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Indianapolis, Indiana  
June 21, 2007  
9:00 A.M. (EST)

(Reporter marked document for  
identification as Public's Exhibit  
No. 4)

(Reporter marked document for  
identification as Intervenor's -  
RC Exhibit No. F)

JUDGE STORMS: Let's go ahead and  
go back on the record.

Ms. Karn, you may continue with  
your questioning.

MS. KARN: Thank you, Your Honor.

1     **JOAN M. SOLLER**, a witness appearing on behalf of  
2                             the Public, having been  
3                             previously duly sworn, resumed  
4                             the Stand and testified further  
5                             as follows:

6

7     **CROSS-EXAMINATION, (Continuing)**

8             **QUESTIONS BY MS. KARN: (Continuing)**

9     Q   Let me take you back to yesterday when we were  
10       discussing the benefits of what the OUCC sees  
11       from IGCC, and we were talking about emissions  
12       from the plant such as NOx, SO2 and mercury.

13                         Do you -- Would you agree that  
14       Duke will also be required to meet the New  
15       Source Performance Standards for all emissions  
16       from this plant?

17    A   That's my understanding.

18    Q   Thank you. Now, let's move back to the  
19       off-system sales sharing mechanism which we  
20       were starting to go through.

21                         To kind of recap, Duke has a base  
22       amount in rates of \$14.7-some million, and  
23       for our purposes of the example, we'll just  
24       use \$14 million in base rates for revenues --  
25       as a credit to customers for off-system sales.

1 Do you agree with that?

2 A That's fine.

3 Q And I just wanted to go through kind of three  
4 different examples of off-system sales profits  
5 that Duke could make and clarify what  
6 percentage and what amount customers would get  
7 credit for and what amount the shareholders  
8 would get credit for in those circumstances.

9 The first instance is if Duke  
10 makes \$16 million in non-native sales.

11 Would you agree with me in that  
12 case the difference between the 14 and the 16  
13 is \$2 million, and --

14 A Yes.

15 Q -- shareholders would keep \$1 million of that,  
16 and customers would get credit for the other  
17 million plus the \$14 million that's already  
18 included in base rates?

19 A Yes.

20 Q Thank you. The next example: Let's say Duke  
21 makes less than the amount in base rates, less  
22 than 14 million. Let's say they make \$10  
23 million in a 12-month period.

24 In that case, customers would  
25 share the difference between \$10 million and

1       \$14 million, the \$4 million; is that right?

2   A   Yes.

3   Q   And so in that case, shareholders or customers  
4       would get a credit for \$12 million in base  
5       rates as opposed to the \$14 million that was  
6       already in base rates before the effect of the  
7       rider?

8   A   That's my understanding.

9   Q   And in that case, shareholders would get  
10       nothing additional in that case; is that your  
11       understanding?

12   A   Yes, the Company would receive 12 million -- a  
13       credit for 12 million.

14   Q   Would it be the Company or the customers who  
15       are getting credit for the 12 million?

16   A   I'm sorry, the customers.

17   Q   Okay; thank you.

18               And then let's take the opposite  
19       example, let's say for a 12-month period Duke  
20       really does have a loss for the year, either  
21       zero or a loss. We can treat those the same.

22               Is it your understanding that the  
23       mechanism works so customers aren't at risk  
24       for losses; so, we can treat a loss the same  
25       as zero for our calculation purposes; is that

1       your understanding?

2    A   A zero versus a negative?

3    Q   Yes.

4    A   I've not reviewed an example of that.  If  
5       you'd like to walk through that --

6    Q   Okay.

7    A   -- that's fine.

8    Q   Well, can you just accept, subject to check,  
9       that the mechanism would work that if there  
10       was a loss or we can use the example of zero.  
11       Let's just use -- I mean, we have no -- we're  
12       flat; we have no off-system sales profit for  
13       the year.

14                   In that case, customers and  
15       shareholders would split the difference  
16       between the \$14 million and zero, which is \$7  
17       million; is that correct?

18   A   That's my understanding.

19   Q   So, in that case, the worst case scenario from  
20       the Company's and the customers' point of view  
21       of the off-system sales sharing incentive,  
22       customers would get credit in rates for only  
23       \$7 million instead of the 14, and  
24       shareholders, even though they didn't have any  
25       off-system sales for -- profits for the year,

1       would still be giving away, essentially, to  
2       customers \$7 million?

3               MR. HELMEN:  Counsel, just to be  
4       clear, you're giving a hypothetical example;  
5       correct?  You're not testifying here as to  
6       what the settlement or what the rate order  
7       says, are you?

8               MS. KARN:  No.  I'm just giving  
9       hypothetical examples and seeing if Ms. Soller  
10      agrees with me on the calculation.

11              MR. HELMEN:  Okay; thanks.

12              MR. STEWART:  I'd like to  
13      interject also, Your Honor, that it is not  
14      clear to me how this is cross-examination of  
15      Mrs. Soller's or Ms. Soller's testimony.  She  
16      proposes something specific going forward for  
17      the Edwardsport plant, and I just -- I don't  
18      know how what came out of the last rate order  
19      and what's existing relates as far as  
20      cross-examination as opposed to asking Ms.  
21      Soller what it is she's proposing and how that  
22      might differ.

23              JUDGE STORMS:  Is that an  
24      objection from either one of you?

25              MR. STEWART:  Yes, I'll object.

1 JUDGE STORMS: Okay. Well, I'll  
2 overrule the objection.

3 Ms. Karn, if there is a point to  
4 be made, if you could get to the point, and  
5 let us move through the hearing process, that  
6 would be useful.

7 Q (Ms. Karn continuing) Do you know in the  
8 three proceedings that Duke has had with this  
9 off-system sales sharing mechanism whether, as  
10 a practical purpose, shareholders have ever  
11 gotten to keep something over the \$14 million?

12 A It is my understanding that they have not,  
13 that the results of the off-system sales have  
14 been less than \$14 million during those three  
15 proceedings.

16 Q Okay; thank you.

17 You are familiar with Duke's fuel  
18 clause proceedings generally, are you not?

19 A Yes, I am.

20 Q Would you agree that in those proceedings Duke  
21 does this after-the-fact stack of its  
22 generation resources to allocate the resources  
23 between native load and non-native load?

24 MR. STEWART: Your Honor, I'm  
25 going to ask again: If this is cross-

1 examination to something in Ms. Soller's  
2 testimony, then, I have no objection, but I  
3 don't see the connection myself; so, I'll  
4 object.

5 JUDGE STORMS: I just need to know  
6 if there is an objection or not for my  
7 purposes.

8 MR. STEWART: I conclude there is  
9 no connection; so, yes, I'm objecting.

10 JUDGE STORMS: I'm sorry, you  
11 trailed off from the microphone there.

12 MS. KARN: Can I respond?

13 JUDGE STORMS: Yes, you may.

14 MS. KARN: Thank you. Ms. Soller  
15 does propose in her testimony a different  
16 off-system sales sharing mechanism for this  
17 plant going forward, and I think it is proper  
18 cross-examination, and Duke's position is that  
19 the off-system sales sharing mechanism that's  
20 in place is sufficient to protect customers'  
21 interests, and I think it is fair  
22 cross-examination to review how that mechanism  
23 works with Ms. Soller as well as what the  
24 results of that mechanism have been to date.

25 JUDGE STORMS: I'll overrule the



1 objection, and I'll allow the questioning to  
2 continue for a bit, but I'd like to get to the  
3 point that's to be made and then be able to  
4 move along.

5 Q (Ms. Karn continuing) Are you familiar with  
6 statements in Duke's testimony that the  
7 Edwardsport IGCC plant is expected to be one  
8 of the lowest cost plants from a fuel cost  
9 dispatch perspective?

10 A I've not seen a cost per megawatt hour  
11 published for the Edwardsport plant; so, I'm  
12 not comfortable answering that question.

13 Q Would you agree generally that base-load  
14 plants would be economically dispatched  
15 towards the bottom of the stack as opposed to  
16 the top of the stack?

17 A Yes, I would agree with that statement.

18 MS. KARN: That's all I have, Your  
19 Honor.

20 JUDGE STORMS: Redirect?

21 MR. HELMEN: Thank you, Your  
22 Honor.

23

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1     **REDIRECT EXAMINATION OF MS. JOAN M. SOLLER,**

2             **QUESTIONS BY MR. HELMEN:**

3     Q   Ms. Soller, did you participate in Duke's last  
4         base rate case here in Indiana?

5     A   No, I did not.

6     Q   Going back to a discussion yesterday about our  
7         agency's review of Duke's IRP last year, did  
8         we file comments on that review last summer?

9     A   Yes, we did file comments.

10    Q   Mr. Polk was asking you questions about Duke's  
11         DSM initiatives and discussed your involvement  
12         as well as his involvement in going forward  
13         with DSM work.

14                     Tell me, do you anticipate the  
15         Commission providing any input in the  
16         utilities -- to the utilities in the generic  
17         DSM docket?

18    A   Yes. I think the generic proceeding will be a  
19         good opportunity for all of us to learn what  
20         the Commission would like for us to pursue and  
21         focus upon in terms of DSM.

22    Q   You were asked some questions yesterday about  
23         the timing of the filing of your amended  
24         testimony and the timing of informing the  
25         Commission of when you amended that testimony.

1                   Tell me, did you leave decisions  
2       as to who to notify and when up to your crack  
3       legal staff?

4    A   Yes, I did.

5    Q   Okay; thanks.

6                   Finally, I have placed before you  
7       what's been marked for identification purposes  
8       as Public's Exhibit No. 4, and I'd ask if you  
9       can identify those?

10   A   This appears to be a set of letters and  
11       communications from customers regarding the  
12       IGCC plant.

13   Q   After you were questioned yesterday by Mr.  
14       Polk, did you go back to the agency and have  
15       collected the documents that we had received  
16       from presumably ratepayers from across Indiana  
17       on this project?

18   A   Yes, I did with the help of our legal staff.

19   Q   Thank you.

20                   MR. HELMEN:   Your Honor, I have  
21       asked all the parties and nobody objects to  
22       the offering of this exhibit.   So, at this  
23       time, we'd move for leave to file Public's  
24       Exhibit No. 4.

25                   JUDGE STORMS:   We'll show Public's

1       Exhibit No. 4 admitted into this cause.

2

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4                       (PUBLIC'S EXHIBIT NO. 4, CONSISTING

5                       OF VARIOUS CUSTOMER COMMUNICATIONS,

6                       ADMITTED INTO EVIDENCE.)

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1                   MR. HELMEN:   That's all I have.

2       Thank you.

3                   JUDGE STORMS:   Ms. Soller, thank  
4       you very much for your testimony.

5                   WITNESS SOLLER:   Thank you.

6                   JUDGE STORMS:   You're excused.

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14                   (WITNESS JOAN M. SOLLER EXCUSED)

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1 (Reporter marked document for  
2 identification as Public's Exhibit  
3 No. 2)  
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5 JUDGE STORMS: Mr. Helmen, you may  
6 call your next witness.

7 MR. HELMEN: Actually, Mr. Reed  
8 will, Your Honor.

9 MR. REED: Thank you, Your Honor.

10 JUDGE STORMS: Sorry. Mr. Reed?

11 MR. REED: The Public calls Ms.  
12 Barbara A. Smith.

13 JUDGE STORMS: Please proceed.

14 MR. REED: Thank you, Your Honor.  
15

16 **BARBARA A. SMITH**, a witness appearing on behalf  
17 of the Public, having been  
18 first duly sworn, testified as  
19 follows:  
20

21 **DIRECT EXAMINATION,**

22 **QUESTIONS BY MR. REED:**

23 Q Good morning, Ms. Smith. Do you have before  
24 you what has been marked as Public's Exhibit  
25 No. 2?

1 A Yes, I do.

2 Q Can you identify that document, please?

3 A That is a copy of my prefiled testimony.

4 Q Thank you, ma'am.

5 Ms. Smith, by whom and in what  
6 capacity are you employed?

7 A I'm employed as a Utility Analyst at the  
8 Indiana Office of the Utility Consumer  
9 Counselor.

10 Q Ms. Smith, in Public's Exhibit No. 2, which we  
11 were discussing earlier, can you tell me if  
12 you have any changes or corrections that need  
13 to be made to this testimony?

14 A No, I do not.

15 Q And if I asked you the questions contained in  
16 this testimony today, would your answers be  
17 substantially the same?

18 A Yes, they would.

19 Q Was this testimony prepared by you or under  
20 your supervision?

21 A Yes.

22 Q Thank you.

23 MR. REED: Your Honor, with that,  
24 the Public offers Public's Exhibit No. 2.

25 JUDGE STORMS: If there is no

1 objection, we'll show Public's Exhibit No. 2  
2 admitted into this cause.

3 MR. REED: Thank you, Your Honor.

4

5 (PUBLIC'S EXHIBIT NO. 2, BEING THE  
6 PREFILED TESTIMONY OF MS. BARBARA  
7 A. SMITH, WITH ATTACHMENTS A  
8 THROUGH F, INCLUSIVE, ATTACHED  
9 THERETO, ADMITTED INTO EVIDENCE.)

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1                   MR. REED: Ms. Smith is available  
2       for cross.

3                   JUDGE STORMS: Thank you.  
4       Ms. Becker?

5                   MS. BECKER: No questions, Your  
6       Honor.

7                   JUDGE STORMS: Mr. Stewart?

8                   MR. STEWART: Thank you.

9

10   **CROSS-EXAMINATION OF MS. BARBARA A. SMITH,**

11       **QUESTIONS BY MR. STEWART:**

12   Q Good morning.

13   A Good morning.

14   Q A few general questions first.

15                   You don't hold yourself out to be  
16       a geologist, do you?

17   A No, I do not.

18   Q And you're not testifying here as an expert in  
19       carbon capture or the science, technology or  
20       cost of carbon capture, are you?

21   A I consider myself an expert in the respect  
22       that I have gathered many documents. I've  
23       spoken with many experts on the topic.

24   Q And has that all taken place since Duke filed  
25       its petition in this case?

1 A Yes.

2 Q Are you an engineer?

3 A I'm not a licensed engineer, no.

4 Q Do you believe that you have a greater or more  
5 detailed or in-depth understanding than Dr.  
6 Shilling regarding the impacts of carbon  
7 capture on the reduction of plant capacity?

8 A Could you repeat the question?

9 Q Do you believe that you have a greater or more  
10 detailed or more in-depth understanding than  
11 Dr. Shilling of the impacts of carbon capture  
12 on the reduction of plant capacity?

13 A In my research, I didn't focus on plant  
14 capacity. What I found from the documents  
15 that I have looked at, which was a wide range  
16 of documents, is that it is very plant  
17 specific, and it is difficult to say without  
18 knowing the exact plant design what that  
19 effect would be.

20 Q Okay. Well, Dr. Shilling, who's testified  
21 here relating to the reduction of the plant  
22 capacity, would have specific knowledge to  
23 this plant; is that correct?

24 A I don't know that.

25 Q You don't know who Dr. Shilling is?

1 A I know he has testified in this case.

2 Q Do you know in what position and capacity he

3 testified?

4 A I don't recall.

5 Q Do you have a greater or more detailed or more

6 in-depth understanding than Dr. Shilling

7 relating to the cost to modify the plant to

8 permit carbon capture?

9 A My understanding of what it would cost to add

10 is based partially on Duke's representatives

11 because they have a thorough understanding of

12 the plant design.

13 Q Well, let's turn to Duke's representatives.

14 Let's talk about Mr. Moreland; okay?

15 A Okay.

16 Q Do you have a greater or more detailed or more

17 in-depth understanding than Mr. Moreland of

18 the cost estimates for carbon capture and

19 sequestration for purposes of the Edwardsport

20 IGCC plant?

21 A I can't say. I know --

22 Q If your knowledge comes from Mr. Moreland,

23 then, I guess I'm asking: Do you look to him

24 for the answers to the questions?

25 A My focus is more on the numbers and the

1 information presented by Witness Zupan and  
2 Witness Radcliffe.

3 Q Well, neither of those witnesses had testified  
4 when you filed your testimony, had they?

5 A I believe they had.

6 Q I believe they just filed rebuttal testimony.

7 A Okay. We did have data requests that were  
8 part of our conclusion.

9 Q Did you review the data requests that the Duke  
10 representatives provided to the Industrial  
11 Group?

12 A I don't recall.

13 Q Were you here when Mr. Moreland testified?

14 A No, I was not.

15 Q Let's take a specific look at a few items in  
16 your testimony. Let's start on Page 5, and my  
17 understanding of your testimony is that it is  
18 a review of a variety of documents that you've  
19 looked at since Duke filed its case as well as  
20 some information that you received from Duke  
21 personnel primarily; is that right?

22 A Correct, and the purpose is to just gather as  
23 much information as I could on the subject of  
24 carbon capture and sequestration so that the  
25 Commission can make a knowledgeable decision

1       in this case.

2   Q   Now, at the bottom of Page 5, you represent a  
3       whitepaper from the Stroock law firm. Do you  
4       see that?

5   A   Yes.

6   Q   Do you know who the Stroock law firm is?

7   A   I don't know other than they're a law firm.

8   Q   Do you know who their clients are?

9   A   No, I do not.

10   Q   Do you know anything about the people who  
11       wrote the paper?

12   A   Well, the paper is simply just gathering  
13       existing regulations and pending policies.  
14       So, it is just mainly a compilation or, I  
15       guess, a regurgitation of policy statuses.

16   Q   So you're not familiar with the firm or who  
17       their clients might be or anything about the  
18       people who did the compilation?

19   A   I don't know whether that's real relevant  
20       especially since this paper also agrees with  
21       some other carbon regulations that are  
22       presented by Witness Schlissel and Thompson.

23   Q   If there is a relevancy issue, your lawyer can  
24       object to it, but I asked you the question:  
25       You don't know anything about the law firm,

1       who its clients are or the people who wrote  
2       the paper for the law firm; is that correct?

3    A   I do not.

4    Q   Now, on Page 6, you state at Lines 11 through  
5       12, "there was general support for including  
6       carbon in the list of emissions to be reduced  
7       by 'clean coal' technology.", and then you  
8       reference an Engrossed Senate Bill 206.

9                       Now, were you -- did you  
10       participate significantly at the Legislature  
11       in the past session?

12   A   I did not.

13   Q   Did you testify at the Legislature regarding  
14       this issue?

15   A   I did not.

16   Q   Okay. Did Senate Bill 206 pass?

17   A   Not in this past session, no.

18   Q   Did you sit in the hearings when Senate Bill  
19       206 or any other bill relating to carbon in  
20       the sense that you've cited it here were  
21       discussed by the Legislature?

22   A   No, but I did keep up on the progress on-line.

23   Q   What's the basis for suggesting that there is  
24       general support for including carbon?

25   A   Through updates that were on the web site

1       regarding this bill.

2   Q   Updates of the bill?

3   A   And conversations that went on around the  
4       bill.

5   Q   Well, what did you see or what sites are you  
6       talking about that would describe  
7       conversations?

8   A   Well, I would have to look back specifically  
9       and get back with you on that.

10  Q   Who were the people having the conversation?

11  A   Again, I would have to look.  It's been awhile  
12       since I've looked at that.  I can do that and  
13       get back with you, if you'd like.

14  Q   I don't think that's necessary, but thank you.

15                   Now, on Page 10, you reference --  
16       at Lines 12 through 14, you reference that  
17       Duke will be transporting approximately 10,000  
18       tons of CO2 to inject into the well sites at a  
19       Kentucky location; is that right?

20  A   That's what my testimony says, yes.

21  Q   10,000 tons over what period of time?  Is that  
22       10,000 tons a year?

23  A   I believe so, but Witness Radcliffe would be  
24       better prepared to answer that question.

25  Q   Where is the carbon coming from?

1 A Again, I would defer that answer to  
2 Ms. Radcliffe.

3 Q What type of geological strata would be  
4 injected into -- in Kentucky as compared to  
5 what exists at the Edwardsport plant?

6 A Again, I would defer that to Ms. Radcliffe.

7 Q But the answer is you don't know any of those;  
8 is that right?

9 A Correct.

10 Q Now, on Page 11, you say that, "capital costs  
11 for a 500 megawatt PC plant are approximately  
12 \$33 million less than the same-sized IGCC  
13 plant when neither has CO2 capture equipment."  
14 Do you see that at Lines 14 and 15?

15 A Yes.

16 Q I was talking to Witness Soller yesterday, and  
17 she indicated that for a 500 megawatt plant,  
18 at least my understanding of her testimony,  
19 there is a 16 percent difference, and  
20 16 percent of 2 billion is 320 million; so,  
21 I'm curious how we have such a different scale  
22 here?

23 A I'm not sure what source she was using, but  
24 the source that I'm stating here, this was the  
25 figures.



1 Q But you found a source that said that? Did  
2 you do any independent research to determine  
3 whether it was accurate?

4 A The OUCC did no independent research; however,  
5 this figure was typical of other sources.

6 Q Did you compare --

7 A And there is a wide range of figures; so, no  
8 one can pinpoint that it will be exactly this  
9 cost. Many things affect it. It could be the  
10 plant design; the mode of transportation.  
11 There is a lot of different things that could  
12 cause a range of costs.

13 Q From 33 million to 320 million?

14 A You know, it is possible. I don't know, but I  
15 know there is a big range.

16 Q Do you believe that your education and  
17 experience and background when combined with  
18 the review of articles since the filing of  
19 this case provides you with any basis for  
20 disagreeing with the opinions expressed before  
21 this Commission over the last few days by Dr.  
22 Shilling or Mr. Moreland?

23 A I believe it does. I mean, I wasn't selective  
24 on the material that I reviewed. I looked at  
25 a wide range of materials. I spoke to people

1 from the EPA, from the Midwest Regional Carbon  
2 Sequestration Partnership, and, you know, I  
3 feel that I'm qualified to make a statement  
4 and have an opinion.

5 Q Thank you.

6 MR. STEWART: That's all I have.

7 JUDGE STORMS: Mr. Polk, your  
8 witness.

9 MR. POLK: Thank you, Your Honor.

10

11 **CROSS-EXAMINATION OF MS. BARBARA A. SMITH,**

12 **QUESTIONS BY MR. POLK:**

13 Q Now, Ms. Smith, when did you join the OUCC?

14 A October 2006.

15 Q October of 2006.

16 A I believe that's on the first page of my  
17 testimony.

18 Q Right. And who did you work for before  
19 joining the OUCC?

20 A As it says on Page 1, Vectren.

21 Q And when did you stop working for Vectren?

22 A October 2006.

23 Q And when was -- And Vectren is the Joint  
24 Petitioner in this case; is that correct?

25 A I believe they were. I'm not sure if they

1       still are. I don't know legally how that  
2       works. They were at one time.

3   Q   If you had continued to work at Vectren, would  
4       you have been a Vectren witness in this  
5       proceeding?

6                   MR. REED:  Objection, Your Honor.  
7       That calls for speculation on Ms. Smith's  
8       part.

9                   JUDGE STORMS:  Your response?

10                  MR. POLK:  It may be speculation  
11       if she had no information, but it is possible  
12       that they discussed the case prior to her  
13       leaving and had discussed whether she would be  
14       a witness or not. She can either testify as  
15       to having knowledge or not having knowledge.

16                  JUDGE STORMS:  I'll sustain the  
17       objection.

18   Q   Can you tell me how the OUCC decided on the  
19       level of 20 percent for carbon capture and  
20       sequestration?

21   A   Sure. It was a combination of several  
22       factors. Partially, it was through  
23       conversations with Witness Zupan, basically,  
24       from his response to our Data Request 3.24  
25       where he, you know, kind of gives an

1 explanation similar to what Witness Cortez did  
2 yesterday on the 20 percent and discusses the  
3 cost. He also discusses the process.

4 The unshifted capture can be  
5 acquired from that 15 to 20 percent range  
6 without more equipment being added on to the  
7 plant, and then it just makes sense to, you  
8 know, not bite off too much at once. This is  
9 not really new technology, but it is a new  
10 application of the technology, and so, it just  
11 makes sense when you're going into something  
12 like that to start off small and not start off  
13 large, or as Witness Cortez said, walk before  
14 you run.

15 Q What are the estimated costs for 20 percent  
16 carbon capture and sequestration?

17 A According to Data Request 3.24, if you'd give  
18 me a minute to turn to that, Witness Dennis  
19 Zupan states that 20 percent CO2 capture,  
20 which is approximately 800,000 tons a year,  
21 and sequestration scenario will cost around  
22 \$80 million.

23 Q Is that the OUCC's estimate or is that Duke's  
24 estimate?

25 A That is Duke's estimate.

1 Q Did the OUCC prepare its own estimate?  
2 A Did we prepare our own estimate?  
3 Q Yes.  
4 A No, we did not.  
5 Q I noticed when you were talking with  
6 Mr. Stewart, you deferred a lot to Ms.  
7 Radcliffe. Is Ms. Radcliffe an OUCC witness?  
8 A No, she's not.  
9 Q Okay.  
10 A The \$80 million is very -- everything is very  
11 site specific; so, I think that -- I've read  
12 different estimates, but it really comes down  
13 to the actual design of the plant.  
14 Q Has the OUCC performed or commissioned an  
15 independent study to look at the technical  
16 feasibility of 20 percent storage of CO2  
17 emitted at the Edwardsport plant?  
18 A We have not performed an independent study;  
19 however, from the material that I've read, it  
20 is very feasible in the Midwest, given the  
21 geology in the area and the area surrounding  
22 it.  
23 Q And that's the material provided to you by  
24 Duke?  
25 A No.

1 Q Can you identify all the electric generating  
2 plants currently in operation in the United  
3 States that utilize 20 percent carbon capture  
4 and sequestration?

5 A You said electric generating plants within the  
6 United States?

7 Q Yes.

8 A Okay. I don't know of any operational in the  
9 United States; however, my testimony on Page 8  
10 lists three plants outside the United States  
11 that --

12 Q I understand. I asked if you could identify  
13 any inside the United States.

14 A Not generating plants within the United  
15 States, no.

16 Q Can you identify any facilities that are  
17 sequestering more than 700,000 tons of CO2 a  
18 year?

19 A Yes. Are you still talking inside the United  
20 States?

21 Q Inside the United States.

22 A Not to my knowledge.

23 Q Electric generating plants in the world?

24 A Pardon?

25 Q Electric generating plants in the world?

1 A Not to my knowledge, but I'd have to check on  
2 that. There may be.

3 Q What are the environmental impacts with  
4 respect to storing CO2 underground in a saline  
5 aquifer?

6 A Are you talking all environmental impacts that  
7 possibly could happen?

8 Q Well, we could start with the big ones. Can  
9 you talk about any of them?

10 A I guess I'm not sure of your question. It  
11 seems broad.

12 Q Can you identify any environmental impacts  
13 related to sequestering CO2 in a saline  
14 aquifer?

15 A Well, it depends on the situation.

16 Q Can you tell me what the legal liabilities  
17 associated with storing CO2 underground would  
18 be?

19 MR. REED: Objection, Your Honor.  
20 That calls for a legal conclusion.

21 JUDGE STORMS: Your response, Mr.  
22 Polk?

23 MR. POLK: Let me rephrase the  
24 question.

25 JUDGE STORMS: I'll sustain the

1 objection.

2 You may rephrase.

3 Q Can you tell me what liabilities a company  
4 would face with respect to storing CO2  
5 underground?

6 MR. REED: Your Honor, I'd make  
7 the same objection again. There is no  
8 difference between the two other than he  
9 substituted the phrase liability, and the  
10 determination of liability, again, is a legal  
11 question.

12 MR. POLK: Liability can be  
13 discussed by, you know, insurance people. It  
14 can be economic liabilities. There can be  
15 market liabilities. There are all sorts of  
16 liabilities.

17 JUDGE STORMS: I'll sustain the  
18 objection.

19 Perhaps you can make it a bit more  
20 specific to the point that you want to make,  
21 Mr. Polk, or you may rephrase.

22 Q Ms. Smith, are you aware of any laws or  
23 regulations in place addressing the legal  
24 liabilities of carbon capture and  
25 sequestration?



1                   MR. REED: Once again, Your Honor,  
2       I'll object on the grounds that it calls for a  
3       legal conclusion. Ms. Smith may be aware of  
4       laws, but as she has testified, she's not an  
5       attorney. Therefore, her ability to determine  
6       whether a law applies to liability calls for a  
7       legal conclusion on her part once again.

8                   JUDGE STORMS: I'll overrule that  
9       objection and allow Ms. Smith to answer to the  
10      extent that she knows.

11   A    Could you repeat the question, please?

12   Q    Certainly. Are you aware of any laws or  
13       regulations in place addressing the legal  
14       liability of carbon capture and sequestration?

15   A    From my understanding, those are still being  
16       discussed; so, there is no existing -- there  
17       have been several forums where that has been  
18       discussed, but nothing is established, it's my  
19       understanding.

20                  JUDGE STORMS: Let's go off the  
21       record for one moment.

22

23                               (Off-the-Record Discussion)

24

25                  JUDGE STORMS: Let's go ahead and

1 go back on the record.

2 MR. POLK: Thank you, Ms. Smith.

3 I don't have any further questions for this  
4 witness, Your Honor.

5 JUDGE STORMS: Thank you, Mr.  
6 Polk.

7 Mr. Hartley?

8 MR. HARTLEY: Thank you, Your  
9 Honor.

10

11 **CROSS-EXAMINATION OF MS. BARBARA A. SMITH,**

12 **QUESTIONS BY MR. HARTLEY:**

13 Q Ms. Smith, could you turn to Page 3 of your  
14 testimony?

15 A I'm there.

16 Q Down at Lines 16 and 17, the first clause of  
17 that sentence says, "New, super-critical  
18 pulverized coal plants burn coal cleaner and  
19 more efficiently . . ."

20 I just want to confirm that your  
21 intent there is in comparison to traditional  
22 PC plants?

23 A Correct.

24 Q And you're not comparing them in that regard  
25 to IGCC plants; is that correct?

1 A That is correct.

2 Q In fact, an IGCC plant emits less sulfur and  
3 nitrogen oxide and mercury and other regulated  
4 pollutants; is that correct --

5 A Yes.

6 Q -- than even a super critical PC?

7 A Correct.

8 Q Thank you.

9 MR. HARTLEY: No further  
10 questions, Your Honor.

11 JUDGE STORMS: Thank you.  
12 Duke, your witness.

13 MR. DuMOND: Thank you, Your  
14 Honor.

15

16 **CROSS-EXAMINATION OF MS. BARBARA A. SMITH,**

17 **QUESTIONS BY MR. DuMOND:**

18 Q Good morning, Ms. Smith.

19 A Good morning.

20 Q I just have a few questions.

21 You are aware that Duke Energy  
22 Indiana did not study carbon capture with the  
23 FEED study?

24 A I am.

25 Q And Duke Energy has not completed any

1 preliminary engineering with respect to carbon  
2 capture?

