:11 108:15</p>	<p>178:10,13 1589 78:19 79:10 79:23 80:3 81:1 84:24 16 88:14 124:25 156:25 160 46:12 168 46:13 17 74:16 89:18 93:17 112:19 145:22 170 46:13 174 46:14 18 74:16 88:14 114:3 158:16 159:4 180 44:17 18th 177:7,13 19 74:11 93:17 1932 44:24 180:17</p> <hr/> <p style="text-align: center;">2</p> <hr/> <p>2 81:12 134:13 135:3 148:24,25 149:17 150:1 151:5,5 20 114:24 137:21 144:22 177:23 178:5,22 2000 45:14 2003 146:11 147:6 2017 127:3 130:17 2020 113:5 2022 130:22 2023 50:14 51:3 66:7,14 113:5 147:6 148:11,13 158:14 163:5,14 164:15 167:12,20 2024 44:13 47:2 58:20 163:15 177:19 180:5,12 2025 138:23 2026 138:23,24 139:6</p>	<p>2027 138:24 139:1 142:24 173:15,18 174:13 2028 138:24 2030 64:15 66:16 157:6,18 158:1,8 158:9,15,21 159:7 2040 64:16 2050 64:16 66:11 66:17 21st 178:3 22nd 50:14 51:3 23 180:12 230968 47:8 24 134:24 135:3 245,000 89:8 25 135:3 137:22 163:15,25 164:5 164:17 26 177:8 27 137:22 138:1 28 159:7</p> <hr/> <p style="text-align: center;">3</p> <hr/> <p>3 78:24 93:17 95:18 146:21 150:1 30 71:4 102:13,14 33 158:16 159:4 3rd 45:23</p> <hr/> <p style="text-align: center;">4</p> <hr/> <p>4 80:5,5 84:21 110:25 112:17 122:9,11 124:24 150:5 40128 45:9 430 45:19 44 44:17 45 163:10 48 163:6,10 4th 49:17</p> <hr/> <p style="text-align: center;">5</p> <hr/> <p>5 66:14 106:15 108:3 111:3</p>
---	--	--	--	---

134:13 135:3	9:00 47:2			
50s 143:7	90 46:4			
53,000 89:18	900,000 92:8			
<hr/>	90th 171:2			
6	93 46:5			
<hr/>	95.6 152:24			
6 54:1 105:11 154:7	97.5 146:8,23			
157:1 158:13	147:13,17,21			
60 163:25 178:12	149:21 171:2			
178:15,21	97214 45:19			
60s 143:7	98004-5579 45:5			
610 45:24	98104-1645 45:24			
621 44:14	98104-3188 45:14			
63 163:11 164:4	98504 44:14			
63.03 163:6	98504-0128 45:9			
6X 52:7 54:4	99.7 146:25			
<hr/>	9th 47:2			
7	9X 54:4			
<hr/>				
7 52:21 54:2,10				
105:11 106:15				
108:3,14 120:10				
122:12 158:13				
70,000 89:17				
700 45:4				
70A.65.005(2)				
64:13				
74 46:3				
75 146:8,21 147:17				
147:21 167:21				
75th 147:13				
78 46:4				
79 95:23 99:19				
7th 177:19				
7X 52:12 54:4				
<hr/>				
8				
<hr/>				
8 52:21 54:1 126:23				
126:25				
80 48:19				
800 45:13				
810 45:23				
82 66:10 94:10				
8X 54:4				
<hr/>				
9				
<hr/>				
9 44:13 105:11				
180:5				