3 A I understand that.

4 Q Were you here for Dr. Shilling's testimony?

5 A No, I was not.

6 Q Are you aware that GE is studying how to  
7 implement carbon capture into its reference  
8 plant?

9 A Yes.

10 Q Does it make sense to you that Duke Energy  
11 Indiana would need to receive further  
12 information from GE and conduct further  
13 analysis before it will have a full  
14 understanding of how equipment and processes  
15 will be impacted by the incorporation of  
16 carbon capture equipment into the design?

17 A Yes, I understand that.

18 MR. DuMOND: Nothing further.

19 JUDGE STORMS: Redirect?

20 MR. REED: Thank you, Your Honor.

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1     **REDIRECT EXAMINATION OF MS. BARBARA A. SMITH,**

2     **QUESTIONS BY MR. REED:**

3     Q   Ms. Smith, in your opinion, will a  
4         demonstration of a carbon capture and  
5         sequestration project provide actual cost  
6         information?

7     A   Could you repeat that?

8     Q   Would a demonstration project of carbon  
9         capture and sequestration provide actual cost  
10        information?

11    A   Yes.

12    Q   Thank you, ma'am.

13                   MR. REED:   Your Honor, I have  
14         nothing further.

15                   JUDGE STORMS:   Ms. Smith, thank  
16         you very much for your testimony.   You're  
17         excused.

18

19

20

21                   (WITNESS BARBARA A. SMITH EXCUSED)

22

23

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25

1                   (Reporter marked documents for  
2                   identification as Public's Exhibit  
3                   Nos. 3 and 3-C)  
4

5                   JUDGE STORMS: Mr. Helmen, you may  
6                   call your next witness.

7                   MR. HELMEN: Thank you, Your  
8                   Honor. The Public calls Wes Blakley, and Mr.  
9                   Blakley has not yet been sworn in.

10                  JUDGE STORMS: Mr. Blakley, would  
11                  you stand and raise your right hand to be  
12                  sworn.

13

14                  (OATH DULY ADMINISTERED TO WITNESS)

15

16                  JUDGE STORMS: Please proceed,  
17                  Mr. Helmen.

18                  MR. HELMEN: Thank you, Your  
19                  Honor.

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1    **WES R. BLAKLEY**, a witness appearing on behalf of  
2                           the Public, having been first  
3                           duly sworn, testified as follows:  
4

5    **DIRECT EXAMINATION,**

6       **QUESTIONS BY MR. HELMEN:**

7    Q   Please state your full name and spell your  
8       last name for the record.

9    A   Wes R. Blakley, B-l-a-k-l-e-y.

10   Q   Mr. Blakley, where are you employed and in  
11       what capacity?

12   A   I'm employed by the Office of Utility Consumer  
13       Counselor as an analyst.

14   Q   Did you prefile direct testimony in this  
15       cause?

16   A   Yes.

17   Q   I've placed before you what's been marked for  
18       identification purposes as Public's Exhibit  
19       No. 3.

20                       Is that a true and accurate copy  
21       of your prefiled testimony?

22   A   Yes.

23   Q   Are there any changes or corrections that  
24       you'd like to make?

25   A   Yes, I have a few changes.

1 Q Walk us through those slowly, please.

2 A Okay. On Page 5, Line 3, starting with

3 "Public's Exhibit WRB-1, a list of prior IURC

4 cases some of which the utility requested an

5 enhanced rate of return on shareholder

6 equity."

7 Q So, it should read "some of which"?

8 A Right; yes.

9 Q Have you made that change on the record on the

10 official copy, Wes?

11 A I'll do that right now.

12 Q Initial it in the margin, please.

13 A Okay. My next change would be on Page 5, Line

14 9, where it starts "rate of return should not

15 be granted in this case"; so, add the word

16 "not" after the word "should".

17 Q That's kind of a critical one?

18 A Yes.

19 The next change would be on Page

20 6, Line 18, where it says "The IGCC Project

21 cost", delete the word "cost".

22 Q So that clause now reads?

23 A "The IGCC Project, as proposed, will cost

24 almost \$2 billion . . ."

25 I have one more change. On my



1 Attachment WRB-1, the last cause listed there  
2 says "43183", and that should be "43188".

3 I think that's it.

4 Q With those changes, does Public's Exhibit 3  
5 include the testimony that you wish to  
6 incorporate in this case?

7 A Yes.

8 Q If I were to ask you the same questions  
9 contained therein while you're here under  
10 oath, would your answers be substantially the  
11 same?

12 A Yes.

13 Q I've also placed before you what's been marked  
14 for identification purposes as Public's  
15 Exhibit No. 3-C or 3-Confidential.

16 Do you see that there?

17 A Yes, I do.

18 Q Can you open up the envelope and take a look  
19 at that?

20 A Yes.

21 Q Is that a complete and accurate copy of your  
22 unredacted testimony in this cause?

23 A It appears to be; although, I do not see the  
24 schedules.

25 Q There wasn't anything confidential in the

1 schedules, was there?

2 A There appears to be Attachment 2 that's  
3 confidential, and that's not in here.

4 MR. HELMEN: Perhaps I can bring  
5 that at a break, Your Honor?

6 JUDGE STORMS: Okay.

7 Q At this time, Mr. Blakley, do you adopt the  
8 testimony contained in Public's  
9 Cross-Examination or Public's Exhibit No. 3-C  
10 as your sworn testimony in this cause?

11 A Yes.

12 MR. HELMEN: Your Honor, at this  
13 time, we offer into evidence Public's Exhibits  
14 3 and 3-C.

15 JUDGE STORMS: Is there any  
16 objection?

17 If not, we'll show Public's  
18 Exhibits 3 and 3-C admitted into this cause.

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1 (PUBLIC'S EXHIBIT NO. 3, BEING THE  
2 PREFILED PREPARED REDACTED  
3 TESTIMONY OF MR. WES R. BLAKLEY,  
4 WITH ATTACHMENTS WRB-1 AND WRB-3  
5 ATTACHED THERETO, ADMITTED INTO  
6 EVIDENCE.)  
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1 (PUBLIC'S EXHIBIT NO. 3-C, BEING  
2 THE PREFILED CONFIDENTIAL  
3 UNREDACTED TESTIMONY OF MR. WES R.  
4 BLAKLEY, WITH ATTACHMENT WRB-2  
5 ATTACHED THERETO, ADMITTED INTO  
6 EVIDENCE ON A CONFIDENTIAL BASIS.)  
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1                   MR. HELMEN: Mr. Blakley is  
2     available for cross-examination.  
3                   JUDGE STORMS: Ms. Becker?  
4                   MS. BECKER: No questions, Your  
5     Honor.  
6                   JUDGE STORMS: Mr. Stewart?  
7                   MR. STEWART: No questions, Your  
8     Honor.  
9                   JUDGE STORMS: Mr. Polk?  
10                  MR. POLK: No questions, Your  
11     Honor.  
12                  JUDGE STORMS: Mr. Hartley?  
13                  MR. HARTLEY: No questions, Your  
14     Honor.  
15                  JUDGE STORMS: Duke? Ms. Karn?  
16                  MS. KARN: Thank you, Your Honor.  
17  
18     **CROSS-EXAMINATION OF MR. WES R. BLAKLEY,**  
19     **QUESTIONS BY MS. KARN:**  
20     Q Good morning.  
21     A Hi.  
22     Q Could you turn to Page 4, please, of your  
23     testimony, at Line 12?  
24                  MR. HELMEN: I'm sorry, what page?  
25                  MS. KARN: Page 4, Line 12.

1 Q There you say that this proposal, in many  
2 respects, is not unlike a request for a CPCN  
3 for other coal-fired generation.

4 Would you agree with me that, at  
5 least, in some respects, this request is  
6 different than a CPCN for coal-fired  
7 generation?

8 A Well, it is different in the fact that you've  
9 got -- the fact that you've got that statute,  
10 the clean coal technology statute, which is a  
11 little different. With the CPCN request,  
12 though, you do -- at the time of a rate case,  
13 you do still get the same relief. It's just  
14 delayed.

15 Q Would you agree with me that one thing that  
16 does make it different is that the Legislature  
17 has passed a statute that specifically  
18 encourages coal gasification?

19 MR. HELMEN: I'll object to the  
20 extent the question calls for a legal  
21 conclusion, Your Honor.

22 JUDGE STORMS: Response?

23 MS. KARN: I don't think it calls  
24 for a legal conclusion. I think it just calls  
25 for him knowing whether -- He actually

1       mentioned the fact that the statute existed;  
2       so, he's familiar with it.

3                   JUDGE STORMS:  I'll overrule the  
4       objection and allow the witness to answer to  
5       the extent he knows.

6   A   Can you restate the question, please?

7   Q   Would you agree that one of the things that  
8       makes it different from coal-fired generation  
9       is that the Legislature has passed a statute  
10      that does encourage coal gasification?

11  A   I think I did say that's what made it  
12      different, that there was a statute that  
13      allowed, you know, rapid -- more rapid  
14      recovery of costs outside a rate case.

15  Q   And also I just wanted to clear up one thing.  
16      The statute that we're talking about, do you  
17      agree, is generally referred to as Senate Bill  
18      29 and the code section would be 8-1-8.8-1,  
19      et. seq.?

20  A   Pardon me?  Would you run that by me again?

21  Q   Do you agree generally that the statute that  
22      we're talking about, which we've referred to  
23      throughout this proceeding and others, is  
24      Senate Bill 29 and that the code section is  
25      Indiana Code Section 8-1-8.8-1?

1 A Yes. Senate Bill 29 is a part of the whole  
2 mix. There is also the CWIP tracker which  
3 rules apply -- come from the IAC. I don't  
4 know the exact numbers, but that gives you the  
5 rate of return on investment. Senate Bill 29  
6 gives you the operation and maintenance  
7 expense, the depreciation and other items.

8 Q And Senate Bill 29 also gives you the return  
9 on equity incentive; is that correct?

10 A That's in there, yes. That's in the request,  
11 yes.

12 Q I want to turn to your Attachment WRB-1 where  
13 you listed some of the cases there, and I  
14 wanted to see if you would agree with me,  
15 subject to check, that in this list of cases,  
16 there are five that actually requested an  
17 incremental return on equity in the case;  
18 correct? Would you agree with that, subject  
19 to checking?

20 A Sure.

21 Q And those cases would be your Cause No. 42622,  
22 which is a Duke Energy Indiana case, and I  
23 think it was also consolidated with 42718;  
24 the SIGECO/Vectren case 42248-P2, which was  
25 the Phase II case, and then the Vectren case



1       42861, SIGECO or Vectren, and then the IPL  
2       cases 42170 and 42700.

3                   Are you generally familiar with  
4       those cases?

5   A   Yes.

6   Q   And just to go through -- I want to kind of go  
7       through those cases and see if we kind of  
8       agree on what was ultimately agreed to in  
9       those cases in terms of the incentive on ROE  
10      specifically.

11                  I think we can probably both agree  
12      that in the Duke case, Duke requested it, and  
13      then in a subsequent settlement gave up that  
14      request, and the Commission approved the  
15      settlement without modification; do you agree?

16   A   Right.

17   Q   In the other cases, let's take maybe the  
18      Vectren case, the Phase II, the 42248-P2, do  
19      you recall generally that that also resulted  
20      in a settlement; is that right?

21   A   Yes.

22   Q   And that in that settlement, did the parties  
23      agree to a fixed rate of return on the  
24      qualified pollution control property of  
25      8 percent?

1 A Yes.

2 Q And do you agree with me that this is a fixed  
3 rate of return, and it would not be updated  
4 through the normal CWIP rules that you  
5 referred to before which indicate that the  
6 return under the CWIP rules would be based on  
7 the return in the last rate case?

8 A Right. The weighted average cost was fixed in  
9 that case, yes.

10 Q Do you agree with me that that cost is fixed  
11 regardless of whether Vectren would come in  
12 and have a new rate case and set a new ROE  
13 with a new capital structure in the new rate  
14 case, that the 8 percent remains?

15 A I'm not sure about that. I'm not sure about  
16 that.

17 Q Are you familiar with the Vectren rate case  
18 settlement that's been filed?

19 A Yes, I am.

20 Q Do you know whether in that rate case there is  
21 a provision dealing with whether or not the  
22 QPCP still gets the fixed 8 percent?

23 A You know, I'm not for certain about that.

24 MS. KARN: May I approach for a  
25 minute, Your Honor?

1 JUDGE STORMS: Yes, you may.

2 Q I've handed you what is a copy of the rate  
3 case stipulation and settlement in Cause No.  
4 43111 with Vectren. If you can review that,  
5 and the part that I thought might be pertinent  
6 to this issue is on Page 17.

7 MR. HELMEN: Your Honor, I didn't  
8 bring a copy of my Vectren rate case  
9 settlement with me. I should have, I suppose,  
10 but can I step up there and take a look at  
11 that?

12 JUDGE STORMS: Do you have an  
13 extra copy, Ms. Karn?

14 MS. KARN: I do.

15 JUDGE STORMS: Can you provide it  
16 to Mr. Helmen?

17 MS. KARN: Yes.

18 MR. HELMEN: I'm sorry, counsel,  
19 but did you direct him to a particular page?

20 MS. KARN: Yes, and I'm sorry, I  
21 think the section actually begins at the  
22 bottom of Page 16, and it is talking about the  
23 return on equity test, and then the second  
24 sentence there, I'll read it, it says,  
25 "However, consistent with past adjustments to

1       the Company's level of authorized NOI to  
2       accommodate recovery of costs related to its  
3       approved NOx and Multi-Pollutant environmental  
4       projects, the parties agree that the Company's  
5       authorized NOI for purposes of the NOI test  
6       should be similarly adjusted in the future to  
7       allow the Company to retain its recovery of  
8       costs associated with approved Senate Bill 29  
9       projects (Indiana Code Section 8-1-8.8 et.  
10      seq.), as well as for the agreed upon NOI  
11      adjustment . . .", and it goes on to a  
12      different issue there.

13                     MR. HELMEN: Thank you.

14   Q   (Ms. Karn continuing) My question to you is:  
15       Does that refresh your recollection as to  
16       whether the 8 percent fixed ROE in the  
17       settlements that we were discussing before in  
18       the orders approved by the Commission still  
19       remains?

20                     MR. HELMEN: Your Honor, I'm going  
21       to object to the question. It is not relevant  
22       to this proceeding for a couple of reasons.  
23       No. 1, this isn't Vectren, and No. 2, we're  
24       not talking about an NOI test. We're not  
25       talking about -- This settlement agreement

1       here deals with an NOI provision, not return  
2       on equity.

3                   JUDGE STORMS:   Just for my own  
4       clarification, this is a settlement that has  
5       not been acted on by the Commission?

6                   MR. HELMEN:   The settlement is  
7       pending, that's correct.

8                   JUDGE STORMS:   I'll sustain the  
9       objection.

10    Q   As to the other cases that have all asked for  
11       incentives on ROEs, is it your understanding  
12       that the remainder of the cases, the ones that  
13       we haven't talked about yet, the one SIGECO  
14       one and the two IP&L ones, also call for a  
15       fixed rate of return for the pollution control  
16       property?

17    A   That's correct.

18    Q   Specifically as to the IP&L case, do you agree  
19       with me that IP&L's last rate case was settled  
20       without a specific return on equity being  
21       examined or found for IP&L?

22    A   I believe that was the case, yes.

23    Q   If we don't have a specific ROE that was set  
24       in the last base rate case for IP&L, how can  
25       we tell for sure whether a fixed rate of

1       return on the qualified pollution control  
2       property either does or does not contain  
3       enhancement to that ROE?  
4   A   Can you rephrase your question?  
5   Q   My point is: We don't have anything to  
6       compare it to; right? We don't have a rate of  
7       return on -- We don't have a return on equity  
8       coming out of the last rate case which is  
9       what -- Is it your understanding that under  
10      the CWIP rules, that is what normally would  
11      apply to qualified pollution control property,  
12      the return on equity that came out of the last  
13      rate case?  
14   A   Yes.  
15   Q   And if we don't know what that return on  
16      equity is?  
17   A   There was a problem with that, yes.  
18   Q   Would you agree that we can't tell for  
19      certain, then, whether there is or is not --  
20   A   That's right.  
21   Q   -- an enhancement?  
22   A   You can't tell.  
23   Q   You also talked generally on Page 6, Lines 7  
24      through 10 of your testimony, Page 6, Line 7,  
25      there you state that, "The statutes allow for

1       the debt portion of capital to 'float', that  
2       is, if the cost of long-term debt for a  
3       utility increases during the period, that cost  
4       is allowed to pass through in the calculation  
5       of the weighted cost of capital."

6                       We're talking about how the CWIP  
7       rider works here; is that right?

8   A   Right.

9   Q   Would you also agree with me that it goes vice  
10       versa too, if the cost of that debt would go  
11       down, that that would also flow through the  
12       CWIP rider calculation?

13   A   Yes.

14                     MS. KARN:   That's all I have, Your  
15       Honor.

16                     JUDGE STORMS:   Thank you.  
17       Redirect?

18                     MR. HELMEN:   Thank you, Your  
19       Honor.

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1     **REDIRECT EXAMINATION OF MR. WES R. BLAKLEY,**

2     **QUESTIONS BY MR. HELMEN:**

3     Q   Mr. Blakley, going back to Attachment WRB-1,  
4         these are all dockets in which utilities have  
5         requested cost recovery treatment pursuant to  
6         the clean coal technology statutes; is that  
7         correct?

8     A   That's correct.

9     Q   And you have agreed with Ms. Karn that in five  
10        of those, petitioners requested an enhanced  
11        return, but the approved order did not include  
12        an enhanced return; is that correct?

13    A   That's correct.

14    Q   And in any of the cases where a fixed rate of  
15        return was negotiated, was there ever any  
16        expressed or otherwise agreement to include an  
17        enhanced return?

18    A   No.

19    Q   With respect to the IPL cases, I think you  
20        acknowledged that there were challenges  
21        because the previous rate case was settled in  
22        a black box, if you will?

23    A   Yes.

24    Q   But, again, in trying to come up with a fair  
25        figure, was there any discussion about



1       enhancing their return?

2    A   No.

3                   MR. HELMEN:   That's all I have,  
4    Your Honor.

5                   JUDGE STORMS:   Mr. Blakley, thank  
6    you very much for your testimony.  You're  
7    excused.

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13                   (WITNESS WES R. BLAKLEY EXCUSED)

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18                   JUDGE STORMS:   We'll take about a  
19    ten-minute break.

20

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25                   (HEARING IN RECESS UNTIL 10:30 A.M., SAME DAY)

1 Indianapolis, Indiana  
2 June 21, 2007  
3 10:30 A.M. (EDT)

4 (Reporter marked documents for  
5 identification as Intervenor's -  
6 CATF and IWF Exhibit Nos. 3  
7 through 6, inclusive)

8  
9 (Reporter marked document for  
10 identification as Petitioner's  
11 Exhibit No. 17)

12  
13 (Reporter marked documents for  
14 identification as Intervenor's -  
15 Industrial Group Exhibit Nos. 1,  
16 2, 2 Confidential and 3)

17  
18 JUDGE STORMS: Let's go ahead and  
19 go back on the record.

20 Oh, one thing, and this isn't  
21 something that needs to be on the record, but  
22 since we're on the record, I'll tell you on  
23 the record, the security folks have mentioned  
24 to me that when we're on a break to not block  
25 the walkway out here. We can congregate on

1       either side, but congregating in the middle is  
2       strictly prohibited, and he'll be keeping an  
3       eye on us, but I told him that I would pass  
4       that along just to make sure. We all have to  
5       get used to this new arrangement, and one of  
6       the new rules is to not block the walkway  
7       through here. There's a lot of hotel guests  
8       and so forth in here.

9                        So, nothing further from the OUCC;  
10       correct?

11                      MR. HELMEN: Yes, Your Honor, the  
12       Public rests.

13                      JUDGE STORMS: And I think where  
14       we left off is we have, I believe,  
15       Mr. Thompson who is -- The Clean Air Task  
16       Force and Indiana Wildlife Federation had a  
17       couple of things. Mr. Thompson is here to  
18       testify.

19                      There is also some testimony that,  
20       I believe, Mr. Hartley, you mentioned  
21       yesterday needed a verification attached. If  
22       you would like to go ahead and put those  
23       individuals' testimony into the record, and  
24       then we can proceed with Mr. Thompson.

25                      MR. HARTLEY: Thank you, Your

1 Honor. The direct testimony of Dr. Friedmann  
2 has been marked as Intervenors' - Clean Air  
3 Task Force and Indiana Wildlife Federation  
4 Exhibit No. 5, and the one that I've given the  
5 Court Reporter to offer into the record is  
6 different from the one that was prefiled with  
7 the Commission in that there is now an  
8 additional page ahead of the Certificate of  
9 Service page which is a Verification of the  
10 testimony signed by Dr. Friedmann, and I've  
11 distributed copies of that Verification page  
12 to the Bench and counsel.

13 Then similarly, the direct  
14 testimony of Mr. Melzer is marked as Exhibit  
15 No. 6, and it also just ahead of the  
16 Certificate of Service page has had  
17 Mr. Melzer's Verification page inserted in the  
18 official one that the Court Reporter has.

19 I believe we have a stipulation  
20 from the parties to admit this testimony and  
21 waive cross, and so, I would offer Exhibits 5  
22 and 6 with the one attachment to 5 and six  
23 attachments to Exhibit No. 6.

24 JUDGE STORMS: We will show Clean  
25 Air Task Force and Indiana Wildlife Federation

1       Intervenors' Exhibits 5 and 6 with all  
2       attachments thereto admitted into this cause.

3  
4                (INTERVENORS' - CATF AND IWF  
5                EXHIBIT NO. 5, BEING THE PREFILED  
6                DIRECT TESTIMONY OF DR. S. JULIO  
7                FRIEDMANN, WITH ATTACHMENT NO. 1  
8                ATTACHED THERETO, AND INTERVENORS' -  
9                CATF AND IWF EXHIBIT NO. 6, BEING  
10              THE PREFILED DIRECT TESTIMONY OF MR.  
11              L. STEPHEN MELZER, WITH ATTACHMENT  
12              NOS. 1 THROUGH 6, INCLUSIVE,  
13              ATTACHED THERETO, ADMITTED INTO  
14              EVIDENCE.)

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1 JUDGE STORMS: We have one other  
2 clean-up matter, and maybe I'll take care of  
3 that now so I don't forget about it.

4 Mr. Polk, there is something that  
5 you neglected to put into the record  
6 yesterday, I believe, that needs to be put in  
7 at this time.

8 MR. POLK: Thank you, Your Honor.  
9 We would like to submit the cross answering  
10 testimony of Bruce E. Biewald which is  
11 designated as RC Exhibit No. F.

12 JUDGE STORMS: Is there any  
13 objection?

14 If not, we'll show RC Exhibit F  
15 admitted into this cause.

16 JUDGE STORMS: Thank you, Mr.  
17 Polk.

18  
19 (INTERVENOR'S - RC EXHIBIT NO. F,  
20 BEING THE PREFILED CROSS ANSWERING  
21 TESTIMONY OF MR. BRUCE E. BIEWALD,  
22 ADMITTED INTO EVIDENCE.)

23  
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1 JUDGE STORMS: Mr. Hartley, you  
2 may call your next witness.

3 MR. HARTLEY: Call John Thompson.  
4 Mr. Thompson has not been sworn, Your Honor.

5 JUDGE STORMS: Thank you. Would  
6 you raise your right hand to be sworn?

7

8 (OATH DULY ADMINISTERED TO WITNESS)

9

10 **JOHN THOMPSON**, a witness appearing on behalf of  
11 the Intervenors, Clean Air Task  
12 Force and Indiana Wildlife  
13 Federation, having been first duly  
14 sworn, testified on Direct and  
15 Rebuttal as follows:

16

17 **DIRECT EXAMINATION,**

18 **QUESTIONS BY MR. HARTLEY:**

19 Q What is your name?

20 A My name is John Thompson.

21 Q And by whom are you employed?

22 A I'm employed by the Clean Air Task Force.

23 Q What is your position with the Clean Air Task  
24 Force?

25 A I'm the Director of the Coal Transition

1 Project.

2 Q What is your business address?

3 A 231 West Main Street, Suite 1E, Carbondale,  
4 Illinois.

5 Q You have before you what has been marked as  
6 Intervenor's - Clean Air Task Force and  
7 Indiana Wildlife Federation Exhibit No. 3.

8 Is that a copy of your prefiled  
9 direct testimony in this matter?

10 A It is.

11 Q With six attachments thereto?

12 A Yes.

13 Q Do you have any changes that are necessary in  
14 that testimony before it is offered?

15 A I do.

16 Q Would you tell us the page and line numbers of  
17 those changes?

18 A On Page 6 of 24, Line 21, strike the word  
19 "climb".

20 COMMISSIONER ZIEGNER: Would you  
21 repeat that, please, a little more slowly?

22 WITNESS THOMPSON: I'm sorry.

23 Page 6 of 24, I direct your attention to Line  
24 21, and ask you to strike the word "climb".

25 Q Are there any other changes to your direct



1 testimony or the exhibits that need to be  
2 made?

3 A No.

4 Q With that change, if I were to ask you all of  
5 the questions contained therein, would your  
6 answers be the same?

7 A Yes.

8 Q And do you adopt the testimony contained in  
9 Exhibit No. 3 and the six attachments as your  
10 testimony in this cause?

11 A Yes.

12 Q I believe you also have before you Exhibit 4;  
13 is that correct?

14 A Yes.

15 Q Is that a copy of your prefiled rebuttal  
16 testimony in this case?

17 A It is.

18 Q Do you have any changes or corrections to that  
19 before it is offered into the record?

20 A I do.

21 Q Would you tell us the page and line numbers,  
22 please?

23 A I would direct your attention to Page 13 of  
24 15.

25 Q And what change needs to be made there?

1 A At the end of Line 14 is the word "In", strike  
2 that, and strike Lines 15 and 16.

3 Q So, essentially, the whole second sentence of  
4 that paragraph is gone?

5 A Yes.

6 Q And just the first -- the one sentence  
7 remains?

8 A Yes.

9 Q Are there any other changes to your prefiled  
10 rebuttal testimony that need to be made before  
11 it is offered?

12 A No.

13 Q With that change, if I were to ask you all of  
14 the same questions as are contained in Exhibit  
15 No. 4, would your answers be the same?

16 A Yes.

17 Q And do you adopt Exhibit 4 as your rebuttal  
18 testimony in this cause?

19 A I do.

20 MR. HARTLEY: I'll offer  
21 Intervenor's - Clean Air Task Force and  
22 Indiana Wildlife Federation Exhibit Nos. 3 and  
23 4.

24 JUDGE STORMS: Mr. Thompson, with  
25 respect to your changes, did you make those

1 changes on the Reporter's copy and initial  
2 them?

3 WITNESS THOMPSON: I did it on the  
4 copy that is before me. Is that the same as  
5 what you just asked?

6 JUDGE STORMS: Yes.

7 WITNESS THOMPSON: Then I did.

8 JUDGE STORMS: Thank you.

9 If there is no objection, we'll  
10 show Clean Air Task Force and Indiana Wildlife  
11 Federation Exhibits 3 and 4 admitted into this  
12 cause.

13

14 (INTERVENORS' - CATF AND IWF  
15 EXHIBIT NO. 3, BEING THE PREFILED  
16 DIRECT TESTIMONY OF MR. JOHN  
17 THOMPSON, WITH ATTACHMENT NOS. 1  
18 THROUGH 6, INCLUSIVE, ATTACHED  
19 THERETO, AND INTERVENORS' - CATF  
20 AND IWF EXHIBIT NO. 4, BEING THE  
21 PREFILED REBUTTAL TESTIMONY OF MR.  
22 JOHN THOMPSON, WITH ATTACHMENT 1  
23 ATTACHED THERETO, ADMITTED INTO  
24 EVIDENCE.)

25

1                   MR. HARTLEY: Mr. Thompson is  
2     available for cross.

3                   JUDGE STORMS: Thank you.  
4     Mr. Helmen?

5                   MR. HELMEN: Thank you, Your  
6     Honor.

7

8     **CROSS-EXAMINATION OF MR. JOHN THOMPSON,**

9     **QUESTIONS BY MR. HELMEN:**

10    Q Good morning, Mr. Thompson.

11    A Good morning.

12    Q Nice to see you again. I get the sense from  
13     reading your testimony that you are generally  
14     enthused about the prospects of the  
15     construction and operation of an IGCC plant of  
16     this size; is that fair?

17    A Yes, that is fair.

18    Q Are you equally enthused that you don't have  
19     to pay for it?

20    A I did not actually think about that.

21    Q You aren't a Duke ratepayer, are you?

22    A No. I live in southern Illinois.

23    Q Throughout your testimony, you point out the  
24     valuable knowledge and experience to be gained  
25     by the successful construction and operation

1 of this IGCC plant, and I'm just wondering or  
2 a question from Mr. Polk to another witness  
3 yesterday made me think, in terms of the  
4 regulatory process, do you think it is fair  
5 that one utility's ratepayers bear the cost of  
6 this experiment?

7 A I don't consider this an experiment. I  
8 consider this a commercial power plant.

9 Q Some have expressed a concern that the IGCC is  
10 not a proven technology or it is not proven to  
11 be commercially viable. Do you agree with  
12 that?

13 A I do not.

14 Q What's the basis for your disagreement?

15 A Well, there is probably 130 gasification  
16 projects around the world. Most of those are  
17 not producing electricity; they're producing  
18 chemicals. If you divide that into sort of a  
19 subset of those projects that I would call  
20 IGCC plants, there's probably 16 plants around  
21 the world, and, again, most of those utilize a  
22 similar fuel to coal. They are in refineries.  
23 Some four in the world have been designed to  
24 utilize coal from the beginning.

25 When you look at those plants, not

1       only the direct IGCC plants but the different  
2       components that are utilized in all of those  
3       gasification plants, some of which might be  
4       interchangeable with those that might be used  
5       in an IGCC plant, I'm very confident that this  
6       is a commercial technology that's  
7       demonstrated. It is offered by large  
8       companies that, you know, are world known and  
9       reliable.

10                       There is -- I'm just very  
11       confident based on the experience of those  
12       plants, based on the commercial offerings that  
13       are available, that this is a demonstrated  
14       technology.

15   Q   You also recommend in your testimony that the  
16       IURC require partial capture of CO<sub>2</sub>, do you  
17       not?

18   A   We do.

19   Q   Do you have a timetable in mind as to when you  
20       think Duke ought to do that?

21   A   I think it is in everybody's best interest to  
22       do that as soon as possible; so, ideally, that  
23       would be when the plant opens or within a year  
24       or so of it opening.

25   Q   Do you have an opinion as to when you think

1 carbon regulation is going to be in effect?

2 A I think it is going to be soon, definitely  
3 within the lifetime of this particular plant,  
4 but I don't have a crystal ball as to when  
5 Congress is going to act, and I'm pretty  
6 certain that if I were to give you a date and  
7 you would come back and ask me that same  
8 question in a year, whatever date I gave you  
9 would probably be wrong.

10 Q You spent some time in your testimony talking  
11 about various bills and proposals with respect  
12 to carbon emissions.

13 Let me direct your attention to  
14 Page 11 of your testimony. There on Lines 9  
15 and 10, you're referencing the Sanders bill,  
16 and you say that it would require that plants  
17 built after 2012 achieve an emission rate.

18 When you talk about plants built  
19 after 2012, is that for those in operation  
20 after 2012 or construction started after 2012?  
21 Do you know?

22 A I'd have to look up the specific language. My  
23 recollection, and I may be incorrect on that,  
24 was that it would be plants that began  
25 construction after 2012.

1 Q Do you expect that there will be carbon  
2 emission restrictions by 2012?

3 A I would say there is a high probability.

4 MR. HELMEN: No further questions.

5 JUDGE STORMS: Thank you,

6 Mr. Helmen.

7 Nucor, any questions for this  
8 witness?

9 MS. BECKER: Just a couple, Your  
10 Honor.

11 JUDGE STORMS: Please proceed.

12

13 **CROSS-EXAMINATION OF MR. JOHN THOMPSON,**

14 **QUESTIONS BY MS. BECKER:**

15 Q Good morning.

16 A Good morning.

17 Q I understand you're from Carbondale?

18 A I am.

19 Q And you're an Illinois native; is that  
20 correct, or you've lived in Illinois for some  
21 time?

22 A That would be correct. I was born in  
23 Kentucky, but I do consider myself mostly a  
24 native of Illinois.

25 Q Okay. And to your knowledge, is Illinois a



1       restructured state or is it a regulated state  
2       for purposes of ratemaking?

3    A   For purposes of ratemaking, it is a  
4       deregulated state.

5                       MS. BECKER:   Thank you.   No  
6       further questions.

7                       JUDGE STORMS:   Thank you.  
8       Ms. Dodd, your witness.

9

10   **CROSS-EXAMINATION OF MR. JOHN THOMPSON,**

11       **QUESTIONS BY MS. DODD:**

12    Q   Good morning, Mr. Thompson.

13    A   Good morning.

14    Q   Just to follow up on a couple of Mr. Helmen's  
15       questions, are you aware of any operating IGCC  
16       plants the size of the proposed Edwardsport  
17       project?

18    A   Yes.

19    Q   And where is that?

20    A   They're in Italy.

21    Q   Pardon?

22    A   They are in Italy.

23    Q   Okay.   And producing electricity?

24    A   Yes.

25    Q   Do they have carbon capture and storage?

1 A Some have carbon capture. None have storage.

2 Q And is it your position that the IGCC plant  
3 proposed here with carbon capture will advance  
4 coal gasification technology to the benefit of  
5 all power utilities?

6 A Yes.

7 Q Do you believe it is fair to require Duke's  
8 customers to bear the full cost and risk of  
9 the IGCC plant so that Duke can gain knowledge  
10 and experience with the technology and provide  
11 an example for other power companies?

12 A I guess the way I look at it is that Duke's  
13 customers are getting an excellent plant, and  
14 they're getting the benefits of a plant that  
15 does carbon capture, and there are secondary  
16 benefits, you know, to everyone else,  
17 including the power sector or others or  
18 society as a whole. It's great for people  
19 like me who live in Illinois, but I don't  
20 think that's the only reason that this plant  
21 has value.

22 Q On Page 24 of your testimony, your direct  
23 testimony, you state that developing a project  
24 of this scale and with stringent -- within the  
25 strict carbon regulations in a cost-efficient

1 manner.

2 Do you know what -- Has the  
3 Indiana Wildlife Federation and/or the Clean  
4 Air Task Force made a determination of whether  
5 the IGCC plant with carbon capture and storage  
6 is the least-cost means of providing electric  
7 service to Duke's ratepayers?

8 A We've not done modeling about what is least  
9 cost. I think that what we look at is if you  
10 look at the reasonable ways of producing  
11 electricity, and you look at the uncertainty  
12 in the future, whether that's gas prices,  
13 whether that's regulations, this is certainly  
14 a reasonable way of meeting that need and has  
15 many benefits that accrue to lower emissions  
16 and the environment as well.

17 Q And Ms. Becker asked you about the regulatory  
18 ratemaking in Illinois, and you said it was  
19 deregulated.

20 Are you familiar with the  
21 ratemaking in Indiana for clean coal  
22 technology?

23 A In general ways. I would not turn to me for  
24 legal advice on how to do that. I'm sure  
25 there are better folks in this room who could.

1 Q You are aware that Indiana is not a  
2 deregulated state?

3 A Absolutely.

4 Q Page 5 of your rebuttal testimony, I'm  
5 sorry -- yes, Page 5 to 6 -- well, I may have  
6 my pages wrong, but anyway, you state that  
7 carbon capture at Edwardsport is beneficial to  
8 Duke and its ratepayers.

9 Do you believe it is fair for Duke  
10 to bear some of the costs associated with the  
11 IGCC Project and carbon capture?

12 A That seems a reasonable, you know, view to me.

13 Q Thank you.

14 MS. DODD: No further questions,  
15 Your Honor.

16 JUDGE STORMS: Thank you, Ms.  
17 Dodd.

18 Mr. Polk?

19 MR. POLK: Thank you, Your Honor.

20 JUDGE STORMS: Please proceed.

21

22

23

24

25

1     **CROSS-EXAMINATION OF MR. JOHN THOMPSON,**

2             **QUESTIONS BY MR. POLK:**

3     Q    Good morning, Mr. Thompson.

4     A    Good morning.

5     Q    It's good to have you in Indiana.

6     A    I'm glad to be here.

7     Q    Kind of picking up where Ms. Dodd left off, I  
8           think she asked you whether shareholders, or  
9           sort of paraphrasing here, if shareholders had  
10          a responsibility to help pay for these  
11          experiments, and I know you don't view it as  
12          an experiment, but moving forward with IGCC,  
13          and capture and sequestration in particular,  
14          do you believe there is a corporate  
15          responsibility on behalf of electric utilities  
16          with coal-fired generation to start acting now  
17          to proactively address future carbon  
18          regulations?

19    A    I do.

20    Q    Do you believe there is a huge risk out there  
21          to shareholders and to the utility if they  
22          don't begin to address carbon regulation now?

23    A    I do.

24    Q    Why is regulating carbon emissions so  
25          important?

1   A   Carbon emissions are one of the greenhouse  
2       gases that are important in climate change.  
3       Carbon dioxide is one of the most important  
4       for a couple of reasons.  First, it is because  
5       of the quantity that is emitted not just by  
6       the power sector but by the industrial sector,  
7       by the transportation sector.  Any time you  
8       burn a fuel, CO2 is released.

9                 CO2 is also important because  
10       unlike say some of the other pollutants that  
11       are emitted as a result of combustion, CO2 is  
12       in the atmosphere, and it lingers there for  
13       vastly longer periods of time.  So, maybe  
14       after 100 years or more, you may still have  
15       say 25 percent of the CO2 that was say emitted  
16       by your car or my car today would still be --  
17       might still be in the atmosphere.

18                So, those are among the reasons,  
19       and I think that if we're going to  
20       stabilize -- if we're going to prevent climate  
21       change, addressing CO2 is critically important  
22       to that.

23   Q   Now, you said you work for the Clean Air Task  
24       Force.  I assume -- Well, I know your  
25       organization is concerned with a lot more than

1       just carbon; right? They're concerned with  
2       all sorts of air emissions; correct?

3   A   Absolutely.

4   Q   How would you rank carbon as a concern  
5       compared with some of those other emissions?

6   A   The two atmospheric air pollution challenges  
7       of this century are going to boil down to  
8       global warming and particulates. By  
9       particulates, what I'm referring to are the  
10      particles in the air that can be either  
11      emitted directly or formed as a secondary  
12      emission.

13                 These particles have a number of  
14      adverse impacts. First is with respect to  
15      mortality and premature death. Worldwide,  
16      especially in places like China, it is a very  
17      significant problem in terms of reducing life  
18      expectancy and aggravating things like asthma  
19      attacks.

20                 So, I would say those two  
21      challenges are the challenges that we as a  
22      society must address, and I'm not sure what I  
23      would rank as higher. You know, three days a  
24      week I would say it is CO<sub>2</sub>; three days a week  
25      I would say it is particulates, and maybe on

1 Sunday, I think they're both awful.

2 Q You mentioned that carbon has a longevity in  
3 the environment of about 100 years.

4 Do you know the longevity of  
5 particulates in the environment?

6 A They can come out in a matter of weeks, days.

7 Q Would emissions of particulates in China,  
8 which you noted as a significant problem,  
9 create environmental problems here in the  
10 United States?

11 A Indeed.

12 Q To the same extent that carbon emissions from  
13 China would affect climate here in the United  
14 States?

15 A Well, what's happening with respect to  
16 particulate emissions from China is they are  
17 having an adverse impact on visibility on the  
18 coasts in, let's say, California. It's more  
19 of a problem closer to where they're emitted;  
20 so, for example, in South Korea, they will  
21 actually blow sirens when, you know,  
22 particulates are floating in at high  
23 concentrations from China.

24 I would say that CO2 is a uniquely  
25 different problem, whether the CO2 is emitted



1       in Minnesota or Indiana or China. Its effects  
2       are global, and so whereas with particulate  
3       matter the emissions might be more -- relative  
4       to CO2, might be more local or regional,  
5       clearly the CO2 is a much more international  
6       problem.

7   Q   And I think you mentioned that the longevity  
8       of carbon in the environment was about 100  
9       years.

10                       Does that mean that the carbon  
11       emissions from the Edwardsport plant, should  
12       it be approved and constructed and in  
13       operation by 2011, that those emissions would  
14       continue to affect our environment through  
15       2111?

16   A   I want to just give a little more information.  
17       It is not as though CO2 doesn't come out of  
18       the atmosphere, but it sort of decays, and  
19       what I'm saying is that, you know, after 100  
20       years, there is still a significant amount,  
21       maybe 20 percent or something, that was  
22       emitted today that is still in the atmosphere.  
23       So, I wanted to clarify that, but I confess I  
24       forgot your question after I clarified that.

25   Q   That's okay. I think you've answered the

1 question, but I just forgot mine. I'm sure it  
2 will come back to me.

3 You said you're with the Coal  
4 Transition Task Force?

5 A No, I did not. I said I'm with the Clean Air  
6 Task Force. I direct the Coal Transition  
7 Project.

8 Q What is the goal of the Coal Transition  
9 Project?

10 A The goal of the Coal Transition Project is to  
11 reduce dramatically the impacts, the  
12 environmental impacts, associated with coal  
13 use, whether that is air emissions, mining,  
14 solid waste, water use.

15 Q Is it a --

16 A I'm sorry, may I expand?

17 Q Sure.

18 A I should add that our -- a large focus is  
19 really to do that through helping to use  
20 alternative technologies that reduce these  
21 impacts.

22 Q Okay. The term transition, is that a  
23 transition to lower emissions from coal  
24 generation or would that also include a  
25 transition away from the use of coal or, at

1       least, as much reliance on coal that we  
2       currently have?

3     A   I know your clients and our organization may  
4       have a different view on this, but we -- as we  
5       look forward over the coming century, we don't  
6       really see that there is a likely decline to  
7       any appreciable extent in coal use, and in  
8       fact, it is probably the opposite.

9                 So, our view is really rooted in  
10      the pragmatic observation that coal use is  
11      really going to climb over the next 30 years  
12      worldwide, and it puts us in a difficult bind  
13      because we, society, on the one hand, the way  
14      that we're using coal is harming our planet,  
15      and on the other hand, coal is an abundant and  
16      cheap resource and seems -- and its use seems  
17      inextricably tied to economic growth in  
18      developing countries.

19                So, for the Coal Transition  
20      Project, we really believe that the key to  
21      bridging this problem is to transition to  
22      better technologies that are radically lower  
23      in terms of their environmental footprint from  
24      coal use.

25     Q   Would those technologies include as part of

1 the resource mix including renewable energy  
2 resources?

3 A Could I ask you to -- Are you talking  
4 generally about how do we solve environmental  
5 problems or are you asking specifically about  
6 the work of the Coal Transition Project?

7 Q Well, let me ask it both ways, with respect to  
8 the -- you know, in terms of generally  
9 addressing, you know, environmental problems  
10 and with respect to the Coal Transition  
11 Project.

12 A Sure. Generally speaking, we're going to need  
13 all the renewables and other kinds of low  
14 emitting carbon technologies as we can get in  
15 order to prevent global warming, and that  
16 includes things like carbon capture and  
17 sequestration. So, I think those are  
18 definitely part of the solution, the  
19 renewables.

20 The Coal Transition Project is  
21 more focused on coal. Other parts of the  
22 Clean Air Task Force address more -- other  
23 kinds of technologies, including renewables,  
24 but the project that I lead and the staff that  
25 I supervise is much more focused on coal.

1 Q So the Clean Air Task Force as an organization  
2 does support investments in renewables, energy  
3 efficiency, combined heat and power?

4 A Absolutely.

5 Q Would you support the Edwardsport project if  
6 it was clear there was not going to be carbon  
7 capture and sequestration at the plant?

8 A I'm having a hard time with the hypothetical  
9 because I don't agree with the premise that,  
10 you know, there is no option, but what I can  
11 say more broadly about, you know, that  
12 situation and how we've addressed it within  
13 the Coal Transition Project is that it depends  
14 on the project.

15                   There are projects that we've been  
16 neutral on that are IGCC projects that don't  
17 have -- that didn't have obvious places to  
18 take the CO<sub>2</sub>, and that was one factor that  
19 went into our decision, but there were others,  
20 and I don't need to go into that, but I would  
21 say that what's important about -- there is a  
22 benefit generally in moving the first large  
23 scale IGCC projects even without carbon  
24 capture because that technology is probably  
25 critically important to preventing global

1 climate change.

2 Now, to the extent those early  
3 projects, early commercial scale projects,  
4 built in this country buy down the learning  
5 curve, lower the costs through experience,  
6 then, there is an advantage to society as a  
7 whole and to the nation as a whole and to  
8 specific states too that those plants might be  
9 located in.

10 Q Is that a general process of -- you used the  
11 term buying down the knowledge, or I'm trying  
12 to remember exactly how you said that.

13 A How did I say that? Let me explain. The more  
14 widgets you make, the lower the cost of the  
15 last widget that comes off the assembly line.  
16 So, for example, if the widget were an  
17 aircraft, was a jet liner, for example, often  
18 the way those are priced, even though the very  
19 first jet liner that say Boeing might make is  
20 very expensive, they don't set the price for  
21 that jet liner at the cost of the first one  
22 but at, you know, some midpoint because they  
23 know that if they make enough of these jet  
24 liners, the cost -- they will march down the  
25 cost curve.

1                   So, what I was trying to convey in  
2     my answer, and I may not have -- obviously, I  
3     did not do that very clearly if you are  
4     questioning me on it, was that the more IGCC  
5     plants that are built, even ones that are not  
6     in an area that has carbon capture and  
7     sequestration, it brings down the future costs  
8     of gasifiers, the future costs of clean-up  
9     equipment, the future costs of hydrogen  
10    turbines and those sorts of things.

11                  So, there is some value even to a  
12    project that doesn't capture carbon because  
13    this technology is so fundamental to  
14    addressing climate stabilization over the  
15    course of this century.

16   Q   Now, the example that you gave with respect to  
17       Boeing and airlines, and you mentioned that  
18       they set sort of a mid-price and don't charge  
19       the, you know, full price for the first model,  
20       is that analogous to this situation? Are we  
21       going to see Duke multiple IGCC facilities?

22   A   You know, Duke didn't appoint me their  
23       spokesperson today. I don't know what they're  
24       planning on doing.

25   Q   Do you know if Duke is pricing this plant at

1 the mid-level price?

2 A By mid-level price, that would be the price  
3 that you might build a plant say in 2015. I  
4 don't think they're doing that. I think they  
5 have identified the reasonable costs that are  
6 necessary to build this plant and are seeking  
7 recovery for that. That's my opinion.

8 Q And the same would be true if they included  
9 the capture and sequestration, that it  
10 wouldn't be a mid-level price, but it would be  
11 more equivalent to a prototype price; correct?

12 A I would not characterize it as a prototype  
13 price, but it would be today's price, you  
14 know, because they're seeking to construct the  
15 plant today.

16 Q Are all IGCC plants the same or equivalent in  
17 design, engineering and construction as, you  
18 know, Boeing 727s when they come off the  
19 assembly line?

20 A I'm not sure I understand your question.

21 Q Well, each Boeing 727 is, essentially, using  
22 exactly the same design, constructed by the  
23 same workers on the same construction line  
24 with the same management, and you would expect  
25 the same costs relatively for each unit that



1       came off the line making adjustments, of  
2       course, for changes in labor and production  
3       costs.

4                       Is that the same situation with  
5       site specific gasification facilities?

6   A   Jets are not coal plants.  So, obviously,  
7       there are some differences, but there is more  
8       overlap than perhaps meet the eye with respect  
9       to, at least, IGCC technology because it is  
10      modular, because you can fabricate gasifiers,  
11      you know, to a large extent, you know, indoors  
12      that the -- and then erect them in the field,  
13      or, at least, you have that option.  So,  
14      that's true, the power block -- that's true of  
15      a lot of the components.  So, I'm not sure,  
16      but I probably have lost your question.

17   Q   That would be true with a turnkey plant where  
18       the design was the same for every plant that  
19       was designed and constructed, but would it be  
20       true for a plant that was using a new or  
21       modified design?

22   A   I don't share the view with -- between this  
23       plant and say a turnkey plant.  I think within  
24       the large parameters that I've described, the  
25       fabrication of these plants actually has a lot

1 of assembly line qualities to it. I don't  
2 want to overstretch this point because,  
3 obviously, you know, you do a lot of erecting  
4 in the field, but let me just expand on that  
5 for a moment.

6 This week I was on the phone to  
7 China where we're setting up a -- the Clean  
8 Air Task Force is setting up a roundtable  
9 meeting of businesses that are interested in  
10 new coal technology, and part of that is  
11 because there is an opportunity to manufacture  
12 a surprising number of the components of  
13 gasification plants really around the world  
14 and then bringing them to the site. Whether  
15 you can do that on every site depends on, you  
16 know, barge access and other sorts of things,  
17 but it is much more true of a gasification  
18 plant to be able to do that than a pulverized  
19 coal plant where you really have to do -- you  
20 know, erect a lot of the boiler in the field.  
21 There are more components, the power block and  
22 elsewhere, that can be manufactured off site  
23 and brought in.

24 Q So are you saying that the power block and the  
25 boiler of the Edwardsport IGCC facility

1       because it is attached to gasification is more  
2       assembly line like than pulverized coal or  
3       would those components have the same  
4       attributes of a pulverized coal plant?

5   A   There is no boiler with an IGCC plant.

6   Q   Power block?

7   A   What was your question?

8   Q   Let's move on to capture and sequestration.  
9       Are capture and sequestration site specific?

10  A   Yes.

11  Q   So those would not have assembly line  
12       characteristics to them?

13  A   Sequestration is site specific.  Capture would  
14       not necessarily be.

15               In fact, the capture equipment  
16       does have some of that assembly line quality,  
17       and, again, I don't want to suggest that you  
18       make these like jet liners, but there are a  
19       lot of components that actually have some  
20       qualities like that.

21  Q   I think you indicated you advocate carbon  
22       capture and sequestration within some sort of  
23       a time line coming up, and how soon do you  
24       think this plant would need to be capturing  
25       and sequestering carbon to make a significant

1 contribution to addressing the problems of  
2 carbon emissions?

3 A Let me identify the different things that --  
4 components that actually -- how this plant  
5 helps advance sequestration. The first  
6 component is actually the technology itself of  
7 IGCC. It is much more amenable to capturing  
8 carbon than conventional coal technology, in  
9 my opinion. The second area could be in the  
10 area of the actual capture equipment. That is  
11 the second area. The third area is  
12 sequestration.

13 Let me address sequestration first  
14 and describe how that -- how this plant could  
15 advance that. If you look across the globe  
16 and the nation, most studies identify carbon  
17 capture and sequestration as one of the key  
18 blocks to preventing climate change. On the  
19 one hand, there is a lot that is known about  
20 sequestration from analogs, and that would be  
21 pipelines for natural gas, other materials,  
22 drilling from the oil industry, the geologic  
23 assessment that comes out of things like  
24 natural gas storage or oil exploration or  
25 natural gas exploration.

1                   There is -- and while science --  
2       scientists say to the first order, you know,  
3       that this is going to work, what we haven't  
4       done in this country is identify the basins  
5       and said -- and done the geologic work that  
6       says we can put 50 plants worth of CO2 in this  
7       location. That work hasn't been done, and it  
8       needs to be done.

9                   The way you get from that need to  
10      where we are today is by doing -- taking large  
11      amounts, what I'll call large, say, 500,000 to  
12      a million tons of carbon, and either advance  
13      enhanced oil recovery in -- within a basin or  
14      use that quantity of CO2 to better understand  
15      saline aquifers and how those aquifers respond  
16      to the injection of CO2. So, to get that  
17      information, it is a chicken and egg problem.

18                  We have lots of CO2; you know, we  
19      emit 150 million tons, you know, from the  
20      power and industrial sector in Indiana alone.  
21      The problem is that it is not compressed to a  
22      level that it takes on the characteristics of  
23      a fluid and can be injected into the earth,  
24      and because most of that -- almost all of that  
25      CO2 comes from very, what I'll call, dilute in

1 quotation marks sources like power plants, it  
2 is cost prohibitive to take that CO2 from say  
3 a conventional coal plant and compress it.

4 That is not the case with a  
5 gasification, and it is inherent to the  
6 gasification technology that the syn gas is  
7 under pressure, that the CO2 is much more  
8 concentrated and can more cost effectively be  
9 taken out of the syn gas before it leaves the  
10 smoke stack.

11 So, the advantage of this  
12 particular plant that does carbon capture and  
13 sequestration even at a partial level is  
14 that -- let's say the 15 to 20 percent  
15 quantity that we've identified in our  
16 testimony, that's the right amount to be doing  
17 these kinds of tests to expand EOR, enhanced  
18 oil recovery, and I'm sorry, I've been using  
19 that term and not defining it, and saline  
20 aquifer characterization within Indiana and  
21 the neighboring states, and if we project  
22 where scientists think we need to be on carbon  
23 capture in order to prevent climate change, it  
24 is fundamentally important that we advance  
25 these types of 500,000 to a million ton

1 capture projects.

2 I'm sorry, I didn't mean to give  
3 such a long answer, and I see everybody kind  
4 of shifting in their seat.

5 Q I'm not even sure if it was an answer, but  
6 we'll move on from there.

7 JUDGE STORMS: Mr. Polk, let me  
8 stop you right there.

9 Let's take a brief five- to  
10 seven-minute break, and then we'll just push  
11 on until lunch.

12

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19 (RECESS)

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25 (HEARING IN RECESS UNTIL 11:20 A.M., SAME DAY)

1 Indianapolis, Indiana  
2 June 21, 2007  
3 11:20 A.M. (EDT)

4 JUDGE STORMS: We'll go ahead and  
5 go back on the record.

6 Mr. Polk, you may proceed with  
7 your questions.

8 MR. POLK: Thank you, Your Honor.

9

10 **CROSS-EXAMINATION OF MR. JOHN THOMPSON,**

11 **(Continuing)**

12 **QUESTIONS BY MR. POLK: (Continuing)**

13 Q Because of the break, I'd like to kind of  
14 quickly move through a couple of questions and  
15 kind of go back and touch on what we talked  
16 about earlier just to make sure we're all on  
17 the same track here.

18 Carbon, you said, is one of two  
19 primary concerns with respect to -- that you  
20 have with respect to the environment going  
21 forward; correct, with respect to air  
22 emissions?

23 A Yes.

24 Q All right. And carbon has global  
25 implications?



1 A Right.

2 Q And, in fact, by many accounts, has some  
3 extremely profound implications for the  
4 climate and for the world as we know it;  
5 correct?

6 A Right.

7 Q And carbon emitted from a power plant goes  
8 into the environment and has a long duration,  
9 and sometimes as much as 100 years later  
10 20 percent of it can still be in the  
11 environment still impacting the global  
12 climate; right?

13 A Right.

14 Q And one of the reasons the CATF likes this  
15 IGCC plant is because you feel there is a  
16 need -- a strong need to begin now to actually  
17 do some real carbon capture and sequestration  
18 in a significant way?

19 A I would characterize it this way: There are  
20 several reasons, and I won't go through my  
21 direct testimony, but they deal with the  
22 criteria pollutants, NOx, SOx, SO2, and they  
23 deal with CO2, and they deal with  
24 sequestration.

25 Q So sequestration is one of the main reasons

1       you support this plant?

2    A   It is one -- It is an important reason, but as  
3       I say, it is not the only reason.

4    Q   And one of the main benefits of this plant for  
5       sequestration is because the other sources of  
6       carbon in the state are too dilute to be  
7       compressed and sequestered in the kind of  
8       quantities that you want for looking into  
9       sequestration?

10   A   It is more than that. There are, you know,  
11       other sources. You can perhaps -- I'm not  
12       familiar with say natural gas processing  
13       plants that might be in Indiana or other kinds  
14       of industrial uses, but the -- what makes the  
15       Edwardsport plant special is that not only can  
16       you get that CO<sub>2</sub> at a pretty low cost, but  
17       that that experience of capturing and either  
18       sending it to EOR or for sequestration is done  
19       within the power sector, and that is a  
20       significant portion of it, and there are  
21       other -- there may be other ways of doing that  
22       with FutureGen and other kinds of things, but  
23       the advantage of this particular plant is that  
24       it is a commercial plant. It is a commercial  
25       scale, and the CO<sub>2</sub> can be captured at fairly

1 relatively low cost.

2 Q Well, let's explore that for a moment. You  
3 say relatively low cost.

4 This would be a new source of  
5 carbon; correct?

6 A Well, it is repowering of existing plant.

7 Q And the new plant would have higher carbon  
8 emissions than the current plant; correct?

9 A It's definitely a bigger plant.

10 Q So it is, if not a new source of carbon  
11 emissions, a source of new carbon emissions;  
12 correct?

13 A It is an expanded source of carbon emissions.

14 Q We're expanding the source of carbon, and in  
15 order to generate the carbon that you want to  
16 capture and sequester, we have to spend \$2  
17 billion.

18 Do you consider that a cost-  
19 effective way to create the carbon that you  
20 need to run the capture and sequestration  
21 experiment?

22 A I think you've misunderstood our position.  
23 Let me try to explain it again.

24 This plant has advantages. It  
25 would be among one of the lowest sources of

1       SO<sub>2</sub> among coal plants not only in the nation  
2       but perhaps the world. The same could be said  
3       of nitrogen oxides; the same could be said of  
4       mercury; the same could be said of VOCs; the  
5       same could be said of carbon monoxide. There  
6       are a number -- The same could be said of  
7       solid waste, and the same could be said of  
8       water use.

9                       This technology of IGCC has real  
10       carbon benefits, but it has other benefits as  
11       well, and when you look at future regulations,  
12       when you look at all things, I think that it  
13       is a very attractive option for use of coal.

14    Q   Is it cleaner than a natural gas-fired plant?

15    A   Pardon?

16    Q   Would it be cleaner than a natural gas-fired  
17       plant?

18    A   The natural gas-fired power plant, if it is a  
19       combined cycle plant, would be a cleaner  
20       plant.

21    Q   Would it be cleaner than combined heat and  
22       power or CHP?

23    A   That depends on the specific plant.

24    Q   Okay. Say a natural gas fueled?

25    A   Sure.

1 Q Okay. So you're saying it would be cleaner  
2 than a combined heat and power plant; the IGCC  
3 would be cleaner than a combined heat and  
4 power plant or not?

5 A Yes, if you were to generate that combined  
6 heat and power from natural gas as opposed to  
7 a coal -- a conventional coal plant, and so,  
8 if what you were saying is a combined heat and  
9 power natural -- that utilizes natural gas as  
10 a fuel, that facility would be lower than, you  
11 know, the IGCC plant that we're discussing.

12 Q Would energy generated from a wind farm have  
13 lower air emissions than an IGCC plant?

14 A Yes.

15 Q Now, even with 20 percent capture and  
16 sequestration, there would still be a net  
17 increase in carbon emissions to the  
18 environment by repowering the Edwardsport  
19 plant as an IGCC facility; correct?

20 A It would emit more than the present  
21 Edwardsport facility.

22 Q Were you here -- Well, I know you weren't, but  
23 just for the record, you weren't here on  
24 Tuesday or on Monday when the Duke witnesses  
25 discussed their time line with respect to

1 carbon legislation, were you?

2 A I was not present.

3 Q Are you familiar with the testimony that Duke  
4 witnesses provided in the North Carolina  
5 Cliffside proceeding?

6 A In general terms, but I've not read their  
7 testimony.

8 Q Well, let me lay out a scenario, and I'm only  
9 going to represent that it is roughly in line  
10 with what Duke witnesses said, and I'm sure  
11 Duke counsel will correct me if that  
12 recollection is not correct, but they  
13 envisioned a time line of legislation being  
14 enacted sometime between 2009 and 2010 with  
15 the meat of the regulations or the legislation  
16 not really coming into effect until 2015, and  
17 with a safety valve that would prevent the  
18 cost of carbon compliance from going over, you  
19 know, \$10 or \$15 a ton, somewhere in that  
20 range.

21 MR. DuMOND: Objection. I think  
22 that's only a partial characterization of the  
23 testimony.

24 MR. POLK: I'll agree that it is  
25 only a partial characterization of the

1 testimony. I was just using that as a  
2 stepping-off point to get this witness's views  
3 on that type of hypothetical scenario and how  
4 they view carbon capture and sequestration  
5 kicking in.

6 JUDGE STORMS: I'll overrule the  
7 objection and allow the witness to answer.

8 A I don't understand the question.

9 Q I haven't gotten to the question yet.

10 Do you understand the fact  
11 pattern, though, the hypothetical?

12 Legislation in say 2010 with --

13 A So you're asking me to answer a hypothetical  
14 based on what you've just outlined?

15 Q Yes.

16 A Okay. I'm with you so far.

17 Q Okay. Under that scenario -- Well, let's just  
18 say: Do you have an expected cost per ton for  
19 carbon capture and sequestration?

20 A It depends on the level.

21 Q Let's start with 20 percent.

22 A A reasonable -- I will give you an EPRI  
23 number, an avoided cost of carbon. EPRI is  
24 the Electric Power Research Institute. They  
25 have examined varying levels of capture from

1       an IGCC plant ranging from say 20 percent to  
2       90 percent with various levels in between, and  
3       I may not have the numbers exactly right, but  
4       basically, the curve looks at -- would look  
5       something like this: The lowest avoided cost  
6       of carbon would occur at 20 percent. It would  
7       rise through say 40 and 50 and say 60 percent  
8       carbon capture or maybe 50 percent, and then  
9       begin to fall as it approaches 90 percent. At  
10      roughly 90 percent, if I remember the graphs  
11      correctly, it would be approximately the same  
12      as a 20 percent carbon capture from an IGCC  
13      plant, and that would be for a generic plant,  
14      at maybe \$20 a ton.

15    Q   Okay. Would you agree that if legislation  
16       were enacted that put a cap to producers of  
17       carbon of \$10 per ton to having to comply with  
18       the regulations, that a process that required  
19       them to pay \$20 a ton would likely never be  
20       implemented?

21    A   No.

22    Q   Can you explain why a company would spend  
23       twice as much as required under the law to  
24       comply with an environmental regulation?

25    A   It depends if they were selling the carbon for



1 enhanced oil recovery.

2 Q And you believe there is a sufficient market  
3 out there to generate \$10 a ton for carbon to  
4 be used in the oil industry?

5 A This is an area that I'm not going to  
6 represent myself as the world's greatest  
7 expert on, but let me tell you within my  
8 expertise what I've observed in the last 12  
9 months.

10 There is actually in the Permian  
11 Basin of Texas a shortage of CO<sub>2</sub>, and the  
12 price of CO<sub>2</sub> being purchased to do enhanced  
13 oil recovery is exceeding \$20 a ton. It is a  
14 function of the oil price. It is a function  
15 of availability. It is a function of a number  
16 of things. So, we're actually seeing those  
17 kinds of prices.

18 I would say the same is true in  
19 Canada where enhanced oil recovery is  
20 practiced and where one gasification plant has  
21 recently expanded to ship 3 million tons of  
22 CO<sub>2</sub> a year into Weyburn in order to do  
23 enhanced oil recovery.

24 So, I think that there are, you  
25 know, examples where that price is not

1       unrealistic.

2   Q   Is there a pipeline between Indiana and the  
3       Permian Basin to ship carbon down to Texas?

4   A   There is no CO2 pipeline between Indiana and  
5       Texas.

6   Q   And the same would be true for shipping CO2 to  
7       Canada? There is no pipeline to get carbon  
8       from the Edwardsport plant to Canada, is  
9       there?

10  A   No, but I would just say that is not where  
11       your targets would be for Indiana.

12  Q   True, but you were quoting market prices for  
13       Texas. You weren't quoting market prices for  
14       Indiana. Do you have market prices for  
15       Indiana?

16  A   I'm not giving you -- No, I don't.

17  Q   Do you believe that increasing the amount of  
18       carbon going into the environment -- Well,  
19       strike that.

20               Let's get back to this: Do you  
21       agree that if the Company adopted your  
22       proposal or if the Commission ordered the  
23       Company to capture and sequester 20 percent of  
24       the carbon, that 80 percent would still be  
25       released?

1 A Right.

2 Q And that would still have increased the carbon  
3 emissions, and if they didn't sequester any,  
4 100 percent of that carbon would be released;  
5 correct?

6 A Yes.

7 Q Okay. And we don't know whether sequestration  
8 will actually work because we haven't actually  
9 tried it near that plant; correct?

10 A I think while it's true that we have not done  
11 sequestration or enhanced oil recovery using  
12 CO<sub>2</sub>, at least, in the general vicinity of that  
13 plant, there is every reason to think that  
14 that's likely and a very high probability of  
15 being able to do both.

16 What I think is fundamental about  
17 this issue is where we have to be is to drop  
18 CO<sub>2</sub> from historic levels pretty dramatically,  
19 and we need new technologies in order to do  
20 that, and while there may be a short-term  
21 increase in CO<sub>2</sub>, because this plant doesn't  
22 capture, you know, all of its CO<sub>2</sub>, what's  
23 important is being able to replicate this  
24 example and being able to create options that  
25 allow us everywhere to be able to drop CO<sub>2</sub>

1 emissions, you know, radically from coal. I  
2 don't see how you can do that without building  
3 an IGCC plant.

4 Q So, your view is that capture and  
5 sequestration is a public good for all  
6 Americans, and that's why we should do it?

7 A It is a public good. It is a good that's good  
8 for Indiana. It is good for ratepayers. It  
9 is good for people in Illinois.

10 Q Should the people, then, in Illinois pay for  
11 it?

12 A I think that what -- Well, it is interesting.  
13 You know, I don't have an opinion about  
14 whether people in Illinois should pay for this  
15 particular plant.

16 Q Do you have a view whether people in Indiana  
17 should pay for it?

18 A I do. I think it is a reasonable alternative  
19 to producing electricity and in opening up  
20 options that will eventually lower the cost of  
21 future compliance that Indiana residents will  
22 have to meet.

23 Q You don't see that as inconsistent coming in  
24 from Illinois and suggesting that Indiana  
25 ratepayers should pay for something that

1       benefits folks in Illinois but not have an  
2       opinion as to whether folks in your home state  
3       should pay for it?

4   A   I imagine many of the witnesses come from out  
5       of state. I confess I have the disadvantage  
6       of never having been born in Indiana and not  
7       being a Hoosier, but despite that setback, I  
8       really think that my expertise and my  
9       testimony is really focused on what this plant  
10      can do, where it fits into a larger picture,  
11      and it just so happens that -- and as a part  
12      of that, there are clear benefits to Indiana  
13      and Indiana ratepayers.

14  Q   How many parts per million of carbon in the  
15       atmosphere would be a good target?

16  A   450 parts per million.

17  Q   Do you know what the current levels are?

18  A   We're in the high 300s.

19  Q   So we still have a little room to go? We can  
20       add some carbon emissions before we really  
21       need to level off?

22  A   Well, what we need to be doing right now is we  
23       don't have -- we need to be taking a number of  
24       steps on CO<sub>2</sub>, and time is running out, and one  
25       of those steps is building IGCC plants, and

1       there is a lot of good reasons for that, but  
2       that's one of the options.

3   Q   If time is of critical importance, wouldn't it  
4       make sense to do capture and sequestration at  
5       a facility that is already a gasification  
6       facility?

7   A   Can you be more specific?

8   Q   If there was already an IGCC operating in  
9       Indiana, wouldn't it make more sense to  
10      consider capture and sequestration at that  
11      facility --

12  A   Not necessarily.

13  Q   -- than building a new one?

14  A   Not necessarily.

15  Q   Would it be perhaps quicker to consider it at  
16      that facility?

17  A   Probably not.

18  Q   You wouldn't have the construction cost of  
19      building a plant.  You've already got the  
20      facility; correct?

21  A   To be clear, we're talking about the Wabash  
22      plant?

23  Q   Yes.

24  A   The Wabash plant is a 263 megawatt or 250  
25      megawatt power plant.  It is much smaller.

1       There are -- I don't know the mechanism -- I  
2       can't foresee a practical mechanism for  
3       actually paying for the conversion of that  
4       plant, but setting that issue aside, because  
5       of the nature of that plant, you really only  
6       have two carbon capture options for Wabash, a  
7       partial capture and a full capture because you  
8       don't have the intermediate.

9               So, the problem with capturing CO2  
10       from Wabash at 20 percent is that it doesn't  
11       give you enough useful quantities of CO2 to do  
12       the kind of EOR or saline aquifer work that  
13       would be most useful. On the other hand,  
14       doing 90 percent capture would turn the plant  
15       from a commercial plant to a demonstration  
16       plant. It would be a FutureGen project, and  
17       the cost of doing that would be fairly high,  
18       but doing that 90 percent at Wabash would give  
19       you good quantities.

20              Now, there are some practical  
21       issues with Wabash. One, you only have about  
22       12 acres to work with. Second, you have  
23       different technology. You have amine  
24       scrubbing. You have an older heat recovery  
25       steam generator. You have some unique things

1       that you're going to have to address within  
2       that particular plant. So, while on the  
3       surface there might be issues of why that  
4       would lend itself to being a good solution, in  
5       balance, I think Edwardsport has -- with  
6       partial capture has some really compelling  
7       reasons that make it a better alternative.

8                     It is a commercial sized plant.  
9       At 20 percent capture, you get significant  
10      quantities of CO2 that are useful, and yet,  
11      the cost of the plant would still be one that  
12      is a commercial plant, not a demonstration  
13      plant, and those in my mind outweigh any kind  
14      of benefits of trying to offer Wabash and  
15      capture there as a substitute for what we've  
16      outlined in this proceeding.

17    Q   And, again, as long as the goal is to prove  
18       capture and sequestration works and not to  
19       actually reduce the amount of carbon  
20       emissions?

21    A   I'd say there are several goals, but  
22       certainly, you know, one of the advantages of  
23       doing Wabash at say 90 percent or 20 percent  
24       is that it would reduce plant emissions from  
25       an existing plant to a lower level.



1                   MR. POLK: I have no further  
2       questions, Your Honor.

3                   Thank you, Mr. Thompson.

4                   JUDGE STORMS: Thank you, Mr.  
5       Polk.

6                   Duke?

7                   MR. DuMOND: Thank you, Your  
8       Honor.

9

10    **CROSS-EXAMINATION OF MR. JOHN THOMPSON,**

11       **QUESTIONS BY MR. DuMOND:**

12    Q   Good morning, Mr. Thompson.

13    A   Good morning.

14    Q   I think it's still morning.

15    A   It is. It seems to be.

16    Q   As I understand it, you support the  
17       Edwardsport IGCC plant because it will be one  
18       of the cleanest power plants in the world if  
19       constructed; is that correct?

20    A   That's correct.

21    Q   And, in fact, it will have significantly lower  
22       CO2 emissions, NOx emissions, mercury  
23       emissions and particulate emissions than  
24       existing pulverized coal plants?

25    A   Yes.

1 Q Would you agree that the rate of emissions for  
2 all pollutants from the plant would be less  
3 than a pulverized coal plant?

4 A Yes.

5 Q Would you agree that the rate of CO2 emissions  
6 at the IGCC plant will be lower than existing  
7 coal plants in the Midwest?

8 A Yes.

9 Q And, in fact, the rate of emissions from that  
10 plant for VOCs, carbon monoxide and lead would  
11 be less than traditional pulverized coal  
12 plants?

13 A Yes, I would agree with that. I think when  
14 you get into some of the toxic metals, the  
15 challenge is that they're not directly  
16 measured, but I think as a general rule, as an  
17 emission rate, those would be lower than a  
18 pulverized coal plant.

19 Q Mr. Polk asked you if there -- if you thought  
20 there was a risk for utilities if they do not  
21 begin addressing or planning for carbon  
22 regulations.

23 Would you agree that the proposed  
24 IGCC Project is a way in which Duke Energy  
25 Indiana is, in fact, preparing for carbon

1 regulations?

2 A I would agree.

3 Q Are you aware that Duke Energy Indiana has  
4 aggressively sought tax benefits associated  
5 with the Edwardsport plant?

6 A I am.

7 Q And, in fact, are you aware that Duke Energy  
8 Indiana has been awarded federal investment  
9 tax credits for that plant in the amount of  
10 approximately \$133 million?

11 A Yes.

12 Q You heard testimony that it might be  
13 appropriate or questions regarding the  
14 appropriateness of shareholders to contribute  
15 to the cost of carbon capture and  
16 sequestration.

17 Would you agree that as a  
18 regulated utility, it is appropriate for Duke  
19 Energy Indiana to seek cost recovery for  
20 carbon capture and sequestration from its  
21 ratepayers if, in fact, carbon capture and  
22 sequestration is implemented at the plant?

23 A I do.

24 Q Are you aware of whether the State of Illinois  
25 is aggressively promoting IGCC technology?

1 A I am. They are.

2 Q Briefly, what are some of the things the State  
3 of Illinois is doing to promote this  
4 technology?

5 A They have paid -- awarded grants to pay for  
6 portions of what's called the FEED package.  
7 They have offered tax credits or tax breaks  
8 maybe, not credits but breaks. They have --  
9 In general terms, those would be the areas  
10 that they have sought to provide IGCC  
11 incentives.

12 Q Are you aware of whether they're also  
13 promoting the development of a CO2 pipeline?

14 A They are. The pipeline would -- has not been  
15 formalized, but, at least, some drawings would  
16 show it going from the mid-section of the  
17 state to the southern section of the state.

18 Q Apart from the potential for carbon capture  
19 and sequestration, do you agree that one of  
20 the primary benefits of the Edwardsport IGCC  
21 plant is that it will be a highly efficient  
22 plant with superior environmental performance?

23 A Yes.

24 MR. DuMOND: No further questions.

25 JUDGE STORMS: Thank you, Mr.

1 DuMond.

2 Mr. Hartley, redirect for this  
3 witness?

4 MR. HARTLEY: Thank you, Your  
5 Honor.

6

7 **REDIRECT EXAMINATION OF MR. JOHN THOMPSON,**

8 **QUESTIONS BY MR. HARTLEY:**

9 Q Just one area, Mr. Thompson, where I don't  
10 want you to be misunderstood. You talked  
11 about, you know, the first airplane off the  
12 line costing something, and then as more are  
13 produced, the price goes down.

14 I am old enough to remember when  
15 IBM introduced the first PC in 1982, and you  
16 paid about \$3,000 for a computer that wouldn't  
17 do very much, and today I can go to Dell and  
18 buy a computer that is about a thousand times  
19 as powerful for \$700 and get a printer with  
20 it.

21 In your testimony, are you  
22 suggesting that all the people that bought PCs  
23 at the prices they were in 1982, 1983, 1984,  
24 et cetera, made bad economic decisions?

25 A No.

1 Q If you needed a PC in 1982, you had to pay  
2 what it cost in 1982; right?

3 A That's right.

4 Q If you could afford to wait until 2007 and do  
5 without it until then, you could get a better  
6 price in 2007 for a more powerful computer?

7 A Correct.

8 Q So if you need a power plant in 2012 that you  
9 have to start building now, you have to pay  
10 today's prices?

11 A Correct.

12 Q If you didn't need one until 2030, you might  
13 be able to wait and get an IGCC plant less  
14 expensively; right?

15 A I think that would be true.

16 MR. HARTLEY: That's all.

17 JUDGE STORMS: Mr. Thompson, thank  
18 you very much for your testimony. You're  
19 excused.

20 (WITNESS JOHN THOMPSON EXCUSED ON DIRECT  
21 AND REBUTTAL)

22

23 JUDGE STORMS: Let's go ahead and  
24 break for lunch and reconvene here at 1:15.

25 (HEARING IN RECESS UNTIL 1:15 P.M., SAME DAY)

\$	29 [6] 47/18 47/24 48/1 48/5 48/8 52/8	acquired [1] 28/5
\$1 [1] 3/15	3	acres [1] 111/22
\$10 [5] 3/22 3/25 102/19 104/17 105/3	3-C [6] 38/3 41/15 42/9 42/14 42/18 44/1	across [2] 11/16 92/15
\$12 [1] 4/4	3-Confidential [1] 41/15	act [1] 71/5
\$133 [1] 115/10	3.24 [2] 27/24 28/17	acted [1] 53/5
\$14 [7] 2/24 3/17 4/1 4/5 5/16 7/11 7/14	30 [1] 83/11	acting [1] 77/16
\$14.7 [1] 2/22	300s [1] 109/18	actual [4] 29/13 37/5 37/9 92/10
\$14.7-some [1] 2/22	320 [2] 24/20 25/13	actually [17] 14/7 46/25 48/16 51/21 68/20
\$15 [1] 102/19	33 [1] 25/13	80/21 89/25 91/19 92/4 92/6 97/16 105/10
\$16 [1] 3/10	4	105/16 107/8 107/8 111/3 112/19
\$2 [3] 3/13 40/24 99/16	40 [1] 104/7	add [4] 19/9 40/15 82/18 109/20
\$20 [3] 104/14 104/19 105/13	42170 [1] 49/2	added [1] 28/6
\$3,000 [1] 117/16	42248-P2 [2] 48/24 49/18	additional [2] 4/10 60/8
\$33 [1] 24/12	42622 [1] 48/21	address [7] 64/2 77/17 77/22 79/22 84/22
\$4 [1] 4/1	42700 [1] 49/2	92/13 112/1
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\$80 [2] 28/22 29/10	43111 [1] 51/4	87/14 92/1 114/21
'	43183 [1] 41/2	adjusted [1] 52/6
'clean [1] 22/7	43188 [1] 41/2	adjustment [1] 52/11
'float' [1] 55/1	450 [1] 109/16	adjustments [2] 51/25 89/1
1	5	ADMINISTERED [2] 38/14 63/8
10 [3] 23/15 54/24 71/15	50 [2] 93/6 104/7	admit [1] 60/20
10,000 [3] 23/17 23/21 23/22	50 percent [1] 104/8	admitted [13] 12/1 12/6 16/2 16/9 42/18
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10:30 [2] 57/25 58/2	6	adopt [3] 42/7 65/8 66/17
11 [3] 22/4 24/10 71/14	60 percent [1] 104/7	adopted [1] 106/21
11:20 [2] 95/25 96/2	7	advance [5] 74/3 92/5 92/15 93/12 94/24
12 [8] 4/12 4/13 4/15 22/5 23/16 45/23	700,000 tons [1] 30/17	advantage [3] 86/6 94/11 98/23
45/25 105/8	727 [1] 88/21	advantages [2] 99/24 112/22
12 acres [1] 111/22	727s [1] 88/18	adverse [2] 79/14 80/17
12-month [2] 3/23 4/19	8	advice [1] 75/24
13 [1] 65/23	8 percent [4] 49/25 50/14 50/22 52/16	advocate [1] 91/21
130 [1] 69/15	8-1-8.8 [1] 52/9	affect [3] 25/9 80/13 81/14
14 [6] 3/12 3/22 5/23 23/16 24/14 66/1	8-1-8.8-1 [2] 47/18 47/25	afford [1] 118/4
15 [5] 24/14 28/5 65/24 66/2 94/14	8.8 [1] 52/9	after [11] 7/21 11/13 40/16 71/17 71/19
150 [1] 93/19	80 percent [1] 106/24	71/20 71/20 71/25 78/14 81/19 81/24
16 [5] 3/12 34/16 51/22 66/2 69/20	800,000 tons [1] 28/20	after-the-fact [1] 7/21
16 percent [2] 24/19 24/20	9	again [15] 7/25 23/11 24/1 24/6 32/7 32/10
17 [3] 34/16 51/6 58/11	90 percent [6] 104/2 104/9 104/10 111/14	33/1 33/7 47/20 56/24 68/12 69/21 91/17
18 [1] 40/20	111/18 112/23	99/23 112/17
182 [4] 117/15 117/23 118/1 118/2	9:00 [1] 1/2	agency [1] 11/14
1983 [1] 117/23	A	agency's [1] 10/7
1984 [1] 117/23	A.M [5] 1/2 57/25 58/2 95/25 96/2	aggravating [1] 79/18
1:15 [2] 118/24 118/25	ability [1] 33/5	aggressively [2] 115/4 115/25
1E [1] 64/3	able [7] 9/3 90/18 107/15 107/23 107/24	agree [35] 2/13 3/1 3/11 7/20 9/13 9/17
2	107/25 118/13	46/4 46/15 47/7 47/17 47/21 48/14 48/18
20 percent [19] 27/19 28/2 28/5 28/15	about [44] 2/11 10/6 10/10 10/22 19/14	49/8 49/11 49/15 49/23 50/2 50/10 52/4
28/19 29/16 30/3 81/21 94/14 97/10 101/15	21/10 21/17 21/25 23/6 31/9 47/16 47/22	53/18 54/18 55/9 69/11 85/9 102/24 104/15
103/21 104/1 104/6 104/12 106/23 111/10	50/15 50/15 50/23 51/22 52/24 52/25 53/13	106/21 114/1 114/5 114/13 114/23 115/2
112/9 112/23	55/6 56/25 57/18 62/3 68/14 68/20 71/11	115/17 116/19
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2007 [5] 1/1 58/1 96/1 118/4 118/6	85/21 92/19 96/16 107/16 108/13 110/21	agreement [2] 52/25 56/16
2009 [1] 102/14	111/21 117/11 117/16 117/18	agrees [2] 6/10 21/20
2010 [2] 102/14 103/12	Absolutely [3] 76/3 79/3 85/4	ahead [8] 1/15 33/25 58/18 59/22 60/8
2011 [1] 81/13	abundant [1] 83/15	60/15 96/4 118/23
2012 [7] 71/17 71/19 71/20 71/20 71/25	accept [1] 5/8	air [21] 59/15 60/2 60/25 63/11 63/22
72/2 118/8	access [1] 90/16	63/23 64/6 66/21 67/10 75/4 78/23 79/2
2015 [2] 88/3 102/16	accommodate [1] 52/2	79/6 79/10 82/5 82/13 84/22 85/1 90/8
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206 [3] 22/8 22/16 22/19	accounts [1] 97/2	aircraft [1] 86/17
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231 [1] 64/3	achieve [1] 71/17	all [32] 2/15 9/18 10/19 11/21 13/1 17/24
24 [3] 64/18 64/23 74/22	acknowledged [1] 56/20	26/6 30/1 31/6 32/15 53/10 55/14 56/4 57/3
25 percent [1] 78/15		59/4 61/1 65/4 66/13 70/2 74/5 79/2 84/13
250 [1] 110/24		88/16 93/24 96/16 96/24 100/12 107/22
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		allowed [2] 47/13 55/4

A		
almost [2] 40/24 93/24 alone [1] 93/20 along [2] 9/4 59/4 already [5] 3/17 4/6 110/5 110/8 110/19 also [21] 2/14 6/13 21/20 28/3 41/13 47/15 48/2 48/8 48/23 49/19 53/14 54/23 55/9 55/11 59/19 60/15 65/12 70/15 78/9 82/24 116/12 alternative [3] 82/20 108/18 112/7 although [1] 41/23 am [7] 7/19 35/24 50/19 72/18 115/6 116/1 117/14 amenable [1] 92/7 amended [2] 10/23 10/25 Americans [1] 108/6 amine [1] 111/23 among [3] 78/18 99/25 100/1 amount [9] 2/22 3/6 3/7 3/21 81/20 94/16 106/17 112/19 115/9 amounts [1] 93/11 analogous [1] 87/20 analogs [1] 92/20 analysis [1] 36/13 analyst [2] 15/7 39/13 and/or [1] 75/3 another [1] 69/2 answer [10] 23/24 24/1 24/7 33/9 47/4 87/2 95/3 95/5 103/7 103/13 answered [1] 81/25 answering [3] 9/12 62/9 62/20 answers [5] 15/16 19/24 41/10 65/6 66/15 anticipate [1] 10/14 any [32] 5/24 10/15 15/12 22/19 24/7 25/2 25/19 30/8 30/13 30/16 31/9 31/12 32/22 33/12 34/3 35/25 39/23 42/15 56/14 56/15 56/25 62/12 64/13 64/25 65/18 66/9 72/7 73/15 78/7 83/7 107/3 112/13 anything [5] 21/10 21/17 21/25 41/25 54/5 anyway [1] 76/6 Apart [1] 116/18 appearing [4] 2/1 14/16 39/1 63/10 appears [3] 11/10 41/23 42/2 application [1] 28/10 applies [1] 33/6 apply [2] 48/3 54/11 appoint [1] 87/22 appreciable [1] 83/7 approach [1] 50/24 approaches [1] 104/9 appropriate [2] 115/13 115/18 appropriateness [1] 115/14 approved [6] 49/14 52/3 52/8 52/18 56/11 81/12 approximately [5] 23/17 24/11 28/20 104/11 115/10 aquifer [4] 31/5 31/14 94/20 111/12 aquifers [2] 93/15 93/15 are [105] 4/15 6/7 7/17 7/18 9/5 15/6 17/20 18/2 21/8 21/21 22/1 23/5 24/11 27/1 28/15 30/16 30/19 31/3 31/6 32/15 32/22 33/12 33/15 35/21 36/6 39/10 39/23 48/16 49/3 50/17 56/4 63/21 64/13 64/25 66/9 66/14 68/13 68/18 68/21 69/16 69/22 70/2 70/8 70/13 73/15 73/22 74/13 74/15 75/20 75/25 76/1 78/1 78/2 78/11 78/18 79/7 79/9 79/21 80/16 80/22 81/2 83/22 84/3 84/5 84/17 85/15 85/16 86/18 87/3 87/5 87/5 87/20 88/5 88/6 88/16 89/6 89/7 90/9 90/21 90/24 91/9 91/18 93/10 97/19 98/6 98/10 98/20 100/6 102/3 105/24 109/12 109/17 111/1 111/20 112/10 112/21 115/3 115/7 115/24	116/1 116/2 116/12 116/14 117/12 117/21 area [9] 29/21 29/21 87/6 92/9 92/10 92/11 92/11 105/5 117/9 areas [1] 116/9 aren't [2] 4/23 68/21 around [5] 23/3 28/21 69/16 69/20 90/13 arrangement [1] 59/5 articles [1] 25/18 as [109] 1/6 1/11 2/5 2/12 2/25 4/5 4/25 6/5 6/19 6/19 6/20 7/9 8/23 8/23 9/15 10/12 10/12 11/2 11/8 14/2 14/18 14/24 15/7 17/18 20/19 20/19 20/22 20/23 24/4 26/20 27/14 28/13 33/4 38/2 39/3 39/13 39/18 40/23 41/14 42/10 47/17 52/10 52/10 52/15 53/10 53/18 58/5 58/10 58/14 60/2 60/14 62/11 63/15 64/5 65/9 66/14 66/17 67/4 70/19 70/22 70/22 70/25 71/4 74/18 75/16 77/11 78/11 79/4 79/11 79/21 79/23 80/8 81/17 83/1 83/4 83/25 84/14 85/1 86/6 86/7 88/12 88/17 92/17 97/4 97/9 97/9 98/2 100/10 101/6 101/9 101/19 103/1 104/9 104/12 104/23 104/23 105/6 108/23 109/2 109/11 112/15 112/17 112/17 113/16 114/16 114/16 115/17 117/12 117/19 aside [1] 111/4 ask [9] 7/25 11/8 41/8 64/24 65/4 66/13 71/7 84/3 84/7 asked [10] 10/22 11/21 15/15 21/24 30/12 53/10 67/5 75/17 77/8 114/19 asking [5] 6/20 10/10 19/23 84/5 103/13 assembly [6] 86/15 88/19 90/1 91/2 91/11 91/16 assessment [1] 92/23 associated [5] 31/17 52/8 76/10 82/12 115/4 assume [1] 78/24 asthma [1] 79/18 atmosphere [5] 78/12 78/17 81/18 81/22 109/15 atmospheric [1] 79/6 attached [9] 16/8 43/5 44/5 59/21 61/8 61/13 67/18 67/23 91/1 attachment [10] 41/1 42/2 44/4 48/12 56/3 60/22 61/7 61/11 67/17 67/22 attachments [6] 16/7 43/4 60/23 61/2 64/11 65/9 attacks [1] 79/19 attention [3] 64/23 65/23 71/13 attorney [1] 33/5 attractive [1] 100/13 attributes [1] 91/4 authorized [2] 52/1 52/5 availability [1] 105/15 available [4] 17/1 45/2 68/2 70/13 average [1] 50/8 avoided [2] 103/23 104/5 awarded [2] 115/8 116/5 aware [11] 32/22 33/3 33/12 35/21 36/6 73/15 76/1 115/3 115/7 115/24 116/12 away [2] 6/1 82/25 awful [1] 80/1 awhile [1] 23/11	34/11 35/16 37/1 37/21 barge [1] 90/16 base [9] 2/21 2/24 3/18 3/21 4/4 4/6 9/13 10/4 53/24 base-load [1] 9/13 based [5] 19/10 50/6 70/11 70/12 103/14 basically [2] 27/23 104/4 basin [3] 93/13 105/11 106/3 basins [1] 93/4 basis [4] 22/23 25/19 44/6 69/14 be [149] bear [3] 69/5 74/8 76/10 because [24] 19/11 56/21 78/4 78/9 83/13 85/9 85/24 86/22 87/12 88/14 89/9 89/10 90/2 90/11 91/1 93/24 96/13 97/15 98/5 107/8 107/21 111/4 111/7 113/17 Becker [8] 17/4 17/5 45/3 45/4 72/9 72/14 73/5 75/17 been [27] 2/2 7/14 8/24 11/7 14/17 14/24 23/11 27/4 33/17 33/17 38/9 39/2 39/17 41/13 50/18 53/5 60/2 63/4 63/13 64/5 69/23 85/15 93/7 94/18 109/6 115/8 116/14 before [19] 4/6 11/6 14/23 25/20 26/18 28/13 36/13 39/17 41/13 50/5 52/17 64/5 64/14 65/12 65/19 66/10 67/4 94/9 109/20 began [1] 71/24 begin [4] 77/22 97/16 104/9 114/21 beginning [1] 69/24 begins [1] 51/21 behalf [5] 2/1 14/16 39/1 63/10 77/15 being [18] 16/5 28/6 33/15 43/1 44/1 53/20 61/5 61/9 62/20 67/15 67/20 102/13 105/12 107/15 107/23 107/24 109/7 112/4 believe [22] 18/4 18/9 20/5 20/6 23/23 25/16 25/23 26/16 26/25 53/22 59/14 59/20 60/19 62/6 65/12 74/7 76/9 77/14 77/20 83/20 105/2 106/17 Bench [1] 60/12 beneficial [1] 76/7 benefit [2] 74/4 85/22 benefits [12] 2/10 74/14 74/16 75/15 98/4 100/10 100/10 109/1 109/12 112/14 115/4 116/20 best [1] 70/21 better [6] 23/24 75/25 83/22 93/14 112/7 118/5 between [10] 3/12 3/25 5/16 7/23 32/8 89/22 102/14 104/2 106/2 106/4 Biewald [2] 62/10 62/21 big [2] 25/15 31/8 bigger [1] 99/9 bill [14] 22/8 22/16 22/18 22/19 23/1 23/2 23/4 47/17 47/24 48/1 48/5 48/8 52/8 71/15 billion [3] 22/10 40/24 99/17 bills [1] 71/11 bind [1] 83/12 bit [2] 9/2 32/19 bite [1] 28/8 black [1] 56/22 Blakley [15] 38/8 38/9 38/10 39/1 39/9 39/10 42/7 43/3 44/4 45/1 45/18 56/1 56/3 57/5 57/13 block [6] 58/24 59/6 89/14 90/21 90/24 91/6 blocks [1] 92/18 blow [1] 80/21 Boeing [4] 86/19 87/17 88/18 88/21 boil [1] 79/7 boiler [3] 90/20 90/25 91/5 born [2] 72/22 109/6 both [4] 49/11 80/1 84/7 107/15 bottom [3] 9/15 21/2 51/22 bought [1] 117/22
	B	
	B-l-a-k-l-e-y [1] 39/9 back [16] 1/16 2/9 2/18 10/6 11/14 23/8 23/9 23/13 34/1 56/3 58/19 71/7 82/2 96/5 96/15 106/20 background [1] 25/17 bad [1] 117/24 balance [1] 112/5 ball [1] 71/4 Barbara [9] 14/12 14/16 16/6 17/10 26/11	



<b>B</b>		
box [1] 56/22 break [6] 42/5 57/19 58/24 95/10 96/13 118/24 breaks [2] 116/7 116/8 bridging [1] 83/21 brief [1] 95/9 Briefly [1] 116/2 bring [2] 42/4 51/8 bringing [1] 90/14 brings [1] 87/7 broad [1] 31/11 broadly [1] 85/11 brought [1] 90/23 Bruce [2] 62/10 62/21 build [2] 88/3 88/6 building [5] 108/2 109/25 110/13 110/19 118/9 built [4] 71/17 71/18 86/4 87/5 burn [2] 34/18 78/8 business [1] 64/2 businesses [1] 90/9 buy [2] 86/4 117/18 buying [1] 86/11	92/8 92/16 93/12 94/12 94/22 96/18 96/24 97/7 97/17 98/6 99/5 99/7 99/10 99/11 99/13 99/14 99/15 99/19 100/5 100/10 101/17 102/1 102/18 103/4 103/19 103/23 104/6 104/8 104/12 104/17 104/25 105/3 106/3 106/7 106/18 106/24 107/2 107/4 109/14 109/20 111/6 112/19 114/10 114/21 114/25 115/15 115/20 115/21 116/18 Carbondale [2] 64/3 72/17 care [1] 62/2 Carolina [1] 102/4 case [44] 3/12 3/24 4/3 4/9 4/10 5/14 5/19 5/19 10/4 17/25 19/1 20/19 21/1 25/19 26/24 27/12 40/15 41/6 46/12 47/14 48/17 48/22 48/24 48/25 48/25 49/12 49/18 50/7 50/9 50/12 50/14 50/17 50/20 51/3 51/8 53/18 53/19 53/22 53/24 54/8 54/13 56/21 65/16 94/4 cases [13] 40/4 48/13 48/15 48/21 49/2 49/4 49/7 49/9 49/17 53/10 53/12 56/14 56/19 CATF [6] 58/6 61/4 61/9 67/14 67/19 97/14 cause [15] 12/1 16/2 25/12 39/15 41/1 41/22 42/10 42/18 48/21 51/3 61/2 62/15 65/10 66/18 67/12 century [3] 79/7 83/5 87/15 certain [3] 50/23 54/19 71/6 certainly [3] 33/12 75/13 112/22 Certificate [2] 60/8 60/16 cetera [1] 117/24 challenge [1] 114/15 challenges [4] 56/20 79/6 79/21 79/21 change [12] 40/9 40/13 40/19 40/25 65/4 65/25 66/13 78/2 78/21 86/1 92/18 94/23 changes [12] 15/12 39/23 39/25 41/4 64/13 64/17 64/25 65/18 66/9 66/25 67/1 89/2 characteristics [2] 91/12 93/22 characterization [3] 94/20 102/22 102/25 characterize [2] 88/12 97/19 charge [1] 87/18 cheap [1] 83/16 check [3] 5/8 31/1 48/15 checking [1] 48/19 chemicals [1] 69/18 chicken [1] 93/17 China [7] 79/16 80/7 80/13 80/16 80/23 81/1 90/7 CHP [1] 100/22 circumstances [1] 3/8 cited [1] 22/20 clarification [1] 53/4 clarified [1] 81/24 clarify [2] 3/5 81/23 clause [3] 7/18 34/16 40/22 clean [20] 46/10 56/6 59/15 60/2 60/24 62/2 63/11 63/22 63/23 64/6 66/21 67/10 75/3 75/21 78/23 82/5 84/22 85/1 87/8 90/7 clean-up [2] 62/2 87/8 cleaner [7] 34/18 100/14 100/16 100/19 100/21 101/1 101/3 cleanest [1] 113/18 clear [6] 6/4 6/14 47/15 85/6 109/12 110/21 clearly [2] 81/5 87/3 clients [4] 21/8 21/17 22/1 83/3 Cliffside [1] 102/5 climate [9] 78/2 78/20 80/13 86/1 87/14 92/18 94/23 97/4 97/12 climb [3] 64/19 64/24 83/11 closer [1] 80/19 CO2 [49] 23/18 24/13 28/19 29/16 30/17 31/4 31/13 31/17 32/4 70/16 78/8 78/9	78/11 78/15 78/21 79/24 80/24 80/25 81/4 81/5 81/17 85/18 93/6 93/14 93/16 93/18 93/25 94/2 94/7 97/23 98/16 98/25 105/11 105/12 105/22 106/4 106/6 107/12 107/18 107/21 107/22 107/25 109/24 111/9 111/11 112/10 113/22 114/5 116/13 coal [52] 34/18 34/18 46/3 46/6 46/10 46/18 47/8 47/10 56/6 63/25 69/22 69/24 74/4 75/21 77/16 82/3 82/6 82/8 82/10 82/12 82/23 82/25 83/1 83/7 83/10 83/14 83/15 83/19 83/24 84/6 84/10 84/20 84/21 84/25 85/13 89/6 90/10 90/19 91/2 91/4 92/8 94/3 100/1 100/13 101/7 101/7 108/1 113/24 114/3 114/7 114/11 114/18 coal' [1] 22/7 coal-fired [4] 46/3 46/6 47/8 77/16 coasts [1] 80/18 code [4] 47/18 47/24 47/25 52/9 collected [1] 11/15 combination [1] 27/21 combined [8] 25/17 85/3 100/19 100/21 101/2 101/3 101/5 101/8 combustion [1] 78/11 come [9] 48/3 50/11 56/24 71/7 80/6 81/17 82/2 88/18 109/4 comes [5] 19/22 29/12 86/15 92/23 93/25 comfortable [1] 9/12 coming [6] 23/25 54/8 83/5 91/23 102/16 108/23 comments [2] 10/8 10/9 commercial [9] 69/8 70/6 70/12 86/3 98/24 98/24 111/15 112/8 112/12 commercially [1] 69/11 Commission [10] 10/15 10/20 10/25 20/25 25/21 49/14 52/18 53/5 60/7 106/22 commissioned [1] 29/14 COMMISSIONER [1] 64/20 communications [2] 11/11 12/5 companies [2] 70/8 74/11 company [7] 4/12 4/14 32/3 52/7 104/22 106/21 106/23 Company's [3] 5/20 52/1 52/4 compare [2] 25/6 54/6 compared [2] 24/4 79/5 comparing [1] 34/24 comparison [1] 34/21 compelling [1] 112/6 compilation [2] 21/14 21/18 complete [1] 41/21 completed [1] 35/25 compliance [2] 102/18 108/21 comply [2] 104/17 104/24 component [1] 92/6 components [7] 70/2 89/15 90/12 90/21 91/3 91/19 92/4 compress [1] 94/3 compressed [2] 93/21 98/7 computer [3] 117/16 117/18 118/6 concentrated [1] 94/8 concentrations [1] 80/23 concern [2] 69/9 79/4 concerned [2] 78/25 79/1 concerns [1] 96/19 conclude [1] 8/8 conclusion [6] 20/8 31/20 33/3 33/7 46/21 46/24 conduct [1] 36/12 confess [2] 81/23 109/5 confident [2] 70/5 70/11 confidential [6] 41/15 41/25 42/3 44/2 44/6 58/16 confirm [1] 34/20 congregate [1] 58/25
<b>C</b>		
calculation [4] 4/25 6/10 55/4 55/12 California [1] 80/18 call [8] 14/6 38/6 53/14 63/2 63/3 69/19 93/11 93/25 called [1] 116/6 calls [9] 14/11 27/7 31/20 33/2 33/6 38/8 46/20 46/23 46/24 came [3] 6/18 54/12 89/1 can [57] 4/21 4/24 5/8 5/10 8/12 11/9 15/2 15/11 20/25 21/23 23/12 25/8 27/14 27/18 28/4 30/1 30/16 31/8 31/12 31/16 32/3 32/12 32/14 32/14 32/19 41/18 42/4 47/6 49/11 51/4 51/10 51/15 53/24 54/4 58/25 59/24 74/9 79/10 80/6 84/14 85/10 89/10 90/15 90/22 93/6 93/23 94/8 97/10 98/11 98/15 98/25 104/22 108/2 109/10 109/19 110/7 117/17 can't [4] 19/21 54/18 54/22 111/2 Canada [3] 105/19 106/7 106/8 cap [1] 104/16 capacity [7] 15/6 18/7 18/12 18/14 18/22 19/2 39/11 capital [4] 24/10 50/13 55/1 55/5 capture [72] 17/19 17/20 18/7 18/11 19/8 19/18 20/24 24/13 27/19 28/4 28/16 28/19 30/3 32/24 33/14 35/22 36/2 36/7 36/16 37/4 37/9 70/16 73/25 74/1 74/3 74/15 75/5 76/7 76/11 77/13 84/16 85/7 85/24 87/6 87/12 88/9 91/8 91/9 91/13 91/15 91/22 92/10 92/17 94/12 94/23 95/1 97/17 99/16 99/20 101/15 103/4 103/19 103/25 104/8 104/12 106/23 107/22 108/4 110/4 110/10 111/6 111/7 111/7 111/14 112/6 112/9 112/15 112/18 115/15 115/20 115/21 116/18 captured [1] 98/25 capturing [4] 91/24 92/7 98/17 111/9 car [2] 78/16 78/16 carbon [104] 17/19 17/20 18/6 18/11 19/8 19/18 20/24 21/21 22/6 22/19 22/24 23/25 26/1 27/19 28/16 30/3 32/24 33/14 35/22 36/1 36/7 36/16 37/4 37/8 71/1 71/12 72/1 73/25 74/1 74/3 74/15 74/25 75/5 76/7 76/11 77/17 77/22 77/24 78/1 78/3 79/1 79/4 80/2 80/12 81/8 81/10 84/14 84/16 85/6 85/23 87/6 87/12 91/21 91/25 92/2		

C	5/22 credits [3] 115/9 116/7 116/8 criteria [1] 97/22 critical [4] 34/17 35/6 40/17 110/3 critically [2] 78/21 85/25 cross [24] 2/7 6/14 6/20 7/25 8/18 8/22 17/2 17/10 26/11 34/11 35/16 42/9 45/2 45/18 60/21 62/9 62/20 68/2 68/8 72/13 73/10 77/1 96/10 113/10 cross-examination [18] 2/7 6/14 6/20 8/18 8/22 17/10 26/11 34/11 35/16 42/9 45/2 45/18 68/8 72/13 73/10 77/1 96/10 113/10 crystal [1] 71/4 curious [1] 24/21 current [2] 99/8 109/17 currently [2] 30/2 83/2 curve [3] 86/5 86/25 104/4 CUSTOMER [1] 12/5 customers [14] 2/25 3/6 3/16 3/24 4/3 4/14 4/16 4/23 5/14 5/22 6/2 11/11 74/8 74/13 customers' [2] 5/20 8/20 CWIP [6] 48/2 50/4 50/6 54/10 55/6 55/12 cycle [1] 100/19	didn't [8] 5/24 18/13 51/7 85/17 87/22 95/2 107/3 118/12 differ [1] 6/22 difference [5] 3/12 3/25 5/15 24/19 32/8 differences [1] 89/7 different [18] 3/4 8/15 24/21 25/11 29/12 46/6 46/8 46/11 46/16 47/8 47/12 52/12 60/6 70/1 80/25 83/4 92/3 111/23 difficult [2] 18/17 83/12 dilute [2] 93/25 98/6 dioxide [1] 78/3 direct [21] 14/21 39/5 39/14 51/19 60/1 60/13 61/6 61/10 63/14 63/17 64/9 64/23 64/25 65/23 67/16 70/1 71/13 74/22 82/6 97/21 118/20 directly [2] 79/11 114/15 Director [1] 63/25 disadvantage [1] 109/5 disagreeing [1] 25/20 disagreement [1] 69/14 discussed [8] 10/11 22/21 27/12 27/13 32/13 33/16 33/18 101/25 discusses [2] 28/2 28/3 discussing [4] 2/10 15/11 52/17 101/11 discussion [3] 10/6 33/23 56/25 dispatch [1] 9/9 dispatched [1] 9/14 distributed [1] 60/11 divide [1] 69/18 do [104] 2/13 3/1 7/7 10/14 14/23 15/1 15/14 17/16 17/17 18/4 18/9 19/2 19/5 19/16 19/23 21/3 21/6 21/8 21/9 21/10 22/3 23/12 24/14 25/2 25/16 40/11 41/16 41/17 41/23 42/7 46/12 46/13 47/16 47/21 49/15 49/18 50/2 50/10 50/20 51/12 51/14 53/18 64/13 64/15 65/8 65/18 65/20 66/17 66/19 69/4 69/11 69/13 70/16 70/18 70/19 70/20 70/22 70/25 71/21 72/1 72/23 73/25 74/7 75/2 75/24 76/9 77/14 77/19 77/20 77/23 80/4 82/19 84/4 87/3 87/25 90/3 90/15 90/18 90/19 91/23 97/17 99/18 103/10 103/18 105/12 105/22 106/14 106/17 106/20 107/15 107/19 108/2 108/6 108/16 108/18 109/10 109/17 110/4 111/11 114/20 115/23 116/19 117/17 118/4 docket [1] 10/17 dockets [1] 56/4 document [5] 1/5 1/10 14/1 15/2 58/9 documents [8] 11/15 17/22 18/14 18/16 20/18 38/1 58/4 58/13 Dodd [5] 73/8 73/11 76/14 76/17 77/7 does [16] 4/20 7/21 8/15 25/23 36/10 41/4 46/16 47/10 52/15 54/2 54/2 74/15 81/10 85/2 91/16 94/12 doesn't [4] 81/17 87/12 107/21 111/10 doing [11] 87/24 88/4 93/10 94/16 98/21 109/22 111/14 111/17 111/18 112/23 116/3 don't [51] 6/17 8/3 17/15 18/24 18/25 19/4 20/12 21/7 21/19 21/25 23/14 24/7 25/14 27/1 30/8 34/3 46/23 48/3 53/23 54/5 54/6 54/7 54/15 62/3 68/18 69/7 71/4 74/19 77/11 77/22 83/5 85/9 85/16 85/20 86/20 87/18 87/23 88/4 89/22 90/1 91/17 103/8 106/16 107/7 108/2 108/13 108/23 109/23 111/1 111/8 117/9 done [7] 75/8 93/4 93/5 93/7 93/8 98/18 107/10 down [10] 29/12 34/16 55/11 79/7 86/4 86/11 86/24 87/7 106/3 117/13 Dr [10] 18/5 18/11 18/20 18/25 19/6 25/21 36/4 60/1 60/10 61/6 dramatically [2] 82/11 107/18 drawings [1] 116/15
	D data [4] 20/7 20/9 27/24 28/17 date [3] 8/24 71/6 71/8 DAY [3] 57/25 95/25 118/25 days [4] 25/21 79/23 79/24 80/6 deal [3] 97/21 97/23 97/23 dealing [1] 50/21 deals [1] 53/1 death [1] 79/15 debt [3] 55/1 55/2 55/10 decays [1] 81/18 decided [1] 27/18 decision [2] 20/25 85/19 decisions [2] 11/1 117/24 decline [1] 83/6 defer [2] 24/1 24/6 deferred [1] 29/6 defining [1] 94/19 definitely [3] 71/2 84/18 99/9 delayed [1] 46/14 delete [1] 40/21 Dell [1] 117/17 demonstrated [2] 70/7 70/13 demonstration [4] 37/4 37/8 111/15 112/12 Dennis [1] 28/18 depends [6] 31/15 85/13 90/15 100/23 103/20 104/25 depreciation [1] 48/7 depth [4] 18/5 18/10 19/6 19/17 deregulated [3] 73/4 75/19 76/2 describe [2] 23/6 92/14 described [1] 89/24 design [9] 18/18 19/12 25/10 29/13 36/16 88/17 88/22 89/18 89/21 designated [1] 62/11 designed [2] 69/23 89/19 despite [1] 109/7 detailed [4] 18/5 18/10 19/5 19/16 determination [2] 32/10 75/4 determine [2] 25/2 33/5 developing [2] 74/23 83/18 development [1] 116/13 did [42] 10/3 10/5 10/7 10/9 11/1 11/4 11/14 11/18 20/7 20/9 21/18 22/9 22/12 22/13 22/15 22/16 22/18 22/22 23/5 25/1 25/4 25/6 26/13 26/18 26/21 28/1 29/1 29/2 29/4 35/22 39/14 47/11 49/22 51/19 56/11 66/25 67/3 67/7 68/20 82/5 86/13 87/3	

<b>D</b>		
drilling [1] 92/22 drop [2] 107/17 107/25 DSM [4] 10/11 10/13 10/17 10/21 Duke [39] 2/14 2/21 3/5 3/9 3/20 4/19 7/8 7/20 17/24 20/9 20/19 20/20 23/17 29/24 35/12 35/21 35/25 36/10 45/15 48/22 49/12 49/12 68/21 70/20 74/9 76/8 76/9 87/21 87/22 87/25 101/24 102/3 102/10 102/11 113/6 114/24 115/3 115/7 115/18 Duke's [13] 7/17 8/18 9/6 10/3 10/7 10/10 19/10 19/13 28/23 28/25 74/7 74/12 75/7 duly [6] 2/3 14/18 38/14 39/3 63/8 63/13 DuMOND [8] 35/13 35/17 36/18 102/21 113/7 113/11 116/24 117/1 duration [1] 97/8 during [2] 7/14 55/3	enhancement [2] 54/3 54/21 enhancing [1] 57/1 enough [3] 86/23 111/11 117/14 enthused [2] 68/14 68/18 envelope [1] 41/18 environment [10] 75/16 80/3 80/5 81/8 81/14 96/20 97/8 97/11 101/18 106/18 environmental [11] 31/3 31/6 31/12 52/3 80/9 82/12 83/23 84/4 84/9 104/24 116/22 envisioned [1] 102/13 EOR [3] 94/17 98/18 111/12 EPA [1] 26/1 EPRI [2] 103/22 103/23 equally [1] 68/18 equipment [7] 24/13 28/6 36/14 36/16 87/9 91/15 92/10 equity [9] 40/6 48/9 48/17 51/23 53/2 53/20 54/7 54/12 54/16 equivalent [2] 88/11 88/16 erect [2] 89/12 90/20 erecting [1] 90/3 especially [2] 21/20 79/16 essentially [3] 6/1 66/3 88/21 EST [1] 1/2 established [1] 33/18 estimate [5] 28/23 28/24 28/25 29/1 29/2 estimated [1] 28/15 estimates [2] 19/18 29/12 et [3] 47/19 52/9 117/24 even [9] 5/24 35/6 85/23 86/18 87/5 87/11 94/13 95/5 101/15 eventually [1] 108/20 ever [2] 7/10 56/15 every [3] 89/18 90/15 107/13 everybody [1] 95/3 everybody's [1] 70/21 everyone [1] 74/16 everything [1] 29/10 everywhere [1] 107/25 evidence [8] 12/6 16/9 42/13 43/6 44/6 61/14 62/22 67/24 exact [2] 18/18 48/4 exactly [4] 25/8 86/12 88/22 104/3 examination [26] 2/7 6/14 6/20 8/1 8/18 8/22 10/1 14/21 17/10 26/11 34/11 35/16 37/1 39/5 42/9 45/2 45/18 56/1 63/17 68/8 72/13 73/10 77/1 96/10 113/10 117/7 examined [2] 53/21 103/25 example [12] 2/23 3/20 4/19 5/4 5/10 6/4 74/11 80/20 86/16 86/17 87/16 107/24 examples [3] 3/4 6/9 105/25 exceeding [1] 105/13 excellent [1] 74/13 excused [8] 13/6 13/14 37/17 37/21 57/7 57/13 118/19 118/20 exhibit [40] 1/6 1/12 11/8 11/22 11/24 12/1 12/4 14/2 14/24 15/10 15/24 16/1 16/5 38/2 39/18 40/3 41/4 41/15 42/9 43/1 44/1 58/6 58/11 58/15 60/4 60/14 60/23 61/5 61/9 62/11 62/14 62/19 64/7 65/9 65/12 66/14 66/17 66/22 67/15 67/20 exhibits [6] 42/13 42/18 60/21 61/1 65/1 67/11 existed [1] 47/1 existing [7] 6/19 21/13 33/16 99/6 112/25 113/24 114/6 existing -- there [1] 33/16 exists [1] 24/5 expand [3] 82/16 90/4 94/17 expanded [2] 99/13 105/21 expanding [1] 99/14 expect [2] 72/1 88/24 expectancy [1] 79/18	expected [2] 9/7 103/18 expense [1] 48/7 expensive [1] 86/20 expensively [1] 118/14 experience [6] 25/17 68/24 70/11 74/10 86/5 98/17 experiment [4] 69/6 69/7 77/12 99/21 experiments [1] 77/11 expert [3] 17/18 17/21 105/7 expertise [2] 105/8 109/8 experts [1] 17/23 explain [3] 86/13 99/23 104/22 explanation [1] 28/1 exploration [2] 92/24 92/25 explore [1] 99/2 expressed [3] 25/20 56/16 69/9 extent [7] 33/10 46/20 47/5 80/12 83/7 86/2 89/11 extra [1] 51/13 extremely [1] 97/3 eve [2] 59/3 89/8
<b>E</b>		<b>F</b>
each [2] 88/21 88/25 earlier [2] 15/11 96/16 early [2] 86/2 86/3 earth [1] 93/23 economic [3] 32/14 83/17 117/24 economically [1] 9/14 EDT [2] 58/2 96/2 education [1] 25/16 Edwardspport [19] 6/17 9/7 9/11 19/19 24/5 29/17 73/16 76/7 81/11 85/5 90/25 98/15 101/18 101/21 106/8 112/5 113/17 115/5 116/20 effect [4] 4/6 18/19 71/1 102/16 effective [1] 99/19 effectively [1] 94/8 effects [1] 81/1 efficiency [1] 85/3 efficient [2] 74/25 116/21 efficiently [1] 34/19 egg [1] 93/17 either [8] 4/20 6/24 27/14 54/2 59/1 79/10 93/12 98/17 electric [7] 30/1 30/5 30/23 30/25 75/6 77/15 103/24 electricity [4] 69/17 73/23 75/11 108/19 else [1] 74/16 elsewhere [1] 90/22 emission [4] 71/17 72/2 79/12 114/17 emissions [37] 2/11 2/15 22/6 71/12 75/15 77/24 78/1 79/2 79/5 80/7 80/12 80/16 81/3 81/11 81/13 82/13 82/23 92/2 96/22 99/8 99/11 99/11 99/13 101/13 101/17 107/3 108/1 109/20 112/20 112/24 113/22 113/22 113/23 113/23 114/1 114/5 114/9 emit [2] 93/19 101/20 emits [1] 35/2 emitted [9] 29/17 78/5 78/11 78/15 79/11 80/19 80/25 81/22 97/7 emitting [1] 84/14 employed [6] 15/6 15/7 39/10 39/12 63/21 63/22 enacted [2] 102/14 104/16 encourage [1] 47/10 encourages [1] 46/18 end [1] 66/1 energy [11] 35/21 35/25 36/10 48/22 84/1 85/2 101/12 114/24 115/3 115/7 115/19 engineer [2] 18/2 18/3 engineering [2] 36/1 88/17 Engrossed [1] 22/8 enhanced [11] 40/5 56/10 56/12 56/17 93/13 94/17 105/1 105/12 105/19 105/23 107/11	erect [2] 89/12 90/20 erecting [1] 90/3 especially [2] 21/20 79/16 essentially [3] 6/1 66/3 88/21 EST [1] 1/2 established [1] 33/18 estimate [5] 28/23 28/24 28/25 29/1 29/2 estimated [1] 28/15 estimates [2] 19/18 29/12 et [3] 47/19 52/9 117/24 even [9] 5/24 35/6 85/23 86/18 87/5 87/11 94/13 95/5 101/15 eventually [1] 108/20 ever [2] 7/10 56/15 every [3] 89/18 90/15 107/13 everybody [1] 95/3 everybody's [1] 70/21 everyone [1] 74/16 everything [1] 29/10 everywhere [1] 107/25 evidence [8] 12/6 16/9 42/13 43/6 44/6 61/14 62/22 67/24 exact [2] 18/18 48/4 exactly [4] 25/8 86/12 88/22 104/3 examination [26] 2/7 6/14 6/20 8/1 8/18 8/22 10/1 14/21 17/10 26/11 34/11 35/16 37/1 39/5 42/9 45/2 45/18 56/1 63/17 68/8 72/13 73/10 77/1 96/10 113/10 117/7 examined [2] 53/21 103/25 example [12] 2/23 3/20 4/19 5/4 5/10 6/4 74/11 80/20 86/16 86/17 87/16 107/24 examples [3] 3/4 6/9 105/25 exceeding [1] 105/13 excellent [1] 74/13 excused [8] 13/6 13/14 37/17 37/21 57/7 57/13 118/19 118/20 exhibit [40] 1/6 1/12 11/8 11/22 11/24 12/1 12/4 14/2 14/24 15/10 15/24 16/1 16/5 38/2 39/18 40/3 41/4 41/15 42/9 43/1 44/1 58/6 58/11 58/15 60/4 60/14 60/23 61/5 61/9 62/11 62/14 62/19 64/7 65/9 65/12 66/14 66/17 66/22 67/15 67/20 exhibits [6] 42/13 42/18 60/21 61/1 65/1 67/11 existed [1] 47/1 existing [7] 6/19 21/13 33/16 99/6 112/25 113/24 114/6 existing -- there [1] 33/16 exists [1] 24/5 expand [3] 82/16 90/4 94/17 expanded [2] 99/13 105/21 expanding [1] 99/14 expect [2] 72/1 88/24 expectancy [1] 79/18	fabricate [1] 89/10 fabrication [1] 89/25 face [1] 32/4 facilities [3] 30/16 87/21 89/5 facility [9] 90/25 101/10 101/19 101/21 110/5 110/6 110/11 110/16 110/20 fact [14] 7/21 35/2 46/8 46/9 47/1 83/8 91/15 97/2 103/10 113/21 114/9 114/25 115/7 115/21 factor [1] 85/18 factors [1] 27/22 fair [7] 8/21 56/24 68/16 68/17 69/4 74/7 76/9 fairly [2] 98/25 111/17 fall [1] 104/9 familiar [9] 7/17 9/5 21/16 47/2 49/3 50/17 75/20 98/12 102/3 far [2] 6/19 103/16 farm [1] 101/12 feasibility [1] 29/16 feasible [1] 29/20 federal [1] 115/8 Federation [8] 59/16 60/3 60/25 63/13 64/7 66/22 67/11 75/3 FEED [2] 35/23 116/6 feel [2] 26/3 97/15 few [5] 17/14 20/15 25/21 35/20 39/25 field [3] 89/12 90/4 90/20 figure [2] 25/5 56/25 figures [2] 24/25 25/7 file [3] 10/8 10/9 11/23 filed [5] 17/24 20/4 20/6 20/19 50/18 filing [2] 10/23 25/18 Finally [1] 11/6 fine [2] 3/2 5/7 fired [7] 46/3 46/6 47/8 77/16 100/14 100/16 100/18 firm [6] 21/3 21/6 21/7 21/16 21/25 22/2 first [19] 3/9 14/18 17/14 26/16 34/16 39/2 63/13 66/6 78/4 79/14 85/22 86/19 86/21 87/19 92/5 92/13 93/2 117/11 117/15 fits [1] 109/10 five [3] 48/16 56/9 95/9 fixed [9] 49/23 50/2 50/8 50/10 50/22 52/16 53/15 53/25 56/14 flat [1] 5/12 floating [1] 80/22 flow [1] 55/11 fluid [1] 93/23 focus [4] 10/21 18/13 19/25 82/18

<b>F</b>		
<p>focused [3] 84/21 84/25 109/9  folks [4] 58/23 75/25 109/1 109/2  follow [1] 73/14  follows [4] 2/5 14/19 39/3 63/15  footprint [1] 83/23  Force [16] 59/16 60/3 60/25 63/12 63/22 63/24 64/6 66/21 67/10 75/4 78/24 82/4 82/6 84/22 85/1 90/8  foresee [1] 111/2  forget [1] 62/3  forgot [2] 81/24 82/1  formalized [1] 116/15  formed [1] 79/11  forth [1] 59/8  forums [1] 33/17  forward [5] 6/16 8/17 10/12 83/5 96/21  found [3] 18/14 25/1 53/21  four [1] 69/23  foward [1] 77/12  Friedmann [3] 60/1 60/10 61/7  fuel [5] 7/17 9/8 69/22 78/8 101/10  fueled [1] 100/24  full [5] 36/13 39/7 74/8 87/19 111/7  function [3] 105/14 105/14 105/15  fundamental [2] 87/13 107/16  fundamentally [1] 94/24  further [13] 2/4 34/3 35/9 36/11 36/12 36/18 37/14 59/9 72/4 73/6 76/14 113/1 116/24  future [8] 52/6 75/12 77/17 87/7 87/8 87/9 100/11 108/21  FutureGen [2] 98/22 111/16</p>	<p>give [7] 28/17 71/6 81/16 95/2 103/22 111/11 111/18  given [2] 29/20 60/4  gives [4] 27/25 48/4 48/6 48/8  giving [4] 6/1 6/4 6/8 106/16  glad [1] 77/6  global [6] 79/8 81/2 84/15 85/25 96/24 97/11  globe [1] 92/15  go [22] 1/15 1/16 2/20 3/3 11/14 33/20 33/25 34/1 49/6 49/6 55/10 58/18 58/19 59/22 85/20 96/4 96/5 96/15 97/20 109/19 117/17 118/23  goal [3] 82/8 82/10 112/17  goals [1] 112/21  goes [4] 52/11 55/9 97/7 117/13  going [26] 6/16 7/25 8/17 10/6 10/12 28/11 52/20 56/3 71/1 71/2 71/5 78/19 78/20 79/7 83/11 84/12 85/6 87/21 93/3 96/20 102/9 102/18 105/5 106/18 112/1 116/16  gone [1] 66/4  good [28] 10/19 14/23 17/12 17/13 35/18 35/19 45/20 68/10 68/11 72/15 72/16 73/12 73/13 77/3 77/4 77/5 108/5 108/7 108/7 108/8 108/9 109/15 110/1 111/19 112/4 113/12 113/13  got [3] 46/9 46/9 110/19  gotten [2] 7/11 103/9  granted [1] 40/15  grants [1] 116/5  graphs [1] 104/10  great [1] 74/18  greater [4] 18/4 18/9 19/5 19/16  greatest [1] 105/6  greenhouse [1] 78/1  grounds [1] 33/2  Group [2] 20/11 58/15  growth [1] 83/17  guess [4] 19/23 21/15 31/10 74/12  guests [1] 59/7</p>	<p>heat [7] 85/3 100/21 101/2 101/3 101/6 101/8 111/24  HELMEN [18] 10/2 11/20 14/5 38/5 38/17 38/18 39/6 42/4 42/12 45/24 51/16 53/6 56/2 57/3 68/4 68/9 72/4 72/6  Helmen's [1] 73/14  help [2] 11/18 77/10  helping [1] 82/19  helps [1] 92/5  her [5] 8/15 24/18 27/12 33/5 33/7  here [26] 6/5 10/4 17/18 18/21 20/13 22/20 24/22 24/24 36/4 41/9 42/3 53/1 55/7 58/25 59/7 59/8 59/17 74/3 77/6 77/9 80/9 80/13 96/17 101/22 101/23 118/24  Hi [1] 45/21  high [5] 72/3 80/22 107/14 109/18 111/17  higher [2] 79/23 99/7  highly [1] 116/21  him [4] 19/23 46/25 51/19 59/3  his [2] 10/12 27/24  historic [1] 107/18  hold [1] 17/15  home [1] 109/2  Honor [51] 1/19 6/13 7/24 9/19 9/22 11/20 14/8 14/9 14/14 15/23 16/3 17/6 26/9 27/6 31/19 32/6 33/1 34/4 34/9 35/10 35/14 36/20 37/13 38/8 38/19 42/5 42/12 45/5 45/8 45/11 45/14 45/16 46/21 50/25 51/7 52/20 55/15 55/19 57/4 59/11 60/1 62/8 63/4 68/6 72/10 76/15 76/19 96/8 113/2 113/8 117/5  Hoosier [1] 109/7  hotel [1] 59/7  hour [1] 9/10  how [25] 6/14 6/18 6/21 8/22 24/21 27/1 27/18 36/6 36/14 53/24 55/6 75/24 79/4 84/4 85/12 86/12 86/13 91/23 92/4 92/14 92/14 93/15 103/3 108/2 109/14  however [4] 25/4 29/19 30/9 51/25  huge [1] 77/20  hydrogen [1] 87/9  hypothetical [6] 6/4 6/9 85/8 103/3 103/11 103/13</p>
<b>G</b>		
<p>gain [1] 74/9  gained [1] 68/24  gas [13] 75/12 92/21 92/24 92/25 94/6 94/9 98/12 100/14 100/16 100/18 100/24 101/6 101/9  gas-fired [3] 100/14 100/16 100/18  gases [1] 78/2  gasification [13] 46/18 47/10 69/15 70/3 74/4 89/5 90/13 90/17 91/1 94/5 94/6 105/20 110/5  gasifiers [2] 87/8 89/10  gather [1] 20/22  gathered [1] 17/22  gathering [1] 21/12  gave [3] 49/13 71/8 87/16  GE [2] 36/6 36/12  general [9] 17/14 22/5 22/24 75/23 86/10 102/6 107/12 114/16 116/9  generally [12] 7/18 9/13 47/17 47/21 49/3 49/19 54/23 68/13 84/4 84/8 84/12 85/22  generate [3] 99/15 101/5 105/3  generated [1] 101/12  generating [5] 30/1 30/5 30/14 30/23 30/25  generation [6] 7/22 46/3 46/7 47/8 77/16 82/24  generator [1] 111/25  generic [3] 10/16 10/18 104/13  geologic [2] 92/22 93/5  geological [1] 24/3  geologist [1] 17/16  geology [1] 29/21  get [25] 3/6 3/8 3/16 4/4 4/9 5/22 7/4 9/2 23/9 23/13 46/13 59/5 68/12 84/14 93/9 93/16 98/16 103/2 106/7 106/20 112/9 114/14 117/19 118/5 118/13  gets [1] 50/22  getting [3] 4/15 74/13 74/14</p>	<p><b>H</b></p> <p>had [12] 7/8 11/15 20/3 20/4 20/5 27/3 27/11 27/13 59/16 60/16 77/9 118/1  hand [6] 38/11 63/6 83/13 83/15 92/19 111/13  handed [1] 51/2  happen [1] 31/7  happening [1] 80/15  happens [1] 109/11  hard [1] 85/8  harming [1] 83/14  Hartley [12] 34/7 34/12 35/9 45/12 45/13 59/20 63/1 63/18 66/20 117/2 117/8 118/16  has [37] 2/21 7/8 14/24 17/24 19/1 24/13 29/14 33/4 33/17 35/25 38/9 46/17 47/9 53/4 60/2 60/16 60/18 63/4 64/5 74/21 75/2 75/14 80/2 87/6 89/25 96/24 97/2 97/8 99/24 100/9 100/10 105/20 112/5 112/6 115/3 115/8 116/14  hasn't [1] 93/7  have [125]  have -- that [1] 85/17  have -- we [1] 109/23  haven't [4] 53/13 93/3 103/9 107/8  having [11] 2/2 14/17 23/10 27/15 27/15 39/2 63/13 80/17 85/8 104/17 109/6  he [7] 19/1 19/2 27/25 28/3 32/8 46/25 47/5  he'll [1] 59/2  he's [1] 47/2  heard [1] 115/12  hearing [4] 7/5 57/25 95/25 118/25  hearings [1] 22/18</p>	<p><b>I</b></p> <p>I'd [8] 6/12 9/2 11/8 31/1 32/6 71/22 96/13 112/21  I'll [22] 6/25 7/1 8/3 8/25 9/1 27/16 31/25 32/17 33/2 33/8 40/11 46/19 47/3 51/24 53/8 58/22 62/2 66/20 93/11 93/25 102/24 103/6  I'm [53] 4/16 6/8 7/24 8/9 8/10 9/11 15/7 18/3 19/23 24/21 24/23 24/24 26/3 26/25 31/10 34/15 39/12 45/24 50/15 50/15 50/23 51/18 51/20 52/20 63/22 63/25 64/22 69/1 70/5 70/10 71/5 75/24 76/4 77/6 79/9 79/22 81/19 82/1 82/5 82/16 85/8 86/11 88/20 89/15 94/18 95/2 95/5 98/11 102/8 102/10 103/16 105/5 106/16  I've [15] 5/4 9/10 17/22 23/12 29/11 29/19 39/17 41/13 51/2 60/4 60/10 89/24 94/18 102/6 105/8  IAC [1] 48/3  IBM [1] 117/15  ideally [1] 70/22  identification [10] 1/6 1/11 11/7 14/2 38/2 39/18 41/14 58/5 58/10 58/14  identified [2] 88/5 94/15  identify [9] 11/9 15/2 30/1 30/12 30/16 31/12 92/3 92/16 93/4  IGCC [48] 2/11 9/7 11/12 19/20 24/12 34/25 35/2 40/20 40/23 68/15 69/1 69/9 69/20 70/1 70/5 73/15 74/2 74/9 75/5 76/11</p>

I	insurance [1] 32/13 intent [1] 34/21 interchangeable [1] 70/4 interest [1] 70/21 interested [1] 90/9 interesting [1] 108/12 interests [1] 8/21 interject [1] 6/13 intermediate [1] 111/8 international [1] 81/5 Intervenor's [3] 1/11 58/14 62/19 Intervenors [1] 63/11 Intervenors' [9] 58/5 60/2 61/1 61/4 61/8 64/6 66/21 67/14 67/19 introduced [1] 117/15 investment [2] 48/5 115/8 investments [1] 85/2 involvement [2] 10/11 10/12 IP [5] 53/14 53/18 53/19 53/21 53/24 IPL [2] 49/1 56/19 IRP [1] 10/7 is [338] isn't [2] 52/23 58/20 issue [6] 21/23 22/14 51/6 52/12 107/17 111/4 issues [2] 111/21 112/3 it [197] it's [9] 23/11 33/18 46/13 74/18 77/5 80/18 99/9 107/10 113/14 Italy [2] 73/20 73/22 items [2] 20/15 48/7 its [13] 7/21 17/25 20/19 22/1 29/1 36/7 52/2 52/7 76/8 81/1 83/16 107/22 115/20 itself [2] 92/6 112/4 IURC [2] 40/3 70/16 IWF [5] 58/6 61/4 61/9 67/14 67/20	know [75] 6/18 7/7 8/5 18/24 18/25 19/1 19/2 19/21 21/6 21/7 21/8 21/10 21/19 21/25 24/7 25/14 25/14 25/15 26/2 27/1 27/25 28/8 30/8 32/13 47/13 48/4 50/20 50/23 54/15 70/8 71/21 74/16 75/2 76/12 77/11 78/24 79/23 80/4 80/21 81/19 83/3 84/8 84/9 85/10 85/11 86/22 86/23 87/19 87/22 87/23 87/25 88/14 88/18 89/11 89/11 90/3 90/16 90/20 93/2 93/18 93/19 97/4 98/10 101/11 101/22 102/19 105/25 107/7 107/22 108/1 108/13 109/17 111/1 112/22 117/11 knowing [2] 18/18 46/25 knowledge [10] 18/22 19/22 27/15 27/15 30/22 31/1 68/24 72/25 74/9 86/11 knowledgeable [1] 20/25 known [2] 70/8 92/19 knows [2] 33/10 47/5 Korea [1] 80/20
	L	
IGCC... [28] 77/12 85/16 85/23 87/4 87/21 88/16 89/9 90/25 91/5 92/7 97/15 100/9 101/2 101/11 101/13 101/19 104/1 104/12 108/3 109/25 110/8 113/17 114/6 114/24 115/25 116/10 116/20 118/13 II [2] 48/25 49/18 Illinois [15] 64/4 68/22 72/19 72/20 72/24 72/25 74/19 75/18 108/9 108/10 108/14 108/24 109/1 115/24 116/3 imagine [1] 109/4 impact [1] 80/17 impacted [1] 36/15 impacting [1] 97/11 impacts [9] 18/6 18/11 31/3 31/6 31/12 79/14 82/11 82/12 82/21 implement [1] 36/7 implemented [2] 104/20 115/22 implications [2] 96/25 97/3 importance [1] 110/3 important [10] 77/25 78/2 78/3 78/9 78/21 85/21 85/25 94/24 98/2 107/23 in-depth [4] 18/5 18/10 19/6 19/17 incentive [3] 5/21 48/9 49/9 incentives [2] 53/11 116/11 include [5] 41/5 56/11 56/16 82/24 83/25 included [2] 3/18 88/8 includes [1] 84/16 including [5] 22/5 22/24 74/17 84/1 84/23 inclusive [4] 16/8 58/7 61/12 67/18 inconsistent [1] 108/23 incorporate [1] 41/6 incorporation [1] 36/15 incorrect [1] 71/23 increase [2] 101/17 107/21 increased [1] 107/2 increases [1] 55/3 increasing [1] 106/17 incremental [1] 48/17 Indeed [1] 80/11 independent [4] 25/2 25/4 29/15 29/18 Indiana [43] 1/1 10/4 11/16 15/8 35/22 36/11 47/25 48/22 52/9 58/1 59/16 60/3 60/25 63/12 64/7 66/22 67/10 75/3 75/21 76/1 77/5 81/1 93/20 94/20 96/1 98/13 106/2 106/4 106/11 106/14 106/15 108/8 108/16 108/21 108/24 109/6 109/12 109/13 110/9 114/25 115/3 115/8 115/19 Indianapolis [3] 1/1 58/1 96/1 indicate [1] 50/5 indicated [2] 24/17 91/21 individuals' [1] 59/23 indoors [1] 89/11 industrial [5] 20/10 58/15 78/6 93/20 98/14 industry [2] 92/22 105/4 inextricably [1] 83/17 information [9] 20/1 20/20 20/23 27/11 36/12 37/6 37/10 81/16 93/17 informing [1] 10/24 inherent [1] 94/5 initial [2] 40/12 67/1 initiatives [1] 10/11 inject [1] 23/18 injected [2] 24/4 93/23 injection [1] 93/16 input [1] 10/15 inserted [1] 60/17 inside [3] 30/13 30/19 30/21 instance [1] 3/9 instead [1] 5/23 Institute [1] 103/24	L's [1] 53/19 labor [1] 89/2 language [1] 71/22 large [8] 28/13 70/7 82/18 85/22 89/11 89/24 93/10 93/11 larger [1] 109/10 last [14] 6/18 10/3 10/7 10/8 25/21 39/8 41/1 50/7 53/19 53/24 54/8 54/12 86/15 105/8 later [1] 97/9 law [7] 21/3 21/6 21/7 21/25 22/2 33/6 104/23 laws [3] 32/22 33/4 33/12 lawyer [1] 21/23 lay [1] 102/8 lead [2] 84/24 114/10 learn [1] 10/19 learning [1] 86/4 least [9] 24/18 46/5 75/6 75/8 83/1 89/9 89/13 107/12 116/15 least-cost [1] 75/6 leave [2] 11/1 11/23 leaves [1] 94/9 leaving [1] 27/13 left [2] 59/14 77/7 legal [12] 11/3 11/18 31/16 31/20 32/10 32/23 33/3 33/7 33/13 46/20 46/24 75/24 legally [1] 27/1 legislation [5] 102/1 102/13 102/15 103/12 104/15 Legislature [5] 22/10 22/13 22/21 46/16 47/9 lend [1] 112/4 less [8] 3/21 3/21 7/14 24/12 35/2 114/2 114/11 118/13 let [13] 2/9 7/5 31/23 71/13 84/7 86/13 90/4 92/3 92/13 95/7 99/23 102/8 105/7 let's [24] 1/15 2/18 3/20 3/22 4/18 4/19 5/11 19/13 19/14 20/15 20/16 33/20 33/25 49/17 58/18 80/18 91/8 94/14 95/9 99/2 103/17 103/21 106/20 118/23 letters [1] 11/10 level [10] 27/19 52/1 88/1 88/2 88/10 93/22 94/13 103/20 109/21 112/25 levels [4] 103/25 104/2 107/18 109/17 liabilities [6] 31/16 32/3 32/14 32/15 32/16 32/24 liability [5] 32/9 32/10 32/12 33/6 33/14 licensed [1] 18/3 life [1] 79/17 lifetime [1] 71/3 like [20] 5/5 6/12 9/2 10/20 23/13 28/12	

<b>L</b>		
like... [14] 39/24 59/22 62/9 74/19 79/16 79/18 84/16 91/2 91/18 91/20 92/23 94/1 96/13 104/5	market [5] 32/15 105/2 106/12 106/13 106/14	81/5 81/16 84/21 84/22 84/25 85/11 86/13 87/4 88/11 89/7 90/17 90/21 91/1 92/7 94/7 94/8 98/10 101/20 110/7 110/9 117/12 118/6
likely [3] 83/6 104/19 107/14	marks [1] 94/1	Moreland [5] 19/14 19/17 19/22 20/13 25/22
likes [1] 97/14	material [3] 25/24 29/19 29/23	morning [17] 14/23 17/12 17/13 35/18 35/19 45/20 68/10 68/11 72/15 72/16 73/12 73/13 77/3 77/4 113/12 113/13 113/14
line [25] 22/22 40/2 40/13 40/20 45/23 45/25 54/24 64/16 64/18 64/23 65/21 66/1 86/15 88/19 88/23 89/1 90/1 91/2 91/11 91/16 91/23 101/25 102/9 102/13 117/12	materials [2] 25/25 92/21	mortality [1] 79/15
liner [3] 86/17 86/19 86/21	matter [4] 62/2 64/9 80/6 81/3	most [6] 69/16 69/21 78/3 92/16 93/24 111/13
liners [2] 86/24 91/18	may [22] 1/17 8/13 14/5 27/10 31/2 32/2 32/21 33/3 38/5 50/24 51/1 63/2 71/23 76/5 78/14 82/16 83/3 87/2 96/6 98/21 104/3 107/20	mostly [1] 72/23
Lines [7] 22/4 23/16 24/14 34/16 54/23 66/2 71/14	maybe [8] 49/17 62/2 78/13 79/25 81/21 104/8 104/14 116/8	move [7] 2/18 7/5 9/4 11/23 91/8 95/6 96/14
lingers [1] 78/12	me [44] 2/9 3/11 6/10 6/14 10/14 11/1 15/11 27/18 28/18 31/16 31/23 32/3 46/4 46/15 47/20 47/20 48/14 50/2 50/10 51/9 53/19 55/9 58/24 67/4 69/3 71/7 71/13 74/19 75/23 76/12 82/2 84/7 86/13 87/4 87/22 90/4 92/3 92/13 95/7 99/23 102/8 102/11 103/13 105/7	moving [2] 77/12 85/22
list [3] 22/6 40/3 48/15	mean [4] 5/11 25/23 81/10 95/2	MR [97] 6/12 6/25 7/24 8/8 10/2 10/10 11/13 11/20 14/7 14/10 14/22 15/23 17/1 17/7 17/11 19/14 19/17 19/22 20/13 25/22 26/6 26/7 26/12 31/21 32/21 34/5 34/7 34/12 35/9 35/13 35/17 36/18 37/2 37/13 38/8 38/18 39/6 39/10 42/4 42/12 43/3 44/3 45/1 45/6 45/7 45/9 45/12 45/13 45/18 45/24 53/6 56/1 56/2 57/3 59/20 60/14 61/10 62/4 62/16 62/21 63/18 66/20 67/16 67/21 68/8 68/9 68/10 69/2 72/4 72/13 73/10 73/12 76/18 77/1 77/2 77/3 95/7 96/6 96/10 96/12 102/21 113/1 113/3 113/4 113/7 113/10 113/11 113/12 114/19 116/24 116/25 117/2 117/7 117/8 117/9 118/16 118/17
listed [2] 40/1 48/13	means [1] 75/6	Mr. [20] 14/5 29/6 38/5 38/10 38/17 42/7 51/16 56/3 57/5 59/15 59/17 59/24 60/17 63/1 63/4 66/24 68/1 68/4 72/6 73/14
lists [1] 30/10	measured [1] 114/16	Mr. Blakley [4] 38/10 42/7 56/3 57/5
little [4] 46/11 64/21 81/16 109/19	meat [1] 102/15	Mr. Hartley [1] 63/1
live [2] 68/22 74/19	mechanism [10] 2/19 4/23 5/9 7/9 8/16 8/19 8/22 8/24 111/1 111/2	Mr. Helmen [6] 14/5 38/5 38/17 51/16 68/4 72/6
lived [1] 72/20	meet [3] 2/14 89/8 108/22	Mr. Helmen's [1] 73/14
load [3] 7/23 7/23 9/13	meeting [2] 75/14 90/9	Mr. Melzer's [1] 60/17
local [1] 81/4	megawatt [5] 9/10 24/11 24/17 110/24 110/25	Mr. Stewart [1] 29/6
located [1] 86/9	Melzer [2] 60/14 61/11	Mr. Thompson [6] 59/15 59/17 59/24 63/4 66/24 68/1
location [2] 23/19 93/7	Melzer's [1] 60/17	Mrs. [1] 6/15
long [4] 55/2 95/3 97/8 112/17	mentioned [6] 47/1 58/23 59/20 80/2 81/7 87/17	Mrs. Soller's [1] 6/15
long-term [1] 55/2	mercury [4] 2/12 35/3 100/4 113/22	Ms [63] 1/17 2/8 6/9 6/15 6/20 7/3 7/7 8/1 8/14 8/14 8/23 9/5 9/18 10/1 10/3 13/3 14/11 14/23 15/5 15/10 16/6 17/1 17/4 17/5 17/10 26/11 26/13 27/7 29/6 29/7 32/22 33/3 33/9 34/2 34/11 34/13 35/16 35/18 37/1 37/3 37/15 45/3 45/4 45/15 45/19 45/25 50/24 51/13 51/14 51/17 51/20 52/14 55/14 56/9 72/9 72/14 73/5 73/8 73/11 75/17 76/14 76/16 77/7
longer [1] 78/13	metals [1] 114/14	Ms. [2] 24/2 24/6
longevity [3] 80/2 80/4 81/7	microphone [1] 8/11	Ms. Radcliffe [2] 24/2 24/6
look [18] 19/23 20/15 23/8 23/11 29/15 41/18 51/10 69/25 71/22 74/12 75/9 75/10 75/11 83/5 92/15 100/11 100/12 104/4	mid [5] 87/18 88/1 88/2 88/10 116/16	much [16] 13/4 20/23 28/8 37/16 57/6 81/5 83/1 84/25 90/17 92/7 94/7 97/9 104/23 110/25 117/17 118/18
looked [4] 18/15 20/19 23/12 25/24	mid-level [3] 88/1 88/2 88/10	Multi [1] 52/3
looking [1] 98/8	mid-price [1] 87/18	Multi-Pollutant [1] 52/3
looks [1] 104/4	mid-section [1] 116/16	multiple [1] 87/21
loss [4] 4/20 4/21 4/24 5/10	middle [1] 59/1	must [1] 79/22
losses [1] 4/24	midpoint [1] 86/22	my [36] 2/17 4/8 5/18 7/12 8/6 15/3 18/13 19/9 19/25 20/16 23/20 24/18 26/16 30/9 30/22 31/1 33/15 33/18 40/13 40/25 51/8 52/14 53/3 54/5 63/20 71/22 76/6 78/16 87/2 88/7 92/9 97/20 105/7 109/8 109/8 112/13
lost [1] 89/16	Midwest [3] 26/1 29/20 114/7	myself [4] 8/3 17/21 72/23 105/6
lot [11] 25/11 29/6 59/7 78/25 89/15 89/25 90/3 90/20 91/19 92/19 110/1	might [15] 6/22 21/17 51/5 70/3 70/4 78/17 81/3 81/4 86/8 86/19 88/3 98/13 112/3 115/12 118/12	<b>N</b>
lots [1] 93/18	million [36] 2/22 2/24 3/10 3/13 3/15 3/17 3/17 3/22 3/23 3/25 4/1 4/1 4/4 4/5 4/12 4/13 4/15 5/16 5/17 5/23 6/2 7/11 7/14 24/12 24/20 25/13 25/13 28/22 29/10 93/12 93/19 94/25 105/21 109/14 109/16 115/10	name [4] 39/7 39/8 63/19 63/20
low [4] 84/13 98/16 99/1 99/3	mind [2] 70/19 112/13	
lower [12] 75/15 82/23 83/22 86/5 86/14 101/10 101/13 108/20 112/25 113/21 114/6 114/17	mine [1] 82/1	
lowest [3] 9/8 99/25 104/5	mining [1] 82/13	
lunch [2] 95/11 118/24	Minnesota [1] 81/1	
<b>M</b>	minute [4] 28/18 50/25 57/19 95/10	
ma'am [2] 15/4 37/12	misunderstood [2] 99/22 117/10	
made [11] 7/4 9/3 15/13 40/9 47/11 65/2 65/25 66/10 69/3 75/4 117/24	mix [2] 48/2 84/1	
main [3] 64/3 97/25 98/4	mode [1] 25/10	
mainly [1] 21/14	model [1] 87/19	
maintenance [1] 48/6	modeling [1] 75/8	
make [21] 3/5 3/22 20/25 26/3 32/6 32/19 32/20 36/10 39/24 46/16 59/4 66/25 86/14 86/19 86/23 91/18 91/25 96/16 110/4 110/9 112/7	modification [1] 49/15	
makes [6] 3/10 3/21 28/7 28/11 47/8 98/14	modified [1] 89/21	
making [1] 89/1	modify [1] 19/7	
management [1] 88/24	modular [1] 89/10	
manner [1] 75/1	moment [3] 33/21 90/5 99/2	
manufacture [1] 90/11	Monday [1] 101/24	
manufactured [1] 90/22	monoxide [2] 100/5 114/10	
many [8] 17/22 17/23 25/9 46/1 75/15 97/2 109/4 109/14	month [2] 3/23 4/19	
march [1] 86/24	months [1] 105/9	
margin [1] 40/12	more [42] 18/4 18/9 18/10 19/5 19/5 19/16 19/16 19/25 28/6 30/17 32/19 34/19 40/25 47/13 64/21 78/14 78/25 80/18 81/3 81/4	
marked [14] 1/5 1/10 11/7 14/1 14/24 38/1 39/17 41/13 58/4 58/9 58/13 60/2 60/14 64/5		

<b>N</b>	<b>noticed</b> [1] 29/5 <b>notify</b> [1] 11/2 <b>now</b> [21] 2/18 21/2 22/4 22/9 23/15 24/10 26/13 40/11 40/22 60/7 62/3 77/16 77/22 78/23 86/2 87/16 97/16 101/15 109/22 111/20 118/9 <b>NOx</b> [4] 2/12 52/3 97/22 113/22 <b>Nucor</b> [1] 72/7 <b>number</b> [6] 79/13 90/12 100/6 103/23 105/15 109/23 <b>numbers</b> [5] 19/25 48/4 64/16 65/21 104/3	<b>108/13 109/2</b> <b>opinions</b> [1] 25/20 <b>opportunity</b> [2] 10/19 90/11 <b>opposed</b> [4] 4/5 6/20 9/15 101/6 <b>opposite</b> [2] 4/18 83/8 <b>option</b> [3] 85/10 89/13 100/13 <b>options</b> [4] 107/24 108/20 110/2 111/6 <b>order</b> [9] 6/6 6/18 56/11 84/15 93/2 94/23 99/15 105/22 107/19 <b>ordered</b> [1] 106/22 <b>orders</b> [1] 52/18 <b>organization</b> [3] 78/25 83/3 85/1 <b>other</b> [31] 3/16 21/7 21/21 22/19 25/5 32/8 35/3 46/3 48/7 49/17 53/10 62/1 64/25 66/9 74/11 78/10 79/5 83/15 84/13 84/21 84/22 90/16 92/21 98/5 98/11 98/13 98/21 98/21 98/22 100/10 111/13 <b>others</b> [3] 47/23 74/17 85/19 <b>otherwise</b> [1] 56/16 <b>OUCC</b> [9] 2/10 25/4 26/13 26/19 27/18 29/1 29/7 29/14 59/9 <b>OUCC's</b> [1] 28/23 <b>ought</b> [1] 70/20 <b>our</b> [15] 2/23 4/25 10/6 11/18 20/8 27/24 29/2 81/14 82/18 83/3 83/9 83/14 85/19 94/15 99/22 <b>out</b> [15] 6/18 17/15 54/8 54/12 58/25 68/23 77/20 80/6 81/17 92/23 94/9 102/8 105/3 109/4 109/24 <b>outlined</b> [2] 103/14 112/16 <b>outside</b> [2] 30/10 47/14 <b>outweigh</b> [1] 112/13 <b>over</b> [7] 7/11 23/21 25/21 83/5 83/11 87/14 102/18 <b>overlap</b> [1] 89/8 <b>overrule</b> [5] 7/2 8/25 33/8 47/3 103/6 <b>overstretch</b> [1] 90/2 <b>own</b> [3] 29/1 29/2 53/3 <b>oxide</b> [1] 35/3 <b>oxides</b> [1] 100/3
<b>nation</b> [3] 86/7 92/16 100/1 <b>native</b> [5] 3/10 7/23 7/23 72/19 72/24 <b>natural</b> [11] 92/21 92/24 92/25 98/12 100/14 100/16 100/18 100/24 101/6 101/9 101/9 <b>nature</b> [1] 111/5 <b>near</b> [1] 107/9 <b>necessarily</b> [3] 91/14 110/12 110/14 <b>necessary</b> [3] 23/14 64/13 88/6 <b>need</b> [20] 8/5 15/12 36/11 65/1 66/10 75/14 84/12 85/20 91/24 93/9 94/22 97/16 97/16 99/20 107/19 109/21 109/22 109/23 118/8 118/12 <b>needed</b> [2] 59/21 118/1 <b>needs</b> [4] 58/21 62/6 65/25 93/8 <b>negative</b> [1] 5/2 <b>neglected</b> [1] 62/5 <b>negotiated</b> [1] 56/15 <b>neighboring</b> [1] 94/21 <b>neither</b> [2] 20/3 24/13 <b>net</b> [1] 101/16 <b>neutral</b> [1] 85/16 <b>never</b> [2] 104/19 109/6 <b>new</b> [18] 2/14 28/9 28/9 34/17 50/12 50/12 50/13 50/13 59/5 59/6 89/20 90/10 99/4 99/7 99/10 99/11 107/19 110/13 <b>next</b> [7] 3/20 14/6 38/6 40/13 40/19 63/2 83/11 <b>Nice</b> [1] 68/12 <b>nitrogen</b> [2] 35/3 100/3 <b>no</b> [85] 1/7 1/12 5/11 5/12 6/8 8/2 8/9 10/5 11/8 11/24 12/1 12/4 14/3 14/25 15/10 15/14 15/24 15/25 16/1 16/5 17/5 17/17 18/3 20/14 21/9 22/17 22/22 25/4 25/7 27/11 29/4 29/8 29/25 30/15 32/7 33/16 35/9 36/5 39/19 41/15 42/9 43/1 44/1 45/4 45/7 45/10 45/13 48/21 51/3 52/23 52/23 56/18 57/2 58/11 60/4 60/15 60/23 61/5 61/7 61/9 62/11 62/19 64/7 65/3 65/9 66/12 66/15 67/9 67/15 67/20 68/22 72/4 73/5 76/14 82/5 85/10 91/5 104/21 106/4 106/7 106/10 106/16 113/1 116/24 117/25 <b>nobody</b> [1] 11/21 <b>NOI</b> [6] 52/1 52/5 52/5 52/10 52/24 53/1 <b>non</b> [2] 3/10 7/23 <b>non-native</b> [2] 3/10 7/23 <b>None</b> [1] 74/1 <b>normal</b> [1] 50/4 <b>normally</b> [1] 54/10 <b>North</b> [1] 102/4 <b>Nos</b> [6] 38/3 58/6 58/15 61/12 66/22 67/17 <b>not</b> [118] 5/4 6/5 6/13 7/12 7/18 8/6 9/10 9/12 10/5 15/14 17/17 17/18 18/3 20/14 21/9 21/16 22/3 22/12 22/15 22/17 24/23 26/25 27/14 27/15 28/8 28/9 28/12 29/4 29/8 29/18 30/14 30/22 31/1 31/10 33/4 34/24 35/22 35/25 36/5 38/9 40/14 40/16 41/23 42/3 42/17 46/2 50/3 50/15 50/15 50/21 50/23 52/21 52/24 52/24 53/1 53/5 54/2 54/19 56/11 58/24 59/6 62/14 63/4 68/20 69/10 69/10 69/13 69/17 69/25 70/17 75/8 75/23 76/1 78/5 79/22 81/17 82/5 85/6 87/2 87/3 87/5 88/12 88/20 89/6 89/15 91/11 91/14 93/21 94/4 94/19 95/5 98/3 98/11 98/15 99/10 100/1 101/4 102/2 102/6 102/12 102/16 104/3 105/5 105/25 106/10 106/16 107/10 109/1 109/6 110/12 110/14 110/17 112/12 112/18 114/15 114/20 116/8 116/14 <b>noted</b> [1] 80/8 <b>nothing</b> [5] 4/10 33/18 36/18 37/14 59/9	<b>O</b> <b>oath</b> [3] 38/14 41/10 63/8 <b>object</b> [6] 6/25 8/4 21/24 33/2 46/19 52/21 <b>objecting</b> [1] 8/9 <b>objection</b> [20] 6/24 7/2 8/2 8/6 9/1 16/1 27/6 27/17 31/19 32/1 32/7 32/18 33/9 42/16 47/4 53/9 62/13 67/9 102/21 103/7 <b>objects</b> [1] 11/21 <b>observation</b> [1] 83/10 <b>observed</b> [1] 105/8 <b>obvious</b> [1] 85/17 <b>obviously</b> [3] 87/2 89/6 90/3 <b>occur</b> [1] 104/6 <b>October</b> [3] 26/14 26/15 26/22 <b>October 2006</b> [2] 26/14 26/22 <b>off</b> [25] 2/19 2/25 3/4 5/12 5/21 5/25 7/9 7/13 8/11 8/16 8/19 28/8 28/12 28/12 33/20 33/23 59/14 77/7 86/15 88/18 89/1 90/22 103/2 109/21 117/11 <b>off-system</b> [10] 2/19 2/25 3/4 5/12 5/21 5/25 7/9 7/13 8/16 8/19 <b>Off-the-Record</b> [1] 33/23 <b>offer</b> [5] 42/13 60/5 60/21 66/20 112/14 <b>offered</b> [5] 64/14 65/19 66/11 70/7 116/7 <b>offering</b> [1] 11/22 <b>offerings</b> [1] 70/12 <b>offers</b> [1] 15/24 <b>Office</b> [2] 15/8 39/12 <b>official</b> [2] 40/10 60/18 <b>often</b> [1] 86/17 <b>Oh</b> [1] 58/20 <b>oil</b> [11] 92/22 92/24 93/13 94/18 105/1 105/4 105/13 105/14 105/19 105/23 107/11 <b>okay</b> [26] 4/17 5/6 6/11 7/1 7/16 11/5 18/20 19/14 19/15 20/7 22/16 29/9 30/8 40/2 40/13 42/6 72/25 73/23 81/25 82/22 100/24 101/1 103/16 103/17 104/15 107/7 <b>old</b> [1] 117/14 <b>older</b> [1] 111/24 <b>on -- We</b> [1] 54/7 <b>on-line</b> [1] 22/22 <b>once</b> [3] 28/8 33/1 33/7 <b>one</b> [45] 6/24 9/7 25/8 27/2 33/21 40/17 40/25 46/15 47/7 47/15 53/13 53/14 58/20 59/5 60/4 60/6 60/18 60/22 62/1 66/6 69/5 78/1 78/3 83/13 85/18 86/21 92/17 92/19 96/18 97/14 97/25 98/2 98/4 99/25 105/20 109/24 110/2 110/13 111/21 112/11 112/22 113/17 116/19 117/9 118/12 <b>one -- It</b> [1] 98/2 <b>ones</b> [4] 31/8 53/12 53/14 87/5 <b>only</b> [11] 5/22 70/1 74/20 98/3 98/15 100/1 102/8 102/22 102/25 111/5 111/21 <b>open</b> [1] 41/18 <b>opening</b> [2] 70/24 108/19 <b>opens</b> [1] 70/23 <b>operating</b> [2] 73/15 110/8 <b>operation</b> [6] 30/2 48/6 68/15 68/25 71/19 81/13 <b>operational</b> [1] 30/8 <b>opinion</b> [7] 26/4 37/3 70/25 88/7 92/9	
	<b>P</b> <b>P.M</b> [1] 118/25 <b>P2</b> [2] 48/24 49/18 <b>package</b> [1] 116/6 <b>page</b> [34] 20/16 21/2 22/4 23/15 24/10 26/16 26/20 30/9 34/13 40/2 40/13 40/19 45/22 45/24 45/25 51/6 51/19 51/22 54/23 54/24 60/8 60/9 60/11 60/16 60/17 64/16 64/18 64/23 65/21 65/23 71/14 74/22 76/4 76/5 <b>pages</b> [1] 76/6 <b>paid</b> [2] 116/5 117/16 <b>paper</b> [4] 21/11 21/12 21/20 22/2 <b>paragraph</b> [1] 66/4 <b>parameters</b> [1] 89/24 <b>paraphrasing</b> [1] 77/9 <b>Pardon</b> [4] 30/24 47/20 73/21 100/15 <b>part</b> [9] 20/8 27/8 33/7 48/1 51/5 83/25 84/18 90/10 109/11 <b>partial</b> [6] 70/16 94/13 102/22 102/25 111/7 112/6 <b>partially</b> [2] 19/10 27/22 <b>participate</b> [2] 10/3 22/10 <b>particles</b> [2] 79/10 79/13 <b>particular</b> [7] 51/19 71/3 77/13 94/12 98/23 108/15 112/2 <b>particulate</b> [3] 80/16 81/2 113/23 <b>particulates</b> [6] 79/8 79/9 79/25 80/5 80/7 80/22 <b>parties</b> [4] 11/21 49/22 52/4 60/20 <b>Partnership</b> [1] 26/2 <b>parts</b> [3] 84/21 109/14 109/16	

P		
<p>pass [3] 22/16 55/4 59/3</p> <p>passed [2] 46/17 47/9</p> <p>past [3] 22/11 22/17 51/25</p> <p>pattern [1] 103/11</p> <p>pay [11] 68/19 77/10 104/19 108/10 108/14 108/17 108/25 109/3 116/5 118/1 118/9</p> <p>paying [1] 111/3</p> <p>PC [5] 24/11 34/22 35/6 117/15 118/1</p> <p>PCs [1] 117/22</p> <p>pending [2] 21/13 53/7</p> <p>people [12] 21/10 21/18 22/1 23/10 25/25 32/13 74/18 108/9 108/10 108/14 108/16 117/22</p> <p>per [5] 9/10 103/18 104/17 109/14 109/16</p> <p>percent [36] 24/19 24/20 27/19 28/2 28/5 28/15 28/19 29/16 30/3 49/25 50/14 50/22 52/16 78/15 81/21 94/14 97/10 101/15 103/21 104/1 104/2 104/6 104/7 104/8 104/9 104/10 104/12 106/23 106/24 107/4 111/10 111/14 111/18 112/9 112/23 112/23</p> <p>percentage [1] 3/6</p> <p>performance [2] 2/15 116/22</p> <p>performed [2] 29/14 29/18</p> <p>perhaps [6] 32/19 42/4 89/8 98/11 100/2 110/15</p> <p>period [4] 3/23 4/19 23/21 55/3</p> <p>periods [1] 78/13</p> <p>Permian [2] 105/10 106/3</p> <p>permit [1] 19/8</p> <p>personnel [1] 20/21</p> <p>perspective [1] 9/9</p> <p>pertinent [1] 51/5</p> <p>petition [1] 17/25</p> <p>Petitioner [1] 26/24</p> <p>Petitioner's [1] 58/10</p> <p>petitioners [1] 56/10</p> <p>Phase [2] 48/25 49/18</p> <p>phone [1] 90/6</p> <p>phrase [1] 32/9</p> <p>picking [1] 77/7</p> <p>picture [1] 109/10</p> <p>pinpoint [1] 25/8</p> <p>pipeline [5] 106/2 106/4 106/7 116/13 116/14</p> <p>pipelines [1] 92/21</p> <p>place [4] 8/20 17/24 32/23 33/13</p> <p>placed [3] 11/6 39/17 41/13</p> <p>places [2] 79/16 85/17</p> <p>planet [1] 83/14</p> <p>planning [2] 87/24 114/21</p> <p>plant [123]</p> <p>plants [36] 9/8 9/14 30/2 30/5 30/10 30/14 30/23 30/25 34/18 34/22 34/25 69/20 69/20 69/25 70/1 70/3 70/12 71/16 71/18 71/24 73/16 86/8 87/5 88/16 89/6 89/25 90/13 93/6 94/1 98/13 100/1 109/25 113/18 113/24 114/7 114/12</p> <p>please [13] 14/13 15/2 33/11 38/16 39/7 40/1 40/12 45/22 47/6 64/21 65/22 72/11 76/20</p> <p>plus [1] 3/17</p> <p>point [9] 5/20 7/3 7/4 9/3 32/20 54/5 68/23 90/2 103/2</p> <p>policies [1] 21/13</p> <p>policy [1] 21/15</p> <p>Polk [19] 10/10 11/14 26/7 26/12 31/22 32/21 34/6 45/9 62/4 62/17 69/2 76/18 77/2 95/7 96/6 96/12 113/1 113/5 114/19</p> <p>Pollutant [1] 52/3</p> <p>pollutants [4] 35/4 78/10 97/22 114/2</p>	<p>pollution [5] 49/24 53/15 54/1 54/11 79/6</p> <p>portion [2] 55/1 98/20</p> <p>portions [1] 116/6</p> <p>position [5] 8/18 19/2 63/23 74/2 99/22</p> <p>possible [3] 25/14 27/11 70/22</p> <p>possibly [1] 31/7</p> <p>potential [1] 116/18</p> <p>power [24] 69/8 74/5 74/11 74/17 78/6 85/3 89/14 90/21 90/24 91/6 93/20 94/1 97/7 98/19 100/18 100/22 101/2 101/4 101/6 101/9 103/24 110/25 113/18 118/8</p> <p>powerful [2] 117/19 118/6</p> <p>practical [3] 7/10 111/2 111/20</p> <p>practiced [1] 105/20</p> <p>pragmatic [1] 83/10</p> <p>prefile [1] 39/14</p> <p>prefiled [14] 15/3 16/6 39/21 43/2 44/2 60/6 61/5 61/10 62/20 64/8 65/15 66/9 67/15 67/21</p> <p>preliminary [1] 36/1</p> <p>premature [1] 79/15</p> <p>premise [1] 85/9</p> <p>prepare [2] 29/1 29/2</p> <p>prepared [3] 15/19 23/24 43/2</p> <p>preparing [1] 114/25</p> <p>present [2] 101/20 102/2</p> <p>presented [2] 20/1 21/22</p> <p>pressure [1] 94/7</p> <p>presumably [1] 11/16</p> <p>pretty [3] 71/5 98/16 107/18</p> <p>prevent [4] 78/20 84/15 94/23 102/17</p> <p>preventing [2] 85/25 92/18</p> <p>previous [1] 56/21</p> <p>previously [1] 2/3</p> <p>price [15] 86/20 87/18 87/19 88/1 88/2 88/2 88/10 88/11 88/13 88/13 105/12 105/14 105/25 117/13 118/6</p> <p>priced [1] 86/18</p> <p>prices [7] 75/12 105/17 106/12 106/13 106/14 117/23 118/10</p> <p>pricing [1] 87/25</p> <p>primarily [1] 20/21</p> <p>primary [2] 96/19 116/20</p> <p>printer [1] 117/19</p> <p>prior [2] 27/12 40/3</p> <p>proactively [1] 77/17</p> <p>probability [2] 72/3 107/14</p> <p>probably [8] 49/11 69/15 69/20 71/9 83/8 85/24 89/16 110/17</p> <p>problem [10] 54/17 79/17 80/8 80/19 80/25 81/6 83/21 93/17 93/21 111/9</p> <p>problems [4] 80/9 84/5 84/9 92/1</p> <p>proceed [6] 14/13 38/16 59/24 72/11 76/20 96/6</p> <p>proceeding [6] 10/18 27/5 47/23 52/22 102/5 112/16</p> <p>proceedings [4] 7/8 7/15 7/18 7/20</p> <p>process [5] 7/5 28/3 69/4 86/10 104/18</p> <p>processes [1] 36/14</p> <p>processing [1] 98/12</p> <p>produced [1] 117/13</p> <p>producers [1] 104/16</p> <p>producing [5] 69/17 69/17 73/23 75/10 108/19</p> <p>production [1] 89/2</p> <p>profit [1] 5/12</p> <p>profits [2] 3/4 5/25</p> <p>profound [1] 97/3</p> <p>progress [1] 22/22</p> <p>prohibited [1] 59/2</p> <p>prohibitive [1] 94/2</p> <p>project [24] 11/17 37/5 37/8 40/20 40/23 64/1 73/17 74/23 76/11 82/7 82/9 82/10</p>	<p>83/20 84/6 84/11 84/20 84/24 85/5 85/13 85/14 87/12 94/21 111/16 114/24</p> <p>projects [10] 52/4 52/9 69/16 69/19 85/15 85/16 85/23 86/3 86/3 95/1</p> <p>promote [1] 116/3</p> <p>promoting [2] 115/25 116/13</p> <p>proper [1] 8/17</p> <p>property [4] 49/24 53/16 54/2 54/11</p> <p>proposal [2] 46/1 106/22</p> <p>proposals [1] 71/11</p> <p>propose [1] 8/15</p> <p>proposed [4] 40/23 73/16 74/3 114/23</p> <p>proposes [1] 6/16</p> <p>proposing [1] 6/21</p> <p>prospects [1] 68/14</p> <p>protect [1] 8/20</p> <p>prototype [2] 88/11 88/12</p> <p>prove [1] 112/17</p> <p>proven [2] 69/10 69/10</p> <p>provide [5] 37/5 37/9 51/15 74/10 116/10</p> <p>provided [3] 20/10 29/23 102/4</p> <p>provides [1] 25/19</p> <p>providing [2] 10/15 75/6</p> <p>provision [2] 50/21 53/1</p> <p>public [9] 2/2 14/11 14/17 15/24 38/8 39/2 59/12 108/5 108/7</p> <p>Public's [22] 1/6 11/8 11/23 11/25 12/4 14/2 14/24 15/10 15/24 16/1 16/5 38/2 39/18 40/3 41/4 41/14 42/8 42/9 42/13 42/17 43/1 44/1</p> <p>published [1] 9/11</p> <p>pulverized [8] 34/18 90/18 91/2 91/4 113/24 114/3 114/11 114/18</p> <p>purchased [1] 105/12</p> <p>purpose [2] 7/10 20/22</p> <p>purposes [10] 2/23 4/25 8/7 11/7 19/19 39/18 41/14 52/5 73/2 73/3</p> <p>pursuant [1] 56/5</p> <p>pursue [1] 10/20</p> <p>push [1] 95/10</p> <p>put [5] 59/22 62/5 62/6 93/6 104/16</p> <p>puts [1] 83/12</p>
Q		
		<p>QPCP [1] 50/22</p> <p>qualified [4] 26/3 49/24 54/1 54/11</p> <p>qualities [2] 90/1 91/20</p> <p>quality [1] 91/16</p> <p>quantities [4] 98/8 111/11 111/19 112/10</p> <p>quantity [3] 78/5 93/14 94/15</p> <p>question [22] 9/12 18/8 21/24 23/24 31/10 31/24 32/11 33/11 46/20 47/6 52/14 52/21 54/4 69/2 71/8 81/24 82/1 88/20 89/16 91/7 103/8 103/9</p> <p>questioned [1] 11/13</p> <p>questioning [3] 1/18 9/1 87/4</p> <p>questions [45] 2/8 10/2 10/10 10/22 14/22 15/15 17/5 17/11 17/14 19/24 26/12 34/3 34/12 35/10 35/17 35/20 37/2 39/6 41/8 45/4 45/7 45/10 45/13 45/19 56/2 63/18 65/5 66/14 68/9 72/4 72/7 72/14 73/6 73/11 73/15 76/14 77/2 96/7 96/12 96/14 113/2 113/11 115/13 116/24 117/8</p> <p>quicker [1] 110/15</p> <p>quickly [1] 96/14</p> <p>quotation [1] 94/1</p> <p>quoting [2] 106/12 106/13</p>
R		
		<p>Radcliffe [6] 20/2 23/23 24/2 24/6 29/7 29/7</p> <p>radically [2] 83/22 108/1</p> <p>raise [2] 38/11 63/6</p>



R		
range [7] 18/15 25/7 25/12 25/15 25/25 28/5 102/20	114/22 115/1	rooted [1] 83/9
ranging [1] 104/1	regulatory [2] 69/4 75/17	roughly [2] 102/9 104/10
rank [2] 79/4 79/23	regurgitation [1] 21/15	roundtable [1] 90/8
rapid [2] 47/13 47/13	related [2] 31/13 52/2	rule [1] 114/16
rate [31] 6/6 6/18 10/4 40/5 40/14 46/12 47/14 48/5 49/23 50/3 50/7 50/12 50/13 50/17 50/20 51/2 51/8 53/15 53/19 53/24 53/25 54/6 54/8 54/13 56/14 56/21 71/17 114/1 114/5 114/9 114/17	relates [1] 6/19	rules [5] 48/3 50/4 50/6 54/10 59/6
ratemaking [4] 73/2 73/3 75/18 75/21	relating [3] 18/21 19/7 22/19	run [3] 28/14 47/20 99/20
ratepayer [1] 68/21	relative [1] 81/3	running [1] 109/24
ratepayers [8] 11/16 69/5 75/7 76/8 108/8 108/25 109/13 115/21	relatively [3] 88/25 99/1 99/3	S
rates [7] 2/22 2/24 3/18 3/21 4/5 4/6 5/22	released [3] 78/8 106/25 107/4	safety [1] 102/17
RC [4] 1/12 62/11 62/14 62/19	relevancy [1] 21/23	said [17] 25/1 28/13 30/5 75/18 78/23 82/3 82/5 86/12 93/5 96/18 100/2 100/3 100/4 100/5 100/6 100/7 102/10
read [5] 29/11 29/19 40/7 51/24 102/6	relevant [2] 21/19 52/21	sales [11] 2/19 2/25 3/4 3/10 5/12 5/21 5/25 7/9 7/13 8/16 8/19
reading [1] 68/13	reliable [1] 70/9	saline [5] 31/4 31/13 93/15 94/19 111/12
reads [1] 40/22	reliance [1] 83/1	same [37] 4/21 4/24 15/17 24/12 32/7 41/8 41/11 46/13 57/25 65/6 66/14 66/15 67/4 71/7 80/12 88/8 88/16 88/22 88/23 88/23 88/24 88/25 89/4 89/18 91/3 95/25 96/17 100/2 100/3 100/4 100/5 100/6 100/7 104/11 105/18 106/6 118/25
real [3] 21/19 97/17 100/9	relief [1] 46/13	same-sized [1] 24/12
really [16] 4/20 28/9 29/12 82/19 83/6 83/9 83/11 83/20 90/13 90/19 102/16 109/8 109/9 109/20 111/5 112/6	remainder [1] 53/12	Sanders [1] 71/15
reason [4] 74/20 98/2 98/3 107/13	remains [3] 50/14 52/19 66/7	say [41] 3/20 3/22 4/19 18/17 19/21 24/10 46/1 47/11 71/16 72/3 78/10 78/15 78/15 79/20 79/24 79/25 80/18 80/24 85/11 85/21 86/13 86/19 88/3 89/23 93/2 93/11 94/2 94/14 98/3 98/12 99/3 100/24 103/12 103/18 104/1 104/7 104/7 105/18 106/10 112/21 112/23
reasonable [6] 75/10 75/14 76/12 88/5 103/22 108/18	remember [3] 86/12 104/10 117/14	saying [4] 81/19 90/24 101/1 101/8
reasonable -- I [1] 103/22	renewable [1] 84/1	says [8] 6/7 23/20 26/20 34/17 40/20 41/2 51/24 93/6
reasons [8] 52/22 78/4 78/18 97/14 97/20 97/25 110/1 112/7	renewables [4] 84/13 84/19 84/23 85/2	scale [5] 24/21 74/24 85/23 86/3 98/25
rebuttal [8] 20/6 63/15 65/15 66/10 66/17 67/21 76/4 118/21	repeat [4] 18/8 33/11 37/7 64/21	scenario [5] 5/19 28/21 102/8 103/3 103/17
recall [3] 19/4 20/12 49/19	rephrase [4] 31/23 32/2 32/21 54/4	schedules [2] 41/24 42/1
recap [1] 2/21	replicate [1] 107/23	Schliessel [1] 21/22
receive [2] 4/12 36/11	Reporter [9] 1/5 1/10 14/1 38/1 58/4 58/9 58/13 60/5 60/18	science [2] 17/19 93/1
received [2] 11/15 20/20	Reporter's [1] 67/1	scientists [2] 93/2 94/22
recently [1] 105/21	repowering [2] 99/6 101/18	scrubbing [1] 111/24
RECESS [4] 57/25 95/19 95/25 118/25	represent [3] 21/2 102/9 105/6	seat [1] 95/4
recollection [3] 52/15 71/23 102/12	representatives [3] 19/10 19/13 20/10	second [5] 51/23 66/3 92/9 92/11 111/22
recommend [1] 70/15	request [7] 27/24 28/17 46/2 46/5 46/11 48/10 49/14	secondary [2] 74/15 79/11
reconvene [1] 118/24	requested [5] 40/4 48/16 49/12 56/5 56/10	section [7] 47/18 47/24 47/25 51/21 52/9 116/16 116/17
record [16] 1/16 33/21 33/23 34/1 39/8 40/9 58/19 58/21 58/22 58/23 59/23 60/5 62/5 65/19 96/5 101/23	requests [2] 20/7 20/9	sector [6] 74/17 78/6 78/6 78/7 93/20 98/19
recovery [14] 47/14 52/2 52/7 56/5 88/7 93/13 94/18 105/1 105/13 105/19 105/23 107/11 111/24 115/19	require [3] 70/16 71/16 74/7	security [1] 58/23
REDACTED [1] 43/2	required [3] 2/14 104/18 104/23	see [14] 8/3 21/4 23/5 24/14 41/16 41/23 48/14 49/7 68/12 83/6 87/21 95/3 108/2 108/23
redirect [8] 9/20 10/1 36/19 37/1 55/17 56/1 117/2 117/7	research [4] 18/13 25/2 25/4 103/24	see or [1] 23/5
reduce [4] 82/11 82/20 112/19 112/24	residents [1] 108/21	seeing [2] 6/9 105/16
reduced [1] 22/6	resource [2] 83/16 84/1	seek [1] 115/19
reducing [1] 79/17	resources [3] 7/22 7/22 84/2	seeking [2] 88/6 88/14
reduction [3] 18/7 18/12 18/21	respect [17] 17/21 31/4 32/4 36/1 56/19 66/25 71/11 79/14 80/15 84/7 84/10 87/16 89/8 96/19 96/20 96/21 101/25	seems [5] 31/11 76/12 83/16 83/16 113/15
Reed [7] 14/7 14/10 14/22 15/23 17/1 37/2 37/13	respects [2] 46/2 46/5	seems -- and [1] 83/16
reference [4] 22/8 23/15 23/16 36/7	respond [2] 8/12 93/15	seen [1] 9/10
referencing [1] 71/15	response [4] 27/9 27/24 31/21 46/22	sees [1] 2/10
referred [3] 47/17 47/22 50/5	responsibility [2] 77/10 77/15	selective [1] 25/23
referring [1] 79/9	restate [1] 47/6	selling [1] 104/25
refineries [1] 69/22	restrictions [1] 72/2	Senate [9] 22/8 22/16 22/18 47/17 47/24 48/1 48/5 48/8 52/8
refresh [1] 52/15	restructured [1] 73/1	sending [1] 98/18
regard [1] 34/24	rests [1] 59/12	sense [7] 22/20 28/7 28/11 36/10 68/12 110/4 110/9
regarding [5] 11/11 18/6 22/13 23/1 115/13	result [1] 78/11	sentence [4] 34/17 51/24 66/3 66/6
regardless [1] 50/11	resulted [1] 49/19	seq [2] 47/19 52/10
regional [2] 26/1 81/4	results [2] 7/13 8/24	sequester [3] 99/16 106/23 107/3
regulated [3] 35/3 73/1 115/18	resumed [1] 2/3	sequestered [1] 98/7
regulating [1] 77/24	retain [1] 52/7	sequestering [3] 30/17 31/13 91/25
regulation [3] 71/1 77/22 104/24	return [23] 40/5 40/14 48/5 48/8 48/17 49/23 50/3 50/6 50/7 51/23 53/1 53/15 53/20 54/1 54/7 54/7 54/12 54/15 56/11 56/12 56/15 56/17 57/1	sequestration [46] 19/19 20/24 26/2 27/20
regulations [12] 21/13 21/21 32/23 33/13 74/25 75/13 77/18 100/11 102/15 104/18	review [7] 8/22 10/7 10/8 20/9 20/18 25/18 51/4	
	reviewed [2] 5/4 25/24	
	rider [3] 4/7 55/7 55/12	
	right [30] 4/1 20/21 23/19 24/8 26/18 38/11 40/8 40/11 49/16 49/20 50/8 54/6 54/20 55/7 55/8 63/6 79/1 94/16 95/8 96/24 97/1 97/6 97/12 97/13 104/3 107/1 109/22 118/2 118/3 118/14	
	rise [1] 104/7	
	risk [4] 4/23 74/8 77/20 114/20	
	ROE [5] 49/9 50/12 52/16 53/23 54/3	
	ROEs [1] 53/11	
	room [2] 75/25 109/19	

S		
sequestration... [42] 28/16 28/21 30/4 32/25 33/14 37/5 37/9 77/13 84/17 85/7 87/7 88/9 91/8 91/9 91/13 91/22 92/5 92/12 92/13 92/17 92/20 94/13 97/17 97/24 97/25 98/5 98/9 98/18 99/20 101/16 103/4 103/19 107/7 107/11 108/5 110/4 110/10 112/18 115/16 115/20 115/22 116/19	so [65] 4/3 4/23 4/24 5/19 8/3 8/9 9/11 11/22 20/24 21/14 21/16 23/23 24/20 25/7 28/10 29/11 33/16 40/7 40/15 40/22 47/2 59/8 59/9 60/21 62/3 66/3 70/22 70/24 74/9 77/24 78/13 78/18 79/20 80/20 81/2 81/23 83/9 83/19 84/17 85/1 86/16 87/1 87/11 87/13 89/6 89/13 89/15 90/24 91/11 93/16 94/11 97/25 99/10 101/1 101/7 103/13 103/16 105/16 105/24 108/4 109/11 109/19 111/9 112/2 118/8	30/13 30/15 30/20 30/21 80/10 80/14 86/8 94/21
service [3] 60/9 60/16 75/7	SO2 [3] 2/12 97/22 100/1	stating [1] 24/24
session [2] 22/11 22/17	society [4] 74/18 79/22 83/13 86/6	statuses [1] 21/15
set [5] 11/10 50/12 53/23 86/20 87/18	solid [2] 82/14 100/7	statute [8] 46/9 46/10 46/17 47/1 47/9 47/12 47/16 47/21
setback [1] 109/7	SOLLER [11] 2/1 6/9 6/21 8/14 8/23 10/1 10/3 13/3 13/5 13/14 24/16	statutes [2] 54/25 56/6
setting [3] 90/7 90/8 111/4	Soller's [3] 6/15 6/15 8/1	steam [1] 111/25
settled [2] 53/19 56/21	solution [2] 84/18 112/4	step [1] 51/10
settlement [11] 6/6 49/13 49/15 49/20 49/22 50/18 51/3 51/9 52/25 53/4 53/6	solve [1] 84/4	STEPHEN [1] 61/11
settlements [1] 52/17	some [33] 2/22 10/22 20/20 21/21 40/4 40/7 46/5 48/13 59/19 69/9 69/23 70/3 71/10 72/20 74/1 76/10 78/10 79/5 86/22 87/11 89/7 91/16 91/19 91/22 97/2 97/17 109/20 111/20 111/25 112/6 114/14 116/2 116/15	stepping [1] 103/2
seven [1] 95/10	something [10] 6/16 7/11 8/1 28/11 58/21 62/4 81/21 104/5 108/25 117/12	stepping-off [1] 103/2
seven-minute [1] 95/10	sometime [1] 102/14	steps [2] 109/24 109/25
several [4] 27/21 33/17 97/20 112/21	sometimes [1] 97/9	STEWART [10] 6/12 6/25 7/24 8/8 17/7 17/11 26/6 29/6 45/6 45/7
share [2] 3/25 89/22	somewhere [1] 102/19	still [20] 6/1 27/1 30/19 33/15 46/13 50/22 52/18 78/14 78/16 78/17 81/20 81/22 97/10 97/11 101/16 106/24 107/2 109/19 112/11 113/14
shareholder [1] 40/5	soon [3] 70/22 71/2 91/23	stipulation [2] 51/3 60/19
shareholders [11] 3/7 3/15 4/3 4/9 5/15 5/24 7/10 77/8 77/9 77/21 115/14	sorry [11] 4/16 8/10 14/10 45/24 51/18 51/20 64/22 76/5 82/16 94/18 95/2	stop [2] 26/21 95/8
sharing [5] 2/19 5/21 7/9 8/16 8/19	sort [5] 69/18 77/9 81/18 87/18 91/22	storage [5] 29/16 73/25 74/1 75/5 92/24
she [9] 6/15 24/17 24/23 27/11 27/13 27/14 33/4 33/10 77/8	sorts [4] 32/15 79/2 87/10 90/16	storing [3] 31/4 31/17 32/4
she's [3] 6/21 29/8 33/4	sought [2] 115/4 116/10	STORMS [24] 8/10 8/25 13/3 13/6 14/10 14/13 15/25 27/9 27/16 33/8 33/20 35/11 38/10 45/12 46/22 51/15 57/18 62/1 62/12 63/1 63/5 76/20 118/17 118/23
shifting [1] 95/4	source [9] 2/15 24/23 24/24 25/1 99/4 99/10 99/11 99/13 99/14	strata [1] 24/3
Shilling [6] 18/6 18/11 18/20 18/25 19/6 25/22	sources [5] 25/5 94/1 98/5 98/11 99/25	Street [1] 64/3
Shilling's [1] 36/4	South [1] 80/20	strict [1] 74/25
ship [2] 105/21 106/3	southern [2] 68/22 116/17	strictly [1] 59/2
shipping [1] 106/6	SOx [1] 97/22	strike [5] 64/18 64/24 66/1 66/2 106/19
short [1] 107/20	speaking [1] 84/12	stringent [1] 74/24
short-term [1] 107/20	special [1] 98/15	strong [1] 97/16
shortage [1] 105/11	specific [15] 6/16 18/17 18/22 20/15 29/11 32/20 53/20 53/23 71/22 86/8 89/5 91/9 91/13 100/23 110/7	Stroock [2] 21/3 21/6
should [14] 40/7 40/14 40/16 41/2 51/9 52/6 81/11 82/18 108/6 108/10 108/14 108/17 108/25 109/3	specifically [5] 23/8 46/17 49/10 53/18 84/5	structure [1] 50/13
show [7] 11/25 16/1 42/17 60/24 62/14 67/10 116/16	speculation [2] 27/7 27/10	studies [1] 92/16
side [1] 59/1	spell [1] 39/7	study [4] 29/15 29/18 35/22 35/23
SIGECO [3] 48/24 49/1 53/13	spend [2] 99/16 104/22	studying [1] 36/6
SIGECO/Vectren [1] 48/24	spent [1] 71/10	subject [4] 5/8 20/23 48/15 48/18
signed [1] 60/10	split [1] 5/15	submit [1] 62/9
significant [7] 79/17 80/8 81/20 91/25 97/18 98/20 112/9	spoke [1] 25/25	subsequent [1] 49/13
significantly [2] 22/10 113/21	spoken [1] 17/23	subset [1] 69/19
similar [2] 28/1 69/22	spokesperson [1] 87/23	substantially [2] 15/17 41/10
similarly [2] 52/6 60/13	stabilization [1] 87/14	substitute [1] 112/15
simply [1] 21/12	stabilize [1] 78/20	substituted [1] 32/9
since [6] 17/24 20/19 21/20 23/12 25/18 58/22	stack [4] 7/21 9/15 9/16 94/10	successful [1] 68/25
sirens [1] 80/21	staff [3] 11/3 11/18 84/24	such [3] 2/12 24/21 95/3
sit [1] 22/18	stand [2] 2/4 38/11	sufficient [2] 8/20 105/2
site [8] 22/25 29/11 89/5 90/14 90/15 90/22 91/9 91/13	Standards [1] 2/15	suggest [1] 91/17
sites [2] 23/5 23/18	start [7] 20/16 28/12 28/12 31/8 77/16 103/21 118/9	suggesting [3] 22/23 108/24 117/22
situation [4] 31/15 85/12 87/20 89/4	started [1] 71/20	Suite [1] 64/3
six [3] 60/22 64/11 65/9	starting [2] 2/20 40/2	sulfur [1] 35/2
size [2] 68/16 73/16	starts [1] 40/14	summer [1] 10/8
sized [2] 24/12 112/8	state [16] 22/4 39/7 54/25 73/1 73/1 73/4 74/23 76/2 76/6 98/6 109/2 109/5 115/24 116/2 116/17 116/17	Sunday [1] 80/1
slowly [2] 40/1 64/21	statement [2] 9/17 26/3	super [2] 34/17 35/6
small [1] 28/12	statements [1] 9/6	super-critical [1] 34/17
smaller [1] 110/25	states [13] 28/19 30/3 30/6 30/9 30/10	superior [1] 116/22
Smith [22] 14/12 14/16 14/23 15/5 15/10 16/7 17/1 17/10 26/11 26/13 32/22 33/3 33/9 34/2 34/11 34/13 35/16 35/18 37/1 37/3 37/15 37/21		supervise [1] 84/25
Smith's [1] 27/7		supervision [1] 15/20
smoke [1] 94/10		support [6] 22/5 22/24 85/2 85/5 98/1 113/16

<b>S</b>		
syn [2] 94/6 94/9 system [10] 2/19 2/25 3/4 5/12 5/21 5/25 7/9 7/13 8/16 8/19		
<b>T</b>		
take [11] 2/9 4/18 20/15 41/18 49/17 51/10 57/18 62/2 85/18 94/2 95/9 taken [2] 17/24 94/9 takes [1] 93/22 taking [2] 93/10 109/23 talk [3] 19/14 31/9 71/18 talked [4] 53/13 54/23 96/15 117/10 talking [15] 2/11 23/6 24/16 29/5 30/19 31/6 47/16 47/22 51/22 52/24 52/25 55/6 71/10 84/3 110/21 target [1] 109/15 targets [1] 106/11 Task [16] 59/15 60/3 60/25 63/11 63/22 63/23 64/6 66/21 67/10 75/4 78/23 82/4 82/6 84/22 85/1 90/8 tax [4] 115/4 115/9 116/7 116/7 technical [1] 29/15 technologies [6] 82/20 83/22 83/25 84/14 84/23 107/19 technology [23] 17/19 22/7 28/9 28/10 46/10 56/6 69/10 70/6 70/14 74/4 74/10 75/22 85/24 87/13 89/9 90/10 92/6 92/8 94/6 100/9 111/23 115/25 116/4 tell [13] 10/14 11/1 15/11 27/18 31/16 32/3 53/25 54/18 54/22 58/22 64/16 65/21 105/7 ten [1] 57/19 ten-minute [1] 57/19 term [5] 55/2 82/22 86/11 94/19 107/20 terms [8] 10/21 49/9 69/3 79/17 83/23 84/8 102/6 116/9 test [3] 51/23 52/5 52/24 testified [10] 2/4 14/18 18/20 19/1 19/3 20/3 20/13 33/4 39/3 63/14 testify [3] 22/13 27/14 59/18 testifying [2] 6/5 17/18 testimony [72] 6/15 8/2 8/15 9/6 10/24 10/25 13/4 15/3 15/13 15/16 15/19 16/6 20/4 20/6 20/16 20/17 23/20 24/18 26/17 30/9 34/14 36/4 37/16 39/14 39/21 41/5 41/22 42/8 42/10 43/3 44/3 45/23 54/24 57/6 59/19 59/23 60/1 60/10 60/14 60/20 61/6 61/10 62/10 62/21 64/9 64/14 65/1 65/8 65/10 65/16 66/10 66/18 67/16 67/21 68/13 68/23 70/15 71/10 71/14 74/22 74/23 76/4 94/16 97/21 102/3 102/7 102/23 103/1 109/9 115/12 117/21 118/18 tests [1] 94/17 Texas [4] 105/11 106/3 106/5 106/13 than [34] 3/21 3/22 7/14 18/5 18/10 19/6 19/17 21/7 24/12 30/17 32/8 35/6 46/6 78/25 89/8 90/18 91/2 92/8 98/10 99/8 100/14 100/16 100/21 101/2 101/3 101/10 101/13 101/20 110/13 113/23 114/3 114/6 114/11 114/17 thank [57] 1/19 2/18 3/20 4/17 7/16 8/14 9/21 11/19 13/2 13/3 13/5 14/9 14/14 15/4 15/22 16/3 17/3 17/8 23/14 26/5 26/9 34/2 34/5 34/8 35/8 35/11 35/13 36/20 37/12 37/15 38/7 38/18 45/16 52/13 55/16 55/18 57/5 59/25 62/8 62/16 63/5 67/8 68/3 68/5 72/5 73/5 73/7 76/13 76/16 76/19 96/8 113/3 113/4 113/7 116/25 117/4 118/17 thanks [2] 6/11 11/5 that [502] that's [48] 2/17 3/2 3/17 4/8 5/7 5/18 8/19 9/3 9/18 13/1 21/19 23/14 23/20 26/6 26/16	29/23 40/17 41/3 42/2 42/3 47/11 48/10 48/10 50/18 53/7 53/17 54/20 55/14 56/8 56/13 57/3 70/6 74/20 75/12 75/13 81/25 88/7 89/14 89/14 94/16 102/22 107/14 108/6 108/7 110/2 113/20 118/3 118/16 their [8] 21/8 21/17 57/1 83/23 87/22 95/4 101/25 102/6 them [7] 31/9 34/24 67/2 89/12 90/14 91/12 104/19 then [22] 4/18 8/2 9/3 19/23 22/7 28/7 48/25 49/1 49/13 51/23 54/19 59/24 60/13 67/7 86/6 89/12 90/14 95/10 104/8 108/10 117/12 118/5 there [109] 5/9 7/3 8/6 8/8 8/11 15/25 21/23 22/5 22/23 24/19 25/7 25/11 25/15 31/2 32/7 32/14 32/15 33/16 33/16 34/15 34/21 39/23 41/1 41/16 41/25 42/1 42/2 42/15 46/1 47/12 48/2 48/10 48/13 48/16 50/20 51/10 51/24 52/12 54/17 54/19 54/25 56/15 56/20 56/25 59/19 60/7 62/4 62/12 64/25 65/25 66/9 67/9 69/15 70/10 71/14 72/1 72/3 74/15 75/25 77/14 77/20 77/20 78/12 81/20 83/6 85/6 85/10 85/15 85/19 85/21 86/6 87/11 89/7 89/7 90/11 90/21 91/5 91/18 92/19 93/1 95/6 95/8 97/15 97/19 98/10 98/20 98/21 100/5 101/16 105/2 105/3 105/10 105/24 106/2 106/4 106/7 106/9 107/13 107/20 109/12 110/1 110/8 111/1 111/20 112/3 112/15 112/21 114/19 114/20 there's [2] 59/7 69/20 Therefore [1] 33/5 therein [2] 41/9 65/5 thereto [9] 16/9 43/5 44/5 61/2 61/8 61/13 64/11 67/19 67/23 these [9] 56/4 77/10 79/13 82/20 86/23 89/25 91/18 94/17 94/25 they [43] 3/22 5/24 7/12 15/18 19/11 20/4 20/5 20/6 26/25 26/25 27/2 27/12 69/22 73/22 73/25 77/21 80/6 80/16 80/20 86/20 86/22 86/23 86/24 87/18 88/4 88/8 88/18 97/21 97/22 97/23 102/12 103/4 103/24 104/25 107/3 114/20 116/1 116/5 116/7 116/8 116/10 116/14 117/23 they're [12] 21/7 69/17 73/20 74/14 79/1 80/1 80/19 87/23 88/4 88/14 114/15 116/12 thing [3] 46/15 47/15 58/20 things [15] 25/9 25/11 47/7 59/17 79/18 84/16 87/10 90/16 92/3 92/23 98/22 100/12 105/16 111/25 116/2 think [50] 8/17 8/21 10/18 23/14 29/11 41/3 46/23 46/24 47/11 48/23 49/11 51/21 56/19 59/13 68/20 69/3 69/4 70/20 70/21 70/25 71/2 74/20 75/9 77/8 78/19 80/1 81/7 81/25 84/17 88/4 88/4 89/23 91/21 91/24 94/22 99/22 100/12 102/21 105/24 107/10 107/13 107/16 108/12 108/18 109/8 112/5 113/14 114/13 114/16 118/15 third [1] 92/11 this [113] 2/16 6/14 7/8 7/21 7/25 8/16 11/10 11/17 11/22 11/22 12/1 15/13 15/16 15/19 16/2 17/25 18/23 19/1 21/1 21/20 22/14 22/17 23/1 24/24 25/5 25/8 25/19 25/21 26/24 27/4 28/8 34/3 39/14 40/15 41/6 41/22 42/7 42/10 42/12 42/18 46/1 46/5 47/23 48/15 50/2 51/6 52/22 52/23 52/25 53/4 58/20 59/5 60/20 61/2 62/7 62/15 64/9 65/10 65/16 66/18 67/11 68/16 69/1 69/6 69/7 69/8 70/5 70/13 71/3 72/7 74/20 74/24 75/13 75/25 79/7 83/4 83/21 86/4 87/13 87/15 87/20 87/25 88/6 89/22 90/2 90/6 91/24 92/4 92/14 93/3 93/4 93/6 94/11 97/14 97/19 98/1 98/4 98/23 99/4	99/24 100/9 103/2 104/5 105/5 106/20 107/17 107/21 107/23 108/14 109/9 112/16 116/3 117/2 Thompson [30] 21/22 59/15 59/17 59/24 63/3 63/4 63/10 63/20 64/22 66/24 67/3 67/7 67/17 67/22 68/1 68/8 68/10 72/13 73/10 73/12 77/1 77/3 96/10 113/3 113/10 113/12 117/7 117/9 118/17 118/20 thorough [1] 19/11 those [44] 3/8 4/21 7/14 7/20 11/9 20/3 24/7 33/15 40/1 41/4 48/21 49/4 49/7 49/9 56/10 59/22 64/17 66/25 69/16 69/19 69/21 69/25 70/2 70/4 70/11 71/19 78/18 79/5 79/20 81/13 83/25 84/17 86/2 86/8 86/18 87/10 91/3 91/11 93/15 105/16 109/25 112/13 114/17 116/9 though [5] 5/24 46/12 81/17 86/18 103/11 thought [2] 51/5 114/19 thousand [1] 117/18 three [6] 3/3 7/8 7/14 30/10 79/23 79/24 through [26] 2/20 3/3 5/5 7/5 16/8 22/4 22/25 23/16 27/22 40/1 49/6 49/7 50/4 54/24 55/4 55/11 58/7 59/7 61/12 67/18 81/14 82/19 86/5 96/14 97/20 104/7 throughout [2] 47/23 68/23 tied [1] 83/17 time [17] 11/23 23/21 27/2 42/7 42/13 46/12 62/7 71/10 72/21 78/7 78/13 85/8 91/23 101/25 102/13 109/24 110/3 times [1] 117/18 timetable [1] 70/19 timing [2] 10/23 10/24 today [7] 15/16 78/16 81/22 87/23 88/15 93/10 117/17 today's [2] 88/13 118/10 told [1] 59/3 ton [8] 94/25 102/19 103/18 104/14 104/17 104/19 105/3 105/13 tons [8] 23/18 23/21 23/22 28/20 30/17 93/12 93/19 105/21 too [4] 28/8 55/10 86/8 98/6 top [1] 9/16 topic [1] 17/23 touch [1] 96/15 towards [1] 9/15 toxic [1] 114/14 track [1] 96/17 tracker [1] 48/2 traditional [2] 34/21 114/11 trailed [1] 8/11 transition [14] 63/25 82/4 82/6 82/8 82/10 82/22 82/23 82/25 83/19 83/21 84/6 84/10 84/20 85/13 transportation [2] 25/10 78/7 transporting [1] 23/17 treat [2] 4/21 4/24 treatment [1] 56/5 tried [1] 107/9 true [12] 39/20 88/8 89/14 89/14 89/17 89/20 90/17 105/18 106/6 106/12 107/10 118/15 try [1] 99/23 trying [4] 56/24 86/11 87/1 112/14 Tuesday [1] 101/24 turbines [1] 87/10 turn [7] 19/13 28/18 34/13 45/22 48/12 75/23 111/14 turnkey [2] 89/17 89/23 twice [1] 104/23 two [6] 32/8 53/14 79/6 79/20 96/18 111/6 type [2] 24/3 103/3 types [1] 94/25 typical [1] 25/5

<b>U</b>	<b>VOCs [2]</b> 100/4 114/10	63/9 63/23 64/2 64/5 65/25 67/5 75/2 75/8 75/9 79/9 79/22 81/19 82/8 85/10 87/1 87/23 91/7 93/3 93/11 93/25 96/15 98/14 101/8 102/10 103/14 105/8 107/16 108/12 109/9 109/17 109/22 112/15 116/2 118/2 what -- Has [1] 75/2 what's [10] 6/19 11/7 22/23 39/17 41/13 69/14 80/15 85/21 107/22 116/6 whatever [1] 71/8 when [27] 2/9 10/25 11/2 20/4 20/13 22/18 24/13 25/17 26/13 26/21 26/23 28/11 29/5 58/24 69/25 70/19 70/23 70/25 71/4 71/18 80/21 88/18 100/11 100/12 101/24 114/13 117/14 where [24] 23/25 27/25 33/17 39/10 40/14 40/20 48/12 56/14 59/13 73/19 77/7 80/19 89/17 90/7 90/19 93/10 94/22 105/19 105/20 105/25 106/10 107/17 109/10 117/9 whereas [1] 81/2 whether [25] 7/9 21/19 25/3 27/13 33/6 46/25 50/11 50/20 50/21 52/16 53/25 54/19 75/4 75/12 75/13 77/8 80/25 82/13 90/14 107/7 108/14 108/16 109/2 115/24 116/12 which [20] 2/19 5/16 15/10 18/15 28/20 40/4 40/7 46/10 47/22 48/2 48/22 48/24 50/5 54/8 56/4 60/9 62/10 70/3 80/8 114/24 while [5] 41/9 93/1 107/10 107/20 112/2 whitepaper [1] 21/3 who [15] 4/14 11/2 18/25 21/6 21/8 21/10 21/16 21/18 22/1 22/1 23/10 26/18 59/15 74/19 75/25 who's [1] 18/20 whole [5] 48/1 66/3 74/18 86/7 86/7 whom [2] 15/5 63/21 why [4] 77/24 104/22 108/6 112/3 wide [3] 18/15 25/7 25/25 widget [2] 86/15 86/16 widgets [1] 86/14 Wildlife [8] 59/16 60/3 60/25 63/12 64/7 66/22 67/10 75/3 will [26] 2/14 10/18 14/8 23/17 25/8 28/21 36/13 36/15 37/3 40/23 56/22 60/24 72/1 74/3 80/20 82/2 86/24 102/11 103/22 107/8 108/20 108/21 113/17 113/21 114/6 116/21 wind [1] 101/12 wish [1] 41/5 within [13] 30/5 30/14 70/23 71/3 74/24 85/12 89/23 91/22 93/13 94/20 98/19 105/7 112/1 without [7] 18/17 28/6 49/15 53/20 85/23 108/2 118/5 witness [38] 2/1 13/5 13/14 14/6 14/16 20/1 20/2 21/22 23/23 24/16 26/8 27/4 27/14 27/23 28/1 28/13 28/18 29/7 34/4 35/12 37/21 38/6 38/14 39/1 47/4 57/13 63/2 63/8 63/10 64/22 67/3 67/7 69/2 72/8 73/8 103/7 117/3 118/20 witness's [1] 103/2 witnesses [5] 20/3 101/24 102/4 102/10 109/4 won't [1] 97/20 wondering [1] 69/1 wondering or [1] 69/1 word [6] 40/15 40/16 40/21 64/18 64/24 66/1 work [12] 5/9 10/13 26/18 27/3 78/23 84/6 93/3 93/5 93/7 107/8 111/12 111/22 workers [1] 88/23 working [1] 26/21 works [5] 4/23 8/23 27/2 55/7 112/18 world [10] 30/23 30/25 69/16 69/21 69/23 70/8 90/13 97/4 100/2 113/18 world's [1] 105/6
ultimately [1] 49/8 uncertainty [1] 75/11 under [7] 15/19 41/9 50/6 54/9 94/7 103/17 104/23 underground [3] 31/4 31/17 32/5 understand [9] 30/12 36/3 36/17 72/17 88/20 93/14 103/8 103/10 113/16 understanding [20] 2/17 4/8 4/11 4/22 5/1 5/18 7/12 18/5 18/10 19/6 19/9 19/11 19/17 20/17 24/18 33/15 33/19 36/14 53/11 54/9 unique [1] 111/25 uniquely [1] 80/24 unit [1] 88/25 United [10] 30/2 30/6 30/9 30/10 30/13 30/14 30/19 30/21 80/10 80/13 unlike [2] 46/2 78/10 unrealistic [1] 106/1 unredacted [2] 41/22 44/3 unshifted [1] 28/4 until [8] 57/25 95/11 95/25 102/16 118/4 118/5 118/12 118/25 up [16] 11/2 22/22 41/18 47/15 49/13 51/10 56/24 62/2 71/22 73/14 77/7 87/8 90/7 90/8 91/23 108/19 updated [1] 50/3 updates [2] 22/25 23/2 upon [2] 10/21 52/10 us [9] 7/5 10/19 10/20 40/1 59/3 64/16 65/21 83/12 107/25 use [14] 2/24 5/10 5/11 82/13 82/14 82/19 82/25 83/7 83/10 83/16 83/24 93/14 100/8 100/13 used [4] 59/5 70/4 86/10 105/4 useful [4] 7/6 111/11 111/13 112/10 uses [1] 98/14 using [7] 24/23 83/14 88/21 89/20 94/18 103/1 107/11 utilities [6] 10/16 10/16 56/4 74/5 77/15 114/20 utility [7] 15/7 15/8 39/12 40/4 55/3 77/21 115/18 utility's [1] 69/5 utilize [3] 30/3 69/21 69/24 utilized [1] 70/2 utilizes [1] 101/9	<b>W</b> Wabash [8] 110/21 110/24 111/6 111/10 111/18 111/21 112/14 112/23 wait [2] 118/4 118/13 waive [1] 60/21 walk [3] 5/5 28/13 40/1 walkway [2] 58/25 59/6 want [10] 32/20 34/20 48/12 49/6 81/16 90/2 91/17 98/8 99/15 117/10 wanted [4] 3/3 47/15 48/14 81/23 warming [2] 79/8 84/15 was [53] 4/5 5/10 10/10 15/19 18/15 20/14 22/5 24/16 24/23 24/24 25/3 25/5 26/23 27/21 27/22 36/5 42/1 47/12 48/23 48/24 49/8 50/8 53/19 53/22 53/23 54/17 56/15 56/15 56/21 56/25 60/6 71/24 72/22 75/18 78/15 81/8 81/21 85/6 85/6 85/18 86/17 87/1 87/4 89/18 89/19 89/20 90/6 91/7 95/5 102/2 103/1 110/8 114/20 was -- And [1] 26/23 wasn't [2] 25/23 41/25 waste [2] 82/14 100/7 water [2] 82/14 100/8 way [9] 74/12 75/14 83/13 86/18 93/9 97/18 97/19 99/19 114/24 ways [4] 75/10 75/23 84/7 98/21 we [74] 2/9 2/11 2/19 4/21 4/24 5/10 5/11 5/12 10/8 10/9 11/15 15/10 20/7 24/21 29/2 29/4 29/18 31/8 42/13 49/7 49/11 52/17 53/13 53/23 53/25 54/5 54/6 54/7 54/15 54/18 58/25 59/4 59/14 59/14 59/24 60/19 60/24 62/1 62/9 70/18 75/9 79/21 83/1 83/4 83/4 83/5 83/13 83/20 84/4 84/14 87/20 93/3 93/6 93/10 93/18 93/18 94/21 94/22 94/24 96/15 97/4 99/16 107/7 107/8 107/10 107/17 107/19 108/6 109/19 109/19 109/20 109/22 109/22 109/23 we'd [1] 11/23 we'll [10] 2/23 11/25 16/1 42/17 57/18 62/14 67/9 95/6 95/10 96/4 we're [19] 5/11 47/16 47/22 52/23 52/24 55/6 58/22 58/24 78/19 78/20 83/14 84/12 90/7 96/16 99/14 101/11 105/16 109/18 110/21 we've [6] 47/22 75/8 85/12 85/15 94/15 112/15 web [1] 22/25 week [3] 79/24 79/24 90/6 weeks [1] 80/6 weighted [2] 50/8 55/5 well [32] 5/8 7/1 8/23 10/12 18/20 19/13 20/3 20/19 21/12 23/5 23/8 23/18 31/8 31/15 46/8 52/10 69/15 75/16 76/5 78/24 80/15 84/7 88/21 99/2 99/6 100/11 101/22 102/8 103/17 106/18 108/12 109/22 went [2] 23/3 85/19 were [32] 2/9 2/11 2/20 10/22 11/13 15/11 20/7 20/13 22/9 22/20 22/25 23/10 26/25 27/2 29/5 36/4 41/8 52/17 56/20 65/4 66/13 71/6 85/19 86/16 101/5 101/8 101/22 102/1 104/16 104/25 106/12 117/23 weren't [3] 101/22 101/23 106/13 Wes [9] 38/8 39/1 39/9 40/10 43/3 44/3 45/18 56/1 57/13 West [1] 64/3 Weyburn [1] 105/22 what [70] 2/10 3/5 3/6 3/7 6/6 6/6 6/18 6/21 8/23 10/19 14/24 15/5 18/14 18/18 19/2 19/9 23/5 23/5 23/20 23/21 24/3 24/5 24/23 28/1 28/15 31/3 31/16 32/3 39/11 45/24 47/11 49/8 51/2 54/9 54/10 54/15	63/9 63/23 64/2 64/5 65/25 67/5 75/2 75/8 75/9 79/9 79/22 81/19 82/8 85/10 87/1 87/23 91/7 93/3 93/11 93/25 96/15 98/14 101/8 102/10 103/14 105/8 107/16 108/12 109/9 109/17 109/22 112/15 116/2 118/2 what -- Has [1] 75/2 what's [10] 6/19 11/7 22/23 39/17 41/13 69/14 80/15 85/21 107/22 116/6 whatever [1] 71/8 when [27] 2/9 10/25 11/2 20/4 20/13 22/18 24/13 25/17 26/13 26/21 26/23 28/11 29/5 58/24 69/25 70/19 70/23 70/25 71/4 71/18 80/21 88/18 100/11 100/12 101/24 114/13 117/14 where [24] 23/25 27/25 33/17 39/10 40/14 40/20 48/12 56/14 59/13 73/19 77/7 80/19 89/17 90/7 90/19 93/10 94/22 105/19 105/20 105/25 106/10 107/17 109/10 117/9 whereas [1] 81/2 whether [25] 7/9 21/19 25/3 27/13 33/6 46/25 50/11 50/20 50/21 52/16 53/25 54/19 75/4 75/12 75/13 77/8 80/25 82/13 90/14 107/7 108/14 108/16 109/2 115/24 116/12 which [20] 2/19 5/16 15/10 18/15 28/20 40/4 40/7 46/10 47/22 48/2 48/22 48/24 50/5 54/8 56/4 60/9 62/10 70/3 80/8 114/24 while [5] 41/9 93/1 107/10 107/20 112/2 whitepaper [1] 21/3 who [15] 4/14 11/2 18/25 21/6 21/8 21/10 21/16 21/18 22/1 22/1 23/10 26/18 59/15 74/19 75/25 who's [1] 18/20 whole [5] 48/1 66/3 74/18 86/7 86/7 whom [2] 15/5 63/21 why [4] 77/24 104/22 108/6 112/3 wide [3] 18/15 25/7 25/25 widget [2] 86/15 86/16 widgets [1] 86/14 Wildlife [8] 59/16 60/3 60/25 63/12 64/7 66/22 67/10 75/3 will [26] 2/14 10/18 14/8 23/17 25/8 28/21 36/13 36/15 37/3 40/23 56/22 60/24 72/1 74/3 80/20 82/2 86/24 102/11 103/22 107/8 108/20 108/21 113/17 113/21 114/6 116/21 wind [1] 101/12 wish [1] 41/5 within [13] 30/5 30/14 70/23 71/3 74/24 85/12 89/23 91/22 93/13 94/20 98/19 105/7 112/1 without [7] 18/17 28/6 49/15 53/20 85/23 108/2 118/5 witness [38] 2/1 13/5 13/14 14/6 14/16 20/1 20/2 21/22 23/23 24/16 26/8 27/4 27/14 27/23 28/1 28/13 28/18 29/7 34/4 35/12 37/21 38/6 38/14 39/1 47/4 57/13 63/2 63/8 63/10 64/22 67/3 67/7 69/2 72/8 73/8 103/7 117/3 118/20 witness's [1] 103/2 witnesses [5] 20/3 101/24 102/4 102/10 109/4 won't [1] 97/20 wondering [1] 69/1 wondering or [1] 69/1 word [6] 40/15 40/16 40/21 64/18 64/24 66/1 work [12] 5/9 10/13 26/18 27/3 78/23 84/6 93/3 93/5 93/7 107/8 111/12 111/22 workers [1] 88/23 working [1] 26/21 works [5] 4/23 8/23 27/2 55/7 112/18 world [10] 30/23 30/25 69/16 69/21 69/23 70/8 90/13 97/4 100/2 113/18 world's [1] 105/6

<b>W</b>		
worldwide [2] 79/15 83/12 worst [1] 5/19 worth [1] 93/6 would [158] wouldn't [5] 88/10 110/3 110/9 110/18 117/16 WRB [7] 40/3 41/1 43/4 43/4 44/4 48/12 56/3 WRB-1 [5] 40/3 41/1 43/4 48/12 56/3 WRB-2 [1] 44/4 WRB-3 [1] 43/4 wrong [2] 71/9 76/6 wrote [2] 21/11 22/1		
<b>Y</b>		
year [10] 4/20 5/13 5/25 10/7 23/22 28/20 30/18 70/23 71/8 105/22 years [6] 78/14 80/3 81/9 81/20 83/11 97/9 yes [81] 3/14 3/19 4/2 4/12 5/3 6/25 7/19 8/9 8/13 9/17 10/9 10/18 11/4 11/18 15/1 15/18 15/21 18/1 21/5 23/20 24/15 29/3 30/7 30/19 35/5 36/9 36/17 37/11 39/16 39/22 39/25 40/8 40/18 41/7 41/12 41/17 41/20 42/11 48/1 48/10 48/11 49/5 49/21 50/1 50/9 50/19 51/1 51/17 51/20 53/22 54/14 54/17 55/13 56/23 59/11 64/12 65/7 65/11 65/14 66/5 66/8 66/16 67/6 68/17 73/18 73/24 74/6 76/5 91/10 96/23 101/5 101/14 103/15 107/6 110/23 113/25 114/4 114/8 114/13 115/11 116/23 yesterday [9] 2/9 10/6 10/22 11/13 24/16 28/2 59/21 62/6 69/3 yet [4] 38/9 53/13 103/9 112/10 you [444] you rephrase [1] 54/4 you'd [4] 5/5 23/13 28/17 39/24 you're [18] 6/4 6/5 13/6 17/18 21/16 28/11 34/24 37/16 41/9 57/6 71/15 72/17 72/19 82/3 101/1 103/13 112/1 118/18 you've [9] 20/18 22/20 46/8 46/9 72/20 81/25 99/22 103/14 110/19 your [137] yourself [1] 17/15		
<b>Z</b>		
zero [5] 4/21 4/25 5/2 5/10 5/16 ZIEGNER [1] 64/20 Zupan [3] 20/1 27/23 28/19